Enclosure 5

ICRANet collaboration with Brazil

Summary

Introduction

ICRANet, the International Center for Relativistic Astrophysics Network, is an international organization promoting research activities in relativistic astrophysics and related areas. The Members of ICRANet are Italy, custodian of the Agreement, Armenia, Brazil, the State of Vatican City, Stanford University, the University of Arizona in Tucson, ICRA.

An impressive number of success have characterized the activities of Brazil within ICRANet and the activities of ICRANet in Brazil. We recall the main ones:

- **The entrance of Brazil in ICRANet**
  On September 21, 2005 the Director of ICRANet signed with Minister Dante Coelho De Lima, Chargé d'Affaires of Brazil in Rome, the adhesion of the Federative Republic of Brazil to ICRANet. The entrance of Brazil, requested by the President of Brazil Luiz Ignácio Lula Da Silva, has been unanimously ratified by the Brazilian Parliament. The "Decreto Legislativo n. 292 de 2007"signed by the National Congress was turned into law on August 12, 2011, when the President of Brazil Dilma Rousseff signed the entrance of Brazil in ICRANet (pp 3 – 14).

- **The ICRANet Seat Agreement with Brazil**
  On September 12, 2013 the Director of ICRANet and the President of Brazil with the proxy to the Brazilian Ambassador in Rome, Ricardo Neiva Tavares, signed the Seat Agreement with Brazil and the Seat of ICRANet in Rio de Janeiro has been activated, at first in the premises granted by CBPF (pp 15 -27).

- **Nomination of the representative of Brazil in the ICRANet Steering Committee**
  On August 14, 2014 ICRANet received official note from the Embassy of Federative Republic of Brazil in Rome communicating the appointment of Counselor Ademar Seabra as representative of Brazil in the ICRANet Steering Committee. Still missing are the nomination by the MCTIC of a second representative in ICRANet Steering Committee, as from Article 5 of the ICRANet Statute, and a representative in the ICRANet Scientific Committee, as from Article 10 of the ICRANet Statute (pp 29 - 33).

- **ICRANET 15th Steering Committee, Extraordinary Meeting, Rome, December 1st, 2016, fourth item on the Agenda: "Financial contributions from Brazil"**
  In spite of all above positive activities and the excellent collaboration with Itamaraty, recent difficulties have surfaced including delays in the financial contributions of Brazil into ICRANet, indicated in the Brazilian Budgetary Law. Also to mention the delay of the appointments by the MCTIC of its representative in the in ICRANet Steering Committee, as from Article 5 of the ICRANet Statute, and its representative in the ICRANet Scientific Committee, as from Article 10 of the ICRANet Statute. The situation is so unusual that all ICRANet Members are concerned about the negatives consequences on the teaching and research activities of ICRANet both in Brazil and in all other international connections. I have expressed this concern in the recent ICRANet 15th Steering Committee Extraordinary Meeting, held in Rome on December 1st, 2016. I hereby appended the Minutes of Item 4 of the agenda of that meeting (see enclosure pages 35 -38).

- **Petition signed by 22 distinguished scientists from Brazil**
  Also on the same issue, 22 of the most distinguished scientists from Brazil have sent a petition to the Minister Gilbert Kassab (see enclosure pages 39 - 43). We all look forward for the considerations on this matters of outstanding relevance for the International Relativistic astrophysics activities in Brazil by Minister Kassab.

- **Scientific and teaching activities of ICRANet with Brazilian institutions**
  ICRANet is carrying out scientific and teaching activities with the Brazilian institutions and research centers to which have signed collaboration agreement with (pp 45 - 66).

- **ICRANet-IRAP PhD fellowships attributed to Brazilian students and their scientific publications.**
  In the IRAP PhD promoted by ICRANet in connection with some of the leading Astrophysical and Physical Institutions in Europe and worldwide (see: https://en.wikipedia.org/wiki/IRAP_PhD_Program), fellowships have been granted, among others, to 7 Brazilian students some of which have, by now, returned to Brazil with a position of professorship. They have obtained their IRAP Ph. D. degree, jointly awarded by the Rectors or Presidents of the six European Universities and already received positions of professorships and post-doctoral fellowships at international level (pp 67 - 83).

- **CAPES-ICRANet Program, cycle – 2013-2016, and scientific publications**
  3 Brazilian students are currently enrolled in the IRAP Ph.D. Program; 5 Brazilian professors and 6 Brazilian postdoctoral researchers have been doing research in ICRANet in Europe; 5 ICRANet postdoctoral researchers have been doing research in Brazil; ICRANet visiting professors have been teaching in Brazil. Results of all these activities can be seen in the over 100 scientific publications listed in this document. (pp 85 - 140).

- **ICRANet – Brazil outreach activities**
  In parallel to the above activities, special attention has been traditionally given by ICRANet to the outreach programs. The best example in 2015 has been the MGXIV meeting, with 64 Brazilian participants, as well as its satellite meetings (among them: the Second ICRANet César Lattes Meeting, see: http://www.icranet.org/2cl; proceedings have appeared in the AIP volume: http://www.icranet.org/documents/2CL.pdf; and the public lectures in João Pessoa, see: http://www.icranet.org/videoJoaoPessoa). In addition, ICRANet organized the Sobral Meeting "The Sun, the Stars, the Universe and General Relativity", held on May 26-29, 2009, Fortaleza (CE) Brazil, and participated in the following Brazilian schools: Xth Brazilian School Of Cosmology and Gravitation (BSCG), held at the city of Rio de Janeiro, from July 29 to August 9 2002; the XIth BSCG, held from July, 26 to August, 4 2004, at Mangaratiba (RJ); the XIIth BSCG, held at the city of Rio de Janeiro, from 10 to 23 of September 2006; the XIIIth BSCG, held at the city of Rio de Janeiro, from July 10 to August 2 2008; the XIV BSCG, held at Mangaratiba from August 30 to September 11, 2010; XV BSCG, held at Mangaratiba, from August 19 to September 1, 2012 (pp 141 - 169).

- **The Brazilian Science Data Center (BSDC)**
  The development of scientific research in the fields of relativistic astrophysics, cosmology and space research has an essential hub in the development of the BSDC also in Brazil. The BSDC, a novel astrophysics data/base which has been built following the concept of ASI Science Data Center (ASDC) by the Italian Space Agency, consists of a unique infrastructure as interface connecting experimental and theoretical astrophysicists. The BSDC, made possible by an agreement between ASI and ICRANet, is currently implemented in the ICRANet Headquarters in Pescara and in Brazil, at Centro Brasileiro de Pesquisas Físicas (CBPF) and at the Universidade Federal do Rio Grande do Sul (UFRGS), and it will be later expanded to all other Centers in Brazil collaborating with ICRANet (pp 171 - 185).

- **Maps of collaboration agreements of ICRANet**
  - international: (p. 189).
  - with Brazil (p. 191).

- **ICRANet signed agreements with Brazilian institutions**
  17 agreements have been signed by the Director of ICRANet with the following Brazilian universities, research centers and support agencies: FAPERJ, CBPF, ITA, UFF, UFRGS, INPE, UnB, UNICAMP, UFSC, UDESC, UFPB, Government of the State of Ceará, IFCE, UFPE, UNIFEI, UERJ and CAPES (pp 193 - 277).

The entrance of Brazil in ICRANet

The entrance of Brazil in ICRANet (see: https://en.wikipedia.org/wiki/ICRANet), was established by Law 7.552 of 12th August 2011, with a yearly voluntary contribution, included as a specific item in the Brazilian Federal budget.

From left to right: Minister Counselor Dante Coelho de Lima (Chargé d'Affaires of Brazil in Rome) and Professor Remo Ruffini (ICRANet Director) on the occasion of the signature of the adhesion of the Federative Republic of Brazil to ICRANet, on September 21, 2005.

Enclosure 3:

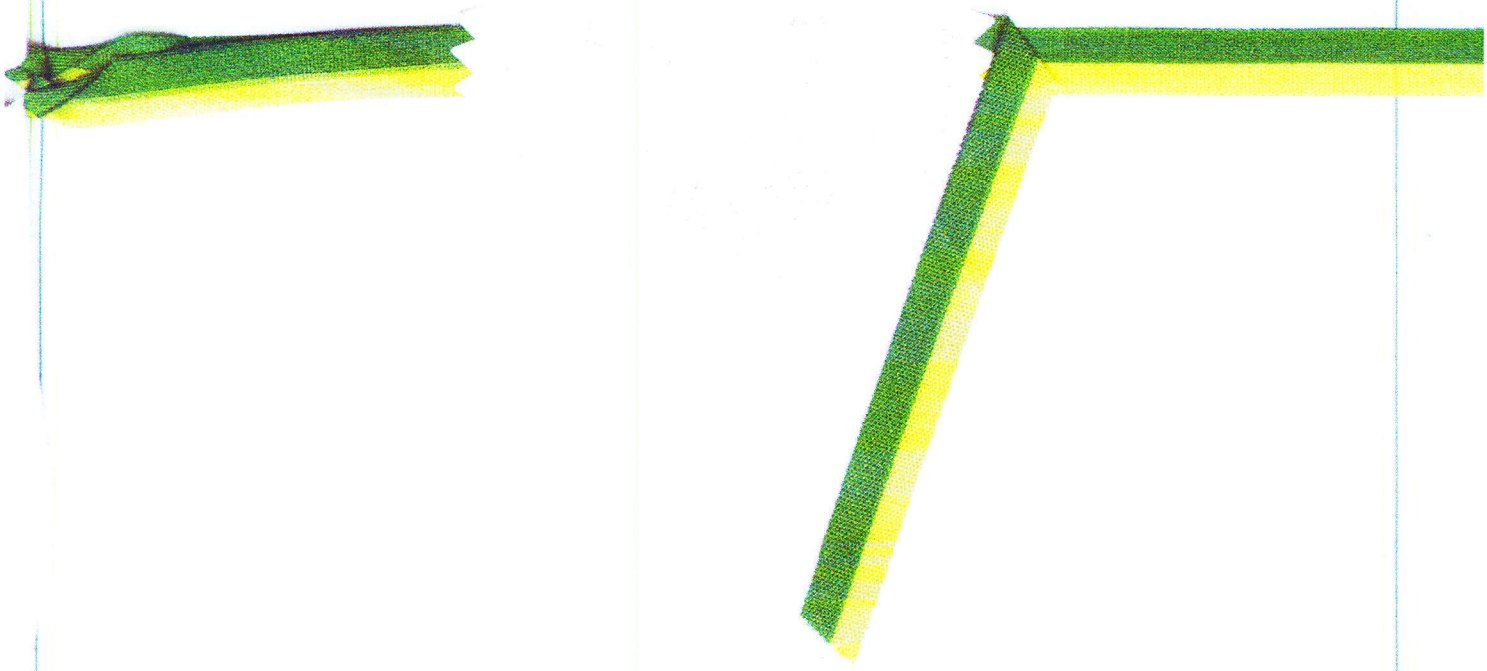
- Full powers to the Minister Counselor Dante Coelho de Lima from the President of Brazil, H.E. Luiz Inácio Lula da Silva (Portuguese)
- Adhesion of the Federative Republic of Brazil to ICRANet

LUIZ INÁCIO LULA DA SILVA
PRESIDENTE DA REPÚBLICA FEDERATIVA DO BRASIL

Faço saber, aos que esta Carta de Plenos Poderes virem, que nomeio o Ministro Dante Coelho de Lima, Encarregado de Negócios do Brasil junto ao Governo da República Italiana, meu Plenipotenciário para assinar, em nome do Governo brasileiro, o Acordo para o Estabelecimento da Rede Internacional de Centros de Astrofísica Relativística (INCRANET).

Em fé do que, mandei passar esta Carta de Plenos Poderes, que vai por mim assinada e contém o selo das Armas da República, referendada pelo Ministro de Estado das Relações Exteriores.

Dada no Palácio do Planalto, em Brasília, em 9 de setembro de 2005; 184º da Independência e 117º da República.



DECRETO LEGISLATIVO
Nº 292, DE 2007(*)

Aprova o texto do Acordo de Estabelecimento da Rede Internacional de Centros para Astrofísica Relativística - ICRANET, organização internacional com sede em Pescara, Itália, e de seus Estatutos, assinado em 21 de setembro de 2005.

O Congresso Nacional decreta:

Art. 1º Fica aprovado o texto do Acordo de Estabelecimento da Rede Internacional de Centros para Astrofísica Relativística - ICRANET, organização internacional com sede em Pescara, Itália, e de seus Estatutos, assinado em 21 de setembro de 2005.

Parágrafo único. Ficam sujeitos à aprovação do Congresso Nacional quaisquer atos que possam resultar em revisão do referido Acordo, bem como quaisquer ajustes complementares que, nos termos do inciso I do caput do art. 49 da Constituição Federal, acarretem encargos ou compromissos gravosos ao patrimônio nacional.

Art. 2º Este Decreto Legislativo entra em vigor na data de sua publicação.

Senado Federal, em 23 de outubro de 2007
Senador TIÃO VIANA
Presidente do Senado Federal
Interino

(*) O texto do Acordo acima citado está publicado no DSF de 20/06/2007

Faço saber que o Congresso Nacional aprovou, e eu, Tião Viana, Presidente do Senado Federal Interino, nos termos do art. 48, inciso XXVIII, do Regimento Interno, promulgo o seguinte

DECRETO LEGISLATIVO
Nº 293, DE 2007(*)

Aprova o texto do Acordo sobre Serviços Aéreos entre o Governo da República Federativa do Brasil e o Governo da República de Cabo Verde, celebrado em Praia, em 29 de julho de 2004.

O Congresso Nacional decreta:

Art. 1º Fica aprovado o texto do Acordo sobre Serviços Aéreos entre o Governo da República Federativa do Brasil e o Governo da República de Cabo Verde, celebrado em Praia, em 29 de julho de 2004.

Parágrafo único. Ficam sujeitos à aprovação do Congresso Nacional quaisquer atos que possam resultar em revisão do referido Acordo, bem como quaisquer ajustes complementares que, nos termos do inciso I do caput do art. 49 da Constituição Federal, acarretem encargos ou compromissos gravosos ao patrimônio nacional.

Art. 2º Este Decreto Legislativo entra em vigor na data de sua publicação.

Senado Federal, em 23 de outubro de 2007
Senador TIÃO VIANA
Presidente do Senado Federal
Interino

(*) O texto do Acordo acima citado está publicado no DSF de 12/07/2007

Faço saber que o Congresso Nacional aprovou, e eu, Tião Viana, Presidente do Senado Federal Interino, nos termos do art. 48, inciso XXVIII, do Regimento Interno, promulgo o seguinte

DECRETO LEGISLATIVO
Nº 294, DE 2007(*)

Aprova o texto do Acordo de Cooperação Mútua entre o Governo da República Federativa do Brasil e o Governo da República Oriental do Uruguai para combater o Tráfego de Aeronaves envolvidas com Atividades Ilícitas Transnacionais, assinado em Montevidéu, em 14 de setembro de 2004.

O Congresso Nacional decreta:

Art. 1º Fica aprovado o texto do Acordo de Cooperação Mútua entre o Governo da República Federativa do Brasil e o Governo da República Oriental do Uruguai para combater o Tráfego de Aeronaves envolvidas com Atividades Ilícitas Transnacionais, assinado em Montevidéu, em 14 de setembro de 2004.

Parágrafo único. Ficam sujeitos à aprovação do Congresso Nacional quaisquer atos que possam resultar em revisão do referido Acordo, bem como quaisquer ajustes complementares que, nos termos do inciso I do caput do art. 49 da Constituição Federal, acarretem encargos ou compromissos gravosos ao patrimônio nacional.

Art. 2º Este Decreto Legislativo entra em vigor na data de sua publicação.

Senado Federal, em 23 de outubro de 2007
Senador TIÃO VIANA
Presidente do Senado Federal
Interino

(*) O texto do Acordo acima citado está publicado no DSF de 12/07/2007

Presidência da República

DESPACHO DO PRESIDENTE DA REPÚBLICA

MENSAGEM

Nº 795, de 23 de outubro de 2007. Encaminhamento ao Supremo Tribunal Federal de informações para instruir o julgamento da Ação Direta de Inconstitucionalidade nº 3970.

CASA CIVIL
SECRETARIA EXECUTIVA
IMPRENSA NACIONAL

PORTARIA Nº 275, DE 23 DE OUTUBRO DE 2007

O DIRETOR-GERAL DA IMPRENSA NACIONAL, no uso das atribuições que lhe confere o art. 5º, inciso II, do Regimento Interno, aprovado pela Portaria nº 147, de 9 de março de 2006, da Ministra de Estado Chefe da Casa Civil da Presidência da República, resolve:

Art. 1º As assinaturas do Diário da Justiça, Seções 1, 2 e 3, nas versões impressa e eletrônica, comercializadas a partir desta publicação, terão sua vigência máxima até 31 de dezembro de 2007.

Parágrafo único. O valor da assinatura será proporcional à periodicidade contratada.

Art. 2º Fica revogada a Portaria nº 259, de 28 de setembro de 2007.

Art. 3º Esta Portaria entra em vigor na data de sua publicação.

FERNANDO TOLENTINO DE SOUSA VIEIRA

SECRETARIA ESPECIAL DE POLÍTICAS PARA AS MULHERES

PORTARIA Nº 57, DE 23 DE OUTUBRO DE 2007

A SECRETÁRIA ESPECIAL DE POLÍTICAS PARA AS MULHERES, DA PRESIDÊNCIA DA REPÚBLICA, no uso de suas atribuições e tendo em vista o disposto na Lei nº 10.683, de 28 de maio de 2003,

RESOLVE:

Art. 1º Prorrogar por mais sessenta dias, as tarefas conferidas à Comissão Provisória do Fórum Nacional de Organismos Governamentais de Políticas para as Mulheres instituída pela Portaria n° 39, de 23 de Julho de 2007.

Art. 2º Esta portaria entra em vigor na data de sua publicação.

NILCÉA FREIRE

SECRETARIA ESPECIAL DE PORTOS
COMPANHIA DOCAS DO RIO GRANDE DO NORTE

Balancete Patrimonial em: 30 de Setembro de 2007
CNPJ Nº 34.040.345/0001-90

A T I V O	EM R$ 1,00
Ativo Circulante	46.975.563,14
Disponibilidades	30.867.425,21
Direitos Realiz. Exercício Seguinte	16.068.680,86
Despesas Aprop. Exercício Seguinte	39.457,07
Realizável a Longo Prazo	1.536.179,38
Ativo Permanente	201.893.094,70
Investimentos	25.765,18
Imobilizado	201.867.329,52
T O T A L D O A T I V O	250.404.837,22

P A S S I V O	EM R$ 1,00
Passivo Circulante	9.464.198,58
Obrigações Vencíveis Exercício Seguinte	9.464.198,58
Exigível a Longo Prazo	37.228.075,97
Patrimônio Líquido	203.712.562,67
Capital Social	110.451.804,78
Reservas de Capital	298.205.774,61
Correção Monetária	0,00
Crédito p/Aumento de Capital	298.205.774,61
Lucro ou Prejuízos Acumulados	(204.945.016,72)
T O T A L D O P A S S I V O	250.404.837,22

Natal, 30 de Setembro de 2007.
ANA MARIA DE SENA PATRÍCIO
Gerente de Recursos Financeiros Substituta
Contadora CRC 3815/RN
CPF 201.065.804-34

Ministério da Agricultura, Pecuária e Abastecimento

GABINETE DO MINISTRO

INSTRUÇÃO NORMATIVA Nº 45, DE 23 DE OUTUBRO DE 2007

O MINISTRO DE ESTADO DA AGRICULTURA PECUÁRIA E ABASTECIMENTO, no uso da atribuição que lhe confere o art. 87, parágrafo único, inciso II, da Constituição, tendo em vista o disposto na Lei nº 1.283, de 18 de dezembro de 1950, regulamentada pelo Decreto nº 30.691, de 29 de março de 1952, que dispõe sobre a Inspeção Industrial e Sanitária dos Produtos de Origem Animal,

Considerando a Resolução MERCOSUL/GMC/RES. Nº 48/97, que aprovou o Regulamento Técnico de Identidade e Qualidade de Queijo Azul, e o que consta do Processo nº 21000.003344/2007-25, resolve:

Art. 1º Adotar o Regulamento Técnico de Identidade e Qualidade de Queijo Azul, na forma do Anexo à presente Instrução Normativa.

Art. 2º As empresas terão o prazo de 90 (noventa) dias, a contar da data da publicação desta Instrução Normativa, para providenciarem a adequação dos registros dos produtos, promovendo as alterações necessárias.

Art. 3º Esta Instrução Normativa entra em vigor na data de sua publicação.

REINHOLD STEPHANES

ANEXO

REGULAMENTO TÉCNICO DE IDENTIDADE E QUALIDADE DE QUEIJO AZUL

1. ALCANCE

1.1. Objetivo: estabelecer a identidade e os requisitos mínimos de qualidade exigidos do Queijo Azul destinado ao consumo humano.

1.2. Âmbito de aplicação: o presente Regulamento refere-se ao Queijo Azul destinado ao comércio interestadual ou internacional.

2. DESCRIÇÃO

2.1. Definição: entende-se por Queijo azul o produto obtido da coagulação do leite por meio de coalho e/ou outras enzimas coagulantes apropriadas, complementado ou não pela ação de bactérias lácticas específicas, e mediante um processo de fabricação que utiliza fungos específicos (*Penicillium roqueforti*), complementados ou não pela ação de fungos e/ou leveduras subsidiárias, encarregadas de conferir ao produto características típicas durante os processos de elaboração e maturação.

2.2. CLASSIFICAÇÃO

2.2.1. O Queijo Azul é um queijo gordo e de umidade média a alta, de acordo com a classificação estabelecida no "Regulamento Técnico Geral de Identidade e Qualidade de Queijos".

2.3. DESIGNAÇÃO (Denominação de venda): será denominado " Queijo Azul".

3. REFERÊNCIAS

Regulamento Técnico Geral MERCOSUL para Fixação de Requisitos Microbiológicos de Queijos.

Regulamento Técnico Geral MERCOSUL sobre as Condições Higiênico-Sanitárias e de Boas Práticas de Fabricação para Estabelecimentos de Elaboração e Industrialização de Alimentos.

Regulamento Técnico Geral MERCOSUL de Identidade e Qualidade de Queijos.

Norma FIL 4A: 1982. Queijos e Queijos Processados. Determinação do Conteúdo de Sólidos Totais. (Método de Referência)

Norma FIL 5B: 1986. Queijos e Produtos Processados de Queijos Conteúdo de Gordura.

Norma FIL 50C: 1995. Leite e Produtos Lácteos Métodos de Amostragem.

Norma A6 do Codex Alimentarius Norma Geral para Queijos.

Norma FIL 99A: 1987. Avaliação Sensorial de Produtos Lácteos.

4. COMPOSIÇÃO E REQUISITOS

4.1. COMPOSIÇÃO

4.1.1. Ingredientes obrigatórios:

4.1.1.1. Leite e/ou leite reconstituído padronizados ou não em seu teor de gordura; os leites empregados na elaboração do Queijo Azul deverão proceder das espécies bovina, ovina ou caprina e podem ser utilizados isoladamente ou em misturas;

4.1.1.2. Coalho e outras enzimas apropriadas;

4.1.1.3. Cloreto de sódio; e

4.1.1.4. Cultivos de *Penicillium roqueforti.*

4.1.2. Ingredientes Opcionais:

4.1.2.1. Leite em concentrado;

4.1.2.2. Creme;

4.1.2.3. Leite em pó;

4.1.2.4. Caseinatos alimentícios;

4.1.2.5. Proteínas lácteas;

4.1.2.6. Outros sólidos de origem Láctea;

4.1.2.7. Cultivos de bactérias lácteas específicas;

Enfatizando que medidas impostas pelas resoluções 1572 (2004), 1643 (2005) e 1975 (2011) constituem contribuição para a estabilidade na Costa do Marfim e *sublinhando* que tais medidas são destinadas a apoiar o processo de paz na Costa do Marfim,

Acolhendo com satisfação que o Presidente Alassane Dramane Ouattara da Costa do Marfim encontra-se agora em condições de assumir todas suas responsabilidades como Chefe de Estado, em conformidade com a vontade do povo marfinense expressa nas eleições presidenciais de 28 de novembro de 2010 e conforme reconhecido pela comunidade internacional,

Enfatizando o imperativo de que todos os marfinenses sustentem esforços para promover a reconciliação nacional e a consolidação da paz por meio de diálogo e consulta e *acolhendo com satisfação* a assistência da União Africana (UA) e da Comunidade Econômica dos Estados da África Ocidental (ECOWAS) nesse aspecto,

Recordando suas resoluções 1325 (2000), 1820 (2008), 1888 (2009), 1889 (2009) e 1960 (2010) sobre mulheres, paz e segurança, suas resoluções 1612 (2005) e 1882 (2009) sobre crianças e conflitos armados e suas resoluções 1674 (2006) e 1894 (2009) sobre a proteção de civis em conflitos armados,

Reiterando a firme condenação a todas as violações aos direitos humanos e ao direito internacional humanitário na Costa do Marfim, *condenando* toda violência cometida contra civis, inclusive mulheres, crianças, deslocados internos e estrangeiros, e outras violações e abusos dos direitos humanos, em particular desaparecimentos forçados, assassinatos extrajudiciais, assassinatos e mutilação de crianças e estupros e outras formas de violência sexual e *sublinhando* que seus perpetradores devem ser submetidos à justiça,

Sublinhando a importância de que o Grupo de Peritos, originalmente estabelecido de acordo com o parágrafo 7 da resolução 1584 (2004), receba recursos suficientes para a implementação de seu mandato,

Determinando que a situação na Costa do Marfim segue constituindo uma ameaça à paz e segurança internacionais na região,

Atuando sob o Capítulo VII do Estatuto das Nações Unidas,

1. *Decide* renovar, até 30 de abril de 2012, as medidas relativas a armas e as medidas financeiras e de viagem impostas pelos parágrafos 7 a 12 da resolução 1572 (2004), parágrafo 5 da resolução 1946 (2010) e parágrafo 12 da resolução 1975 (2011) e *decide também* renovar, até 30 de abril de 2012, as medidas impedindo a importação por qualquer Estado de todos os diamantes brutos da Costa do Marfim impostas pelo parágrafo 6 da resolução 1643 (2005);

2. *Decide* reavaliar as medidas renovadas no parágrafo 1 acima à luz do progresso obtido na estabilização em todo o país, na realização das eleições parlamentares e na implementação das etapas essenciais do processo de paz, conforme mencionado na Resolução 1933 (2010), até o final do período mencionado no parágrafo 1; e *decide também* realizar uma revisão preliminar das medidas renovadas no parágrafo 1 acima, até 31 de outubro de 2011, com vistas a possivelmente modificar, levantar ou manter, antes de 30 de abril de 2012, a totalidade ou parcela das medidas do regime de sanções, de acordo com o progresso do processo de paz, com os desenvolvimentos relacionados a violações dos direitos humanos e os desenvolvimentos relacionados às eleições parlamentares;

3. *Conclama* todos os Estados-membros, em particular aqueles da subregião, a implementar plenamente as medidas renovadas no parágrafo 1 acima, inclusive, segundo caiba, mediante a adoção de regras e regulamentos necessários e *conclama também* a Operação das Nações Unidas na Costa do Marfim (UNOCI) a dar apoio integral, de acordo com sua capacidade e mandato, e *conclama* as forças francesas a apoiar a UNOCI nesse sentido, respeitados os limites de seu desdobramento e de sua capacidade;

4. *Insta* todos os combatentes armados ilegais a deporem suas armas imediatamente, *encoraja* a UNOCI, dentro de seu mandato e limites de capacidade e áreas de desdobramento, a continuar a apoiar o Governo marfinense na coleta e armazenamento de tais armas e *conclama* também as autoridades marfinenses, inclusive a Comissão Nacional de Combate à Proliferação e ao Tráfico Ilícito de Armas Pequenas e Armamento Leve, para garantir que tais armas sejam neutralizadas ou não sejam ilegalmente disseminadas, de acordo com a Convenção da ECOWAS sobre Armas Pequenas e Armamento Leve, suas Munições e outros Materiais Associados;

5. *Recorda* que a UNOCI, no contexto de monitoramento do embargo de armas, tem mandato para recolher, segundo caiba, armas e qualquer material conexo enviado à Costa do Marfim em violação às medidas impostas pelo parágrafo 7 da resolução 1572 (2004), e para dispor de tais armas e material conexo conforme apropriado;

6. *Expressa* sua profunda preocupação com a presença de mercenários na Costa do Marfim, notadamente de países vizinhos, e *conclama* as autoridades da Costa do Marfim e da Libéria a coordenar suas ações para resolver esse problema e *encoraja* também a UNOCI e a Missão das Nações Unidas na Libéria (UNMIL), de acordo com seus respectivos mandatos, a apoiar, respectivamente, os Governos da Costa do Marfim e da Libéria no monitoramento de suas fronteiras, com particular atenção a qualquer movimentação de combatentes ou transferência de armas na fronteira;

7. *Reitera* a necessidade de que autoridades marfinenses garantam o livre acesso do Grupo de Peritos, assim como da UNOCI e das Forças Francesas que a apoiam, aos equipamentos, locais e instalações referidos no parágrafo 2 (a) da Resolução 1584 (2005) e a todas as armas, munições e material conexo de todas as forças de segurança, independentemente de sua localização, inclusive as armas resultantes da coleta referida no parágrafo 4 acima, quando cabível sem notificação, conforme estabelecido em suas resoluções 1739 (2007), 1880 (2009), 1933 (2010) e 1962 (2010);

8. *Decide* que o fornecimento de veículos às forças de segurança marfinenses ficará sujeito às medidas impostas pelo parágrafo 7 da resolução 1572 (2004);

9. *Decide* que o procedimento de isenção estabelecido no parágrafo 8 (e) da resolução 1572 (2004) aplicar-se-á apenas a armas e material conexo, veículos e prestação de treinamento e assistência técnica em apoio ao processo marfinense de Reforma do Setor de Segurança, conforme pedido formal apresentado pelo Governo Marfinense e mediante prévia aprovação antecipada pelo Comitê de Sanções;

10. *Sublinha* que está plenamente preparado para impor medidas direcionadas contra pessoas a serem designadas pelo Comitê, de acordo com os parágrafos 9, 11 e 14 da Resolução 1572 (2004), entre outras coisas:

(a) Sejam consideradas uma ameaça ao processo de paz e reconciliação nacional na Costa do Marfim, em particular por bloquearem o avanço do processo de paz, tal como disposto no Acordo Político de Uagadugu;

(b) Ataquem ou obstruam a ação da UNOCI, das forças francesas que a apoiam e do Representante Especial do Secretário-Geral na Costa do Marfim;

(c) Sejam responsáveis por obstáculos à liberdade de movimentos da UNOCI e das forças francesas que a apoiam;

(d) Sejam responsáveis por violações graves dos direitos humanos e do direito humanitário internacional cometidas na Costa do Marfim;

(e) Incitem publicamente o ódio e a violência; e

(f) Violem as medidas impostas pelo parágrafo 1 acima;

11. *Reitera* sua disposição de impor sanções contra aqueles que obstruam o processo eleitoral, especificamente a ação da Comissão Eleitoral Independente de todos os outros operadores envolvidos, e a proclamação e certificação dos resultados das eleições parlamentares;

12. *Solicita* que todos os Estados interessados, em particular aqueles da subregião, cooperem integralmente com o Comitê de Sanções e *autoriza* o Comitê a solicitar quaisquer outras informações que considere necessárias;

13. *Decide* estender o mandato do Grupo de Peritos, conforme estabelecido no parágrafo 7 da resolução 1727 (2006), até 30 de abril de 2012 e *solicita* ao Secretário-Geral que adote as medidas necessárias para apoiar o Comitê;

14. *Solicita* que o Grupo de Peritos apresente um relatório preliminar ao Comitê até 15 de outubro de 2011 e apresente um relatório final e recomendações ao Conselho de Segurança, por intermédio do Comitê, quinze dias antes do final do período de seu mandato, sobre a implementação das medidas impostas nos parágrafos 7, 9 e 11 da Resolução 1572 (2004), parágrafo 6 da Resolução 1643 (2005) e parágrafo 12 da Resolução 1975 (2011);

15. *Decide* que o Grupo de Peritos, conforme mencionado no parágrafo 7 (e) da resolução 1727 (2006), poderá incluir em seu relatório, segundo caiba, quaisquer informações e recomendações relevantes para a possível designação adicional pelo Comitê de pessoas e empresas que se enquadrem na descrição dos parágrafos 9 e 11 da Resolução 1572 (2004) e *recorda também* o relatório do Grupo de Trabalho Informal sobre Questões Gerais de Sanções (S/2006/997) sobre melhores práticas e métodos, inclusive seus parágrafos 21, 22 e 23, que discutem as possíveis etapas para esclarecer os padrões metodológicos para mecanismos de monitoramento;

16. *Solicita* ao Secretário-Geral que transmita, segundo caiba, ao Conselho de Segurança, por intermédio do Comitê, as informações obtidas pela UNOCI e, quando possível, revisadas pelo Grupo de Peritos, a respeito do fornecimento de armas e material relacionado à Costa do Marfim;

17. *Solicita* também ao Governo Francês que transmita, segundo caiba, ao Conselho de Segurança, por intermédio do Comitê, as informações obtidas pelas forças francesas e, quando possível, revisadas pelo Grupo de Peritos, a respeito do fornecimento de armas e material relacionado à Costa do Marfim;

18. *Solicita* também ao Sistema de Certificação de Processo de Kimberley que transmita segundo caiba, ao Conselho de Segurança, por intermédio do Comitê, informações que, quando possível, tenham sido revisadas pelo Grupo de Peritos, a respeito da produção e exportação ilícita de diamantes da Costa do Marfim e *decide também* renovar as isenções estabelecidas pelo parágrafo 16 e 17 da Resolução 1893 (2009) com respeito à segurança de amostras de diamantes brutos para fins de pesquisa científica coordenada pelo Processo de Kimberley;

19. *Encoraja* as autoridades marfinenses a trabalhar com o Sistema de Certificação de Processo Kimberley para conduzir revisão e avaliação do sistema de controle interno da Costa do Marfim do comércio de diamantes brutos bem como um estudo geológico abrangente dos recursos potenciais de diamantes e capacidade de produção da Costa do Marfim, com vistas a possível modificação ou levantamento, segundo caiba, das medidas impostas pelo parágrafo 6 da Resolução 1643 (2005);

20. *Encoraja* as autoridades marfinenses a lotar funcionários em postos de alfândega e controle de fronteira em todo o país, particularmente no norte e oeste, e encoraja a UNOCI, de acordo com seu mandato, a dar assistência às autoridades marfinenses no restabelecimento das atividades de alfândega e controle de fronteira;

21. *Insta* todos os Estados, órgãos relevantes das Nações Unidas e outras organizações e partes interessadas a cooperar integralmente com o Comitê, o Grupo de Peritos, a UNOCI e as forças francesas, em particular mediante a prestação de qualquer informação à sua disposição sobre possíveis violações das medidas impostas pelos parágrafos 7, 9 e 11 da Resolução 1572 (2004), parágrafo 6 da Resolução 1643 (2005) e parágrafo 12 da Resolução 1975 (2011) conforme reiterado no parágrafo 1 acima; solicita também ao Grupo de Peritos que coordene suas atividades, segundo caiba, com todos os atores políticos;

22. *Recorda* o parágrafo 7 da Resolução 1960 (2010) e o parágrafo 7 (b) da Resolução 1882 (2009), a respeito de violência sexual e baseada em gênero e contra crianças em conflito armado, e acolhe com satisfação o compartilhamento de informações entre o Comitê e os Representantes Especiais do Secretário-Geral para Crianças e Conflitos Armados e para Violência Sexual em Conflito, de acordo com seus respectivos mandatos e segundo caiba;

23. *Insta*, ainda neste contexto, que todas as partes marfinenses e todos os Estados, particularmente aqueles na região, garantam:

- a segurança dos membros do Grupo de Peritos; e

- livre acesso pelo Grupo de Peritos, em particular, a pessoas, documentos e locais, de modo a que o Grupo de Peritos possa executar seu mandato;

24. *Decide* continuar ocupando-se ativamente da questão.

DECRETO Nº 7.552, DE 12 DE AGOSTO DE 2011

Promulga o Acordo de Estabelecimento da Rede Internacional de Centros para Astrofísica Relativística - ICRANET e seu Estatuto, assinados em 21 de setembro de 2005.

A PRESIDENTA DA REPÚBLICA, no uso da atribuição que lhe confere o art. 84, inciso IV, da Constituição, e

Considerando que o Congresso Nacional aprovou, por meio do Decreto Legislativo nº 292, de 23 de outubro 2007, o texto do Acordo de Estabelecimento da Rede Internacional de Centros para Astrofísica Relativística - ICRANET e de seu Estatuto, assinados em 21 de setembro de 2005;

Considerando que o Acordo entrou em vigor, no plano jurídico externo, para a República Federativa do Brasil em 23 de abril de 2008;

D E C R E T A :

Art. 1º O Acordo de Estabelecimento da Rede Internacional de Centros para Astrofísica Relativística - ICRANET e seu Estatuto, assinados em 21 de setembro de 2005, apensos por cópia ao presente Decreto, serão executados e cumpridos tão inteiramente como neles se contém.

Art. 2º São sujeitos à aprovação do Congresso Nacional quaisquer atos que possam resultar em revisão do referido Acordo ou de seus anexos, assim como quaisquer ajustes complementares que, nos termos do inciso I do art. 49 da Constituição, acarretem encargos ou compromissos gravosos ao patrimônio nacional.

Art. 3º Este Decreto entra em vigor na data de sua publicação.

Brasília, 12 de agosto de 2011; 190º da Independência e 123º da República.

DILMA ROUSSEFF
Antonio de Aguiar Patriota

Acordo de Estabelecimento da Rede Internacional de Centros para Astrofísica Relativística - ICRANET em Pescara, Itália

Preâmbulo

Conscientes da importância da pesquisa em astrofísica relativística para o conhecimento da vida e da evolução das estrelas e da estrutura de nosso universo, como também para a identificação das leis fundamentais da natureza;

Conscientes de que as pesquisas nessa área são necessariamente fundadas na cooperação internacional;

Reconhecendo que o estudo de corpos celestes e astrofísicos tem raízes profundas em muitas culturas;

Considerando o grande interesse popular, em todas as nações, pela descoberta de corpos celestes como pulsares, quasares e buracos negros;

Ressaltando a importância de diversas técnicas e tecnologias usadas e associadas à astrofísica relativística, tais como tecnologias óptica, de rádio, espacial e de telecomunicações, para o desenvolvimento;

Tendo em conta que as partes deste Acordo pretendem instituir uma Rede Internacional de Centros para Astrofísica Relativística, doravante referida como ICRANET, como organização internacional independente, dotada de autonomia administrativa, personalidade jurídica internacional, poderes, privilégios, imunidades e outras prerrogativas necessárias à sua operação eficiente e à consecução de seus objetivos;

Considerando que o Governo Italiano se dispõe a negociar um acordo de sede para a ICRANET;

As partes signatárias acordam o seguinte:

Artigo I
Estabelecimento

O presente documento institui uma organização internacional independente denominada ICRANET, que operará em conformidade com o Estatuto em anexo, considerado parte integrante deste documento, e poderá, quando necessário, ser emendado de acordo com seu artigo 16.

Artigo II
Assinatura, Ratificação, Aceitação, Consentimento para Vincular-se, Adesão

Este acordo será aberto à assinatura de Estados e Organizações Internacionais aos cuidados do Governo da República Italiana. Ficará aberto à assinatura por um período de dois anos a partir de 2003, a menos que tal período seja prorrogado, antes de seu término, pelo depositário a pedido do Conselho Administrativo da ICRANET;

O Governo da República Italiana será a Depósito deste Acordo;

Os signatários devem expressar seu consentimento em serem vinculados em conformidade com suas próprias leis, normas e procedimentos;

O consentimento de um Estado ou organização internacional em vincular-se por esse acordo não implica qualquer obrigação de fornecer apoio financeiro à ICRANET além das contribuições voluntárias;

Expirado o período previsto no primeiro parágrafo, o presente Acordo ficará aberto à adesão de qualquer Estado e qualquer Organização Internacional, mediante aprovação pela maioria absoluta dos membros do Conselho Administrativo da ICRANET;

Artigo III
Partes Contratantes

Uma vez estabelecida a ICRANET, universidades e centros de pesquisas poderão associar-se a ela livremente.

Artigo IV
Entrada em Vigor

Este acordo e o estatuto anexo entrarão em vigor na data do depósito do instrumento de ratificação ou da aceitação formal por parte de três Estados ou organizações internacionais partes deste Acordo;

Para cada Estado ou organização internacional que venham a depositar seu documento de adesão ou aceitação formal depois da entrada em vigor deste Acordo, este Acordo entrará em vigor na data do depósito.

Artigo V
Duração

Qualquer parte deste Acordo poderá denunciá-lo por meio de declaração por escrito entregue ao depositário. A denúncia será efetiva decorridos três meses do recebimento do instrumento.

Artigo VI
Solução de Controvérsias

Qualquer controvérsia entre as Partes referente à interpretação ou à aplicação do presente acordo será resolvida pela via diplomática.

Artigo VII
Texto Autêntico

O texto autêntico do presente Acordo, incluindo o Estatuto a ele anexo, foi redigido nos idiomas Italiano e Inglês;

Cientes disso, os Plenipotenciários abaixo assinados, devidamente autorizados por seus respectivos governos e organizações internacionais, assinam este acordo em único original nas línguas italiana e inglesa, ambas igualmente fiéis.

Estatuto da ICRANET

Artigo 1
Status

Na condição de organização internacional, a ICRANET dedica-se exclusivamente a atividades educacionais e de pesquisa científica;

A ICRANET possui personalidade jurídica internacional e desfruta de todas as capacidades legais necessárias ao exercício de suas funções e a consecução de seus objetivos.

Artigo 2
Sede

A sede da ICRANET localiza-se em Pescara, na Itália, a menos que o Conselho Administrativo decida transferi-la para outro lugar. O Conselho Administrativo da ICRANET poderá abrir centros de pesquisa em outros países quando isso de faça necessário para a consecução de seus objetivos, definidos no artigo 3.

Artigo 3
Objetivos e Atividades

A ICRANET promove a cooperação científica internacional e realiza pesquisa no campo da astrofísica relativística. Coordena também a pesquisa internacional teórica, experimental e observação, fazendo uso de instrumentos no espaço, no solo e no subsolo terrestres.

Suas atividades consistem em:

a) desenvolvimento de pesquisa científica;

b) ensino em níveis de doutorado e pós-doutorado;

c) treinamento científico de curta e longa duração;

d) organização de oficinas e encontros científicos;

e) desenvolvimento de programas de intercâmbio de cientistas e técnicos;

f) desenvolvimento de novos padrões de comunicação eletrônica entre centros de pesquisa;

g) criação de bancos de dados integrados para todos os corpos celestes em todas as faixas de freqüência de rádio possíveis;

h) desenvolvimento de novos padrões de comunicação;

i) cooperação e participação em organizações científicas internacionais;

j) cooperação científica e transferência tecnológica para a indústria;

k) quaisquer outras atividades relacionadas como suas metas institucionais.

As áreas científicas de atividade incluem a cosmologia, a astrofísica de alta energia, a física teórica e a física matemática;

A ICRANET coordena atividades de pesquisa com as universidades e centros de pesquisa associados à rede nas diferentes áreas geográficas. Tal colaboração permitirá o desenvolvimento de projetos de ensino e pesquisa voltados para jovens cientistas. Cada Centro compartilhará suas instalações com os demais membros da rede. Tais instalações são, por vezes, de grande valor econômico e científico e são essenciais para o desenvolvimento dos projetos de pesquisa da ICRANET;

A ICRANET estimula a mobilidade dos cientistas entre os centros no entendimento de que cada centro deva cobrir os custos de viagem de seus pesquisadores enquanto os custos locais devam ser cobertos pela instituição que os receber;

A ICRANET concede bolsas de estudos para jovens estudantes no nível de graduação, pós-graduação e pós-doutorado no âmbito de programas especiais de ensino;

A ICRANET está a serviço das instituições científicas e dos Estados membros que desejem cooperar no campo da astrofísica relativística.

Artigo 4
Organização

A estrutura administrativa da ICRANET consiste em:

a) Conselho Administrativo;

b) Diretor; e

c) Conselho Científico;

Artigo 5
Conselho Administrativo

O Conselho Administrativo é composto pelos seguintes membros:

a) um representante de cada Estado e de cada Organização Internacional membro da ICRANET;

b) um representante adicional de cada Estado ou Organização Internacional que contribua financeiramente para atividades da ICRANET;

c) um representante de cada Universidade ou Centro de Pesquisa membro da ICRANET;

d) um representante de qualquer outra instituição que faça contribuição para as atividades da ICRANET e que seja aceita como membro por decisão do Conselho Administrativo;

e) um representante do Ministério da Economia e das Finanças do Governo da Itália e um representante da Prefeitura de Pescara, mediante a contribuição nacional e a contribuição prevista no acordo de sede. No que se refere às adesões sucessivas ao acordo, está prevista a participação de um membro adicional para cada Estado ou organização internacional que contribua para o orçamento anual da ICRANET;

f) um representante da Universidade de Stanford, um representante da Universidade do Arizona, um representante da **Specola Vaticana** e um representante da ICRANET como membros fundadores;

O Conselho Administrativo elege seu Presidente entre seus membros por um período renovável de 3 anos;

O Diretor é o Secretário-Executivo do Conselho Administrativo;

O Conselho Administrativo se reúne em sessão ordinária uma vez ao ano; se reunirá em sessão extraordinária convocada pelo Presidente por sua própria iniciativa ou por solicitação de ao menos metade de seus membros;

A maioria dos membros constitui quorum para as reuniões do Conselho Administrativo;

O Conselho Administrativo adotará seu próprio regulamento.

Artigo 6
Função do Conselho Administrativo

As funções do Conselho Administrativo são:

a) eleger o Diretor da ICRANET;

b) formular, ouvido o Conselho Científico, as diretrizes gerais das atividades da ICRANET, considerando os objetivos especificados no Artigo 3;

c) examinar:

(a) o orçamento anual;

(b) as respectivas contribuições;

(c) os planos financeiros;

(d) o uso dos fundos disponíveis para as operações da ICRANET;

d) considerar as propostas do Diretor para os programas, planos de trabalho, planos financeiros, orçamento e organização de pessoal da ICRANET e deliberar a seu respeito;

e) adotar, mediante aprovação dos contribuintes pertinentes, aumento no orçamento, com base nas exigências das atividades científicas da ICRANET;

f) analisar o relatório anual e outros relatórios do Diretor relativos às atividades da ICRANET;

g) nomear um auditor financeiro externo e aprovar seus relatórios anuais; e

h) adotar o regulamento aplicável aos funcionários como estabelecido por outras organizações internacionais no âmbito do sistema das Nações Unidas.

Artigo 7
Votações do Conselho Administrativo

As votações do Conselho Administrativo são reguladas da seguinte maneira:

a) cada membro do Conselho Administrativo tem um voto;

b) as decisões do Conselho Administrativo são adotadas pela maioria dos membros presentes e votantes, exceto quando especificado de outra forma pelo artigo 8 deste Estatuto.

Artigo 8
Nomeação do Diretor

A nomeação do Diretor, por um período não superior a cinco anos, renovável, será decidida por maioria de dois terços dos membros do Conselho Administrativo. Na ausência desse quorum, depois de duas convocações sucessivas, a nomeação será decidida pela maioria dos membros presentes. Durante o período inicial de cinco anos, o Presidente da ICRANET será nomeado Diretor.

Artigo 9
Funções e Poderes do Diretor

O Diretor é chefe acadêmico e administrativo da ICRANET. Nessa condição, o Diretor:

a) administra a ICRANET;

b) prepara as propostas de atividades gerais e os planos de trabalho da ICRANET para serem submetidos à aprovação do Conselho Administrativo;

c) prepara os planos financeiros e as propostas orçamentárias da ICRANET para serem submetidos à aprovação do Conselho Administrativo;

d) supervisiona a execução dos programas de trabalho da ICRANET e efetua pagamentos conforme as diretrizes gerais e decisões específicas adotadas pelo Conselho Administrativo;

e) é o representante legal da ICRANET. Assina todos os atos, contratos, acordos, tratados e outros documentos legais necessários para garantir a operação normal da ICRANET. O Conselho Administrativo pode determinar os limites para a delegação desses poderes por parte do Diretor. Os contratos, acordos e tratados que disponham sobre gestão, objetivos, localização da sede, expansão ou dissolução da ICRANET, questões de relevância que envolvam o relacionamento com o país sede serão submetidas à aprovação pelo Conselho Administrativo;

O Diretor assume todas as funções e poderes estabelecidos pelo presente acordo, em particular:

a) seleciona e administra o pessoal necessário ao desenvolvimento das atividades da ICRANET;

b) conduz a auditoria anual das operações financeiras realizada por empresa de contabilidade externa (ver artigo 6[f]).

Artigo 10
O Conselho Científico

O Conselho Científico é composto por um representante de cada Estado, organização internacional, universidade ou centro de pesquisa membro da ICRANET;

O Conselho Cientifico elege, por maioria simples, seu Presidente entre seus membros por um período renovável de três anos.

Artigo 11
Funções do Conselho Científico

O Conselho Científico aconselha a ICRANET em seus programas de trabalho, dedicando a devida atenção às principais tendências acadêmicas, científicas, educacionais e cursos culturais no mundo que tenham relação com seus objetivos;

O Conselho Científico deve assegurar a coordenação das atividades científicas da ICRANET e fazer recomendações ao Diretor considerando as perspectivas de crescimento da ICRANET e indicando linhas específicas de pesquisa;

O Conselho Administrativo e o Diretor podem solicitar pareceres ao Conselho Científico;

O Conselho Científico adota o próprio regulamento e se reúne ordinariamente uma vez ao ano.

Artigo 12
Secretariado

O Secretariado da ICRANET será composto pelo corpo de funcionários necessários ao seu bom funcionamento;

Os membros do Secretariado serão recrutados pelo Diretor conforme disposto no artigo 9 (b, a);

O critério principal a ser considerado para a admissão de funcionários e na determinação das condições de trabalho deve ser o de atender ao mais altos padrões de qualidade e eficiência;

Parâmetros salariais, seguros, planos de previdência e demais condições de trabalho serão estabelecidos pelo regulamento do corpo de funcionários.

Artigo 13
Finanças

A ICRANET obtém recursos financeiros por meios tais como contribuições voluntárias e doações, taxas de inscrição em cursos e seminários, remuneração por programas de treinamento e prestação de assistência técnica, receita de publicações e outros serviços e juros provenientes de investimentos, aplicações e contas bancárias;

As partes desse Acordo não serão solicitadas a prover apoio financeiro à instituição além de suas contribuições voluntárias;

As operações financeiras da ICRANET são reguladas pelas normas adotadas pelo Conselho Administrativo, de acordo com os princípios estabelecidos pelas Nações Unidas;

O orçamento da ICRANET é aprovado anualmente pelo Conselho Administrativo;

O Governo Italiano contribui para o orçamento da ICRANET da seguinte forma: a partir da entrada em vigor desse Acordo, a contribuição financeira anual será de 1.549.370 Euros, e poderá ser aumentada para atender às necessidades da ICRANET tal como definido pelo Conselho Administrativo, de acordo com o Artigo 6;

Qualquer contribuição que a ICRANET venha a receber dos Estados, das organizações internacionais ou organizações não governamentais, de universidades e centros de pesquisas e em pagamento de serviços será incorporada ao orçamento;

O orçamento compreende despesas com funcionários, atividades operacionais e custeio de programas;

O Município de Pescara coloca à disposição das atividades da ICRANET uma sede em Pescara.

Artigo 14
Relações com Outras Organizações

Com o propósito de atingir seus objetivos da forma mais eficiente, a ICRANET pode estabelecer acordos de cooperação com organizações, fundações e agências nacionais, internacionais e regionais;

Os centros de pesquisa que pretendam participar das atividades da ICRANET previstas por esse acordo deverão enviar ao Diretor notificação nesse sentido.

Artigo 15
Direitos, Privilégios e Imunidades

Será lavrado Acordo de Sede entre o Governo da República Italiana e a ICRANET com o propósito de estabelecer os direitos, privilégios e imunidades de seus funcionários e visitantes oficiais tão logo tal organização internacional seja estabelecida.

Artigo 16
Emendas

Este Estatuto poderá ser emendado pelo Conselho Administrativo por unanimidade dos votos dos Estados e organizações internacionais partes deste Acordo. Emendas entrarão em vigor seis meses após sua aprovação.

Artigo 17
Dissolução

A ICRANET pode ser dissolvida por maioria de três quartos dos membros do Conselho Administrativo caso se conclua, a qualquer momento, que os propósitos da ICRANET não estejam sendo atingidos;

Em caso de dissolução, os bens da ICRANET situados no país-sede ou em outros países serão transferidos a tais países para serem usados em objetivos semelhantes ou cedidos a instituições que tenham finalidades análogas àquelas da ICRANET nos respectivos países, mediante acordos entre os governos desses países e o Comitê Administrativo da ICRANET.

Artigo 18
Cláusula Final

As partes do presente acordo não incorrerão em nenhum custo em caso de dissolução da ICRANET.

DECRETO Nº 7.553, DE 12 DE AGOSTO DE 2011

Dá nova redação ao art. 3º do Decreto nº 3.500, de 9 de junho de 2000, que dispõe sobre a Comissão Nacional de Classificação - CONCLA.

A PRESIDENTA DA REPÚBLICA, no uso das atribuições que lhe confere o art. 84, inciso VI, alínea "a", da Constituição,

D E C R E T A :

Art. 1º O art. 3º do Decreto nº 3.500, de 9 de junho de 2000, passa a vigorar com a seguinte redação:

"Art. 3º .....

I - Ministério do Planejamento, Orçamento e Gestão;

II - Ministério das Relações Exteriores;

III - Ministério da Fazenda;

IV - Ministério da Agricultura, Pecuária e Abastecimento;

V - Ministério do Desenvolvimento Agrário;

VI - Ministério da Educação;

VII - Ministério do Esporte;

VIII - Ministério do Turismo;

IX - Ministério da Saúde;

X - Ministério do Trabalho e Emprego;

XI - Ministério da Previdência Social;

XII - Ministério dos Transportes;

XIII - Ministério de Minas e Energia;

XIV - Ministério do Meio Ambiente;

XV - Ministério do Desenvolvimento, Indústria e Comércio Exterior;

XVI - Ministério da Ciência, Tecnologia e Inovação;

XVII - Ministério do Desenvolvimento Social e Combate à Fome; e

XVIII - Fundação Instituto Brasileiro de Geografia e Estatística - IBGE.

....." (NR)

Art. 2º Este Decreto entra em vigor na data de sua publicação.

Art. 3º Fica revogado o Decreto nº 5.194, de 24 de agosto de 2004.

Brasília, 12 de agosto de 2011; 190º da Independência e 123º da República.

DILMA ROUSSEFF
Miriam Belchior

DECRETO DE 12 DE AGOSTO DE 2011

Abre aos Orçamentos Fiscal e da Seguridade Social da União, em favor dos Ministérios da Agricultura, Pecuária e Abastecimento, da Saúde, da Integração Nacional e das Cidades, crédito suplementar no valor global de R$ 32.161.706,00, para reforço de dotações constantes da Lei Orçamentária vigente.

A PRESIDENTA DA REPÚBLICA, no uso da atribuição que lhe confere o art. 84, inciso IV, da Constituição, e tendo em vista a autorização contida no art. 4º, inciso III, alínea "c", da Lei nº 12.381, de 9 de fevereiro de 2011,

D E C R E T A :

Art. 1º Fica aberto aos Orçamentos Fiscal e da Seguridade Social da União (Lei nº 12.381, de 9 de fevereiro de 2011), em favor dos Ministérios da Agricultura, Pecuária e Abastecimento, da Saúde, da Integração Nacional e das Cidades, crédito suplementar no valor global de R$ 32.161.706,00 (trinta e dois milhões, cento e sessenta e um mil, setecentos e seis reais), para atender à programação constante do Anexo I a este Decreto.

Art. 2º Os recursos necessários à abertura do crédito de que trata o art. 1º decorrem de anulação parcial de dotação orçamentária, conforme indicado no Anexo II a este Decreto.

Art. 3º Este Decreto entra em vigor na data de sua publicação.

Brasília, 12 de agosto de 2011; 190º da Independência e 123º da República.

DILMA ROUSSEFF
Miriam Belchior

Ministero degli Affari Esteri

124280

NOTA VERBALE

Il Ministero degli Affari Esteri della Repubblica Italiana presenta i suoi complimenti al Network internazionale di Centri per l'Astrofisica Relativistica "ICRANET" in Pescara e, nel riferirsi all'Accordo istitutivo del Network Internazionale di Centri per l'Astrofisica Relativistica "ICRANET" in Pescara - Italia, con Statuto allegato, firmato a Roma il 19 marzo 2003, ha l'onore, in qualità di depositario, di confermare che la Repubblica Federativa del Brasile ha depositato, in data 23 aprile 2008, lo strumento di adesione dell'Accordo citato.

Il Ministero degli Affari Esteri si avvale dell'occasione per rinnovare al Network internazionale di Centri per l'Astrofisica Relativistica ICRANET in Pescara gli atti della sua più alta considerazione.

MINISTERO DEGLI AFFARI ESTERI

Roma, 29/04/2011

ICRANET
Network internazionale di Centri
per l'Astrofisica Relativistica in
Pescara

Ministero degli Affari Esteri

124280

NOTA VERBALE

Il Ministero degli Affari Esteri della Repubblica Italiana presenta i suoi complimenti all'Ambasciata della Repubblica Federativa del Brasile e, nel riferirsi all'Accordo istitutivo del Network Internazionale di Centri per l'Astrofisica Relativistica "ICRANET" in Pescara - Italia, con Statuto allegato, firmato a Roma il 19 marzo 2003, ha l'onore, in qualità di depositario, di confermare che la Repubblica Federativa del Brasile ha depositato, in data 23 aprile 2008, lo strumento di adesione dell'Accordo citato.

Si allega altresì, come richiesto, la copia certificata conforme relativa al predetto Accordo.

Il Ministero degli Affari Esteri si avvale dell'occasione per rinnovare all'Ambasciata della Repubblica Federativa del Brasile gli atti della sua più alta considerazione.

Roma, 29 APR. 2011

All'Ambasciata della Repubblica
Federativa del Brasile
Piazza Navona, 14
00186 Roma

The ICRANet Seat Agreement with Brazil

On September 12, 2013 the Seat Agreement with Brazil was signed between the Director of ICRANet and the President of Brazil with the proxy to the Brazilian Ambassador in Rome, Ricardo Neiva Tavares, (see: http://www.icranet.org/SeatAgreementBrazil), with the attribution to ICRANet of a Seat in Rio de Janeiro at CBPF. This Seat Agreement needs now the final ratification of the Brazilian Parliament.

From left to right: Professor Remo Ruffini (ICRANet Director), and H.E. Ambassador Ricardo Neiva Tavares during the ceremony of the signature of the Seat agreement in Brazil, held in Rome on September 12, 2013.

Enclosure 4:
- Full powers to the Ambassador Ricardo Neiva Tavares from the President of Brazil H.E. Dilma Rousseff (Portuguese)
- Seat Agreement in Brazil (English and Portuguese)

DILMA ROUSSEFF
PRESIDENTA DA REPÚBLICA FEDERATIVA DO BRASIL

Faço saber, aos que esta Carta de Plenos Poderes virem, que nomeio o Embaixador Ricardo Neiva Tavares meu plenipotenciário para assinar, em nome do Governo brasileiro, o Acordo entre o Governo da República Federativa do Brasil e a Rede Internacional de Centros de Astrofísica Relativística (ICRANET) para a Instalação da Sede Permanente da ICRANET no Brasil.

Em fé do que, mandei passar esta Carta de Plenos Poderes, que vai por mim assinada e contém o selo das Armas da República, referendada pelo Ministro, interino, das Relações Exteriores.

Dada no Palácio do Planalto, em Brasília, em 26 de JULHO de 2013, 192º da Independência e 125º da República.

Dilma Rousseff

Eduardo dos Santos

AGREEMENT BETWEEN THE INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK (ICRANET) AND THE GOVERNMENT OF THE FEDERATIVE REPUBLIC OF BRAZIL ON THE ESTABLISHMENT OF A ICRANET HEADQUARTERS IN BRAZIL

The International Center for Relativistic Astrophysics Network (ICRANet),

and

The Government of the Federative Republic of Brazil (hereinafter referred to as "Government")
(both hereinafter referred to as "Parties")

Desiring to strengthen cooperation between ICRANet and Brazil in the promotion, in Brazil, of training, education and research in the field of Relativistic Astrophysics; and

Recognizing that a dedicated ICRANet headquarters in Brazil shall also bring about ICRANet's commitment to enhance knowledge in the domain of Cosmology, Theoretical Physics and Mathematical Physics among Brazilian research and development (R&D) institutions,

Hereby agree as follows:

Article I

The Parties establish the following definitions for the purposes of the interpretation of this Agreement:

a) "Government", means the Government of the Federative Republic of Brazil;

b) "ICRANet" means the International Center for Relativistic Astrophysics Network;

c) "competent authorities", the authorities of the Federative Republic of Brazil, in accordance with its laws;

d) "headquarters", the premises and annexes, whatever their owner, occupied by ICRANet;

e) "property", the real estate, furniture, vehicles, rights, assets in any currency, credits, income, other assets and everything that may constitute the patrimony of ICRANet;

f) "files", the correspondence, manuscripts, audio-visual material of any kind, as well as all other documents belonging to ICRANet or in its possession;

g) "Head of Mission", the head of the permanent regional headquarters of ICRANet in Brazil;

h) "staff", ICRANet's headquarters officers or hired employees who are not Brazilian nationals or do not have permanent residence in the Federative Republic of Brazil;

i) "dependents", every family member who depends economically or is under the legal responsibility of the persons mentioned in subparagraphs g) and h) of this Article, and

j) "local personnel", the employees hired by ICRANet in the territory of Brazil for the performance of administrative duties or services.

Article II

1. ICRANet shall establish a headquarters in Brazil.

2. The ICRANet's headquarters in Brazil shall be responsible for developing, coordinating and actively supporting the overall cooperation among ICRANet and the Government, the academic community, and the civil society to promote development of frontier sciences in the field of Relativistic Astrophysics. Cooperation shall include the development of country studies and research programmes with the participation of Brazilian scientific and technological institutions, the provision by ICRANet of high quality services and the mobilization of resources for the financing of projects.

3. The ICRANet headquarters in Brazil shall have a Head of Mission which, in the performance of his/her duties, shall:

a) Act as accredited representative of ICRANet in Brazil as well as ICRANet representative for important international or regional organizations located in the country;

b) Promote ICRANet's services in Brazil;

c) Develop a strategic framework of cooperation, an annual work programme, active partnerships between ICRANet and Brazil and fruitful relationships and communication with the Government, academic community, civil society, non-governmental organizations, all other multilateral and bilateral organizations;

d) Lead and coordinate the overall programmes and projects development and mobilize related financial resources in Brazil;

e) Support and monitor the implementation of ICRANet projects and programmes, and contribute to the management of all other ICRANet activities in Brazil;

f) Manage the ICRANet's headquarters in Brazil and its resources, and ensure its sustainability;

Article III

This Agreement does not imply any financial obligation to the Brazilian Government regarding the costs deriving from the establishment and functioning of the ICRANet Headquarters in Brazil. Any financial commitment in this regard shall be subject to future Agreements between the Parties.

Article IV

ICRANet possesses legal personality and in order to achieve its purposes is entitled to:

a) hire and contract;

b) acquire goods and real estate, maintain financial resources and freely dispose of said resources;

c) initiate legal or administrative procedures in its own interest;

d) possess funds in foreign currency of any kind and keep their accounting in any denomination, in conformity to the Brazilian legislation, and

e) transfer its funds in foreign currency within the country or abroad, in conformity to the Brazilian legislation.

Article V

The headquarters shall remain under the authority and responsibility of ICRANet. Nevertheless, Brazilian sanitary and other pertinent legal requirements, specially labor related ones, shall apply.

Article VI

The Government shall not be responsible for acts or nonfeasance by ICRANet or by any of the staff members.

Article VII

The headquarters and its files shall be inviolable. Competent local authorities may only enter the headquarters in the performance of their duties with the consent of the Head of Mission. In case of fire or any other accident involving a hazard to public safety, the consent of the Head of Mission shall be tacit. The Government shall take appropriate measures to protect the headquarters against any trespasser or harm.

Article VIII

The headquarters shall not be used for any end not compatible with the purposes and functions of ICRANet. ICRANet shall not allow the headquarters to serve as a haven for fugitives or convicted persons under Brazilian law, or for persons whose extradition may have been requested by another country, or who try to elude judicial proceedings.

Article IX

ICRANet and its properties shall enjoy immunity of jurisdiction and of execution in the territory of the Federative Republic of Brazil, except:

a) in the case of express renunciation, through its Head of Mission;

b) in the case of a labor or social security related suit initiated by an employee or a former employee of the Mission;

c) in the case of a civil suit initiated by a third party for damages, injury or death resulting from accident caused by a vehicle or aircraft belonging to or used on behalf of ICRANet;

d) in the case of a traffic violation involving a vehicle belonging to ICRANet or used on its behalf, and

e) in the case of a countersuit directly related to a court suit initiated by ICRANet.

Article X

In hiring local employees, ICRANet shall be subject to the laws on labor relations and social security of the Federative Republic of Brazil.

Article XI

Properties belonging to ICRANet in the territory of the Federative Republic of Brazil for the purpose of installing and maintaining the headquarters of the Mission, regardless of their location or of whoever holds them, shall be exempt from:

a) any form of requisition, confiscation or sequestration;

b) expropriation, except in the case of public use defined by law and with prior compensation, and

c) any form of restriction or administrative, judicial or legislative interference, except when temporarily necessary for the prevention or investigation of accidents.

Article XII

ICRANet must contract, in the Federative Republic of Brazil, insurance to cover civil liability for damages caused to third parties.

Article XIII

1. ICRANet, the Head of Mission and its staff shall be exempt from state and municipal taxes on the premises and its annexes, of which they are the owners, except when such taxes cover compensation for public services.

2. The above mentioned fiscal exemption shall not apply to taxes and other dues which, according to Brazilian law, fall under the responsibility of persons hired by ICRANet or by its Head of Mission.

3. Fiscal exemptions, privileges and immunities conferred to ICRANet by means of the present Agreement shall not be extended to Brazilian citizens or permanent residents in Brazil.

Article XIV

ICRANet shall be exempt of any kind of customs duties, taxes and other dues regarding the import and export of articles, publications or goods designed for the official use of ICRANet which shall be not traded in the Federative Republic of Brazil without the authorization of the Government.

Article XV

The Head of Mission and staff members, in addition to the provision of article XIII, paragraph 3 above, shall be exempt from the payment of federal taxes, except:

a) indirect taxes, normally included in the price of goods and services;

b) taxes and other dues on private real estate located in the Federative Republic of Brazil, unless owned by ICRANET and used as official premises.

c) taxes and other dues on private income, including capital gains originating in the Federative Republic of Brazil, and taxes on income relating to investments in commercial or financial companies in the Federative Republic of Brazil;

d) taxes and other dues relating to compensation for public services;

e) taxes on successions or transmissions demandable by the Federative Republic of Brazil, and

f) dues for registration, court costs, mortgage and stamp, except as provided for in Article XIV.

Article XVI

1. The staff members who are not Brazilian citizens or who do not have permanent residence in the Federative Republic of Brazil, and who need to remain in the country in the exercise of their duties for a period of not less than one (1) year and have been accredited by the Government pursuant to Article XXIX, may import, within six (6) months of their arrival, or export free of custom duties, taxes and other dues, their belongings and personal effects, which cannot be traded in the country without authorization from the Government.

2. The Head of Mission and the staff members shall not be exempt from dues relating to storage, transport and other charges for related port services.

Article XVII

Staff members, except Brazilian citizens and persons having permanent residence in Brazil, shall enjoy exemption for the import of articles of personal consumption according to the regulations in force in the Federative Republic of Brazil. Such exemption shall be granted pursuant to the rules established by the competent authorities.

Article XVIII

Staff members who are not Brazilian citizens or who do not have permanent residence in the country shall enjoy the same facilities and exemptions in monetary or foreign currency exchange matters granted to headquarters of similar functions in other international organizations who are on mission in the Federative Republic of Brazil.

Article XIX

1. The Head of Mission and staff members shall enjoy immunity of jurisdiction relating to acts, including in speech and writing, performed by themselves in the exercise of their official functions and within the limits of their duties, even after the conclusion of the period of their mission, except:

a) in the case of a civil suit initiated by third parties for damages originating in an accident caused by a vehicle or aircraft belonging to them or driven by them, or relating to a traffic violation involving such a vehicle and committed by them;

b) in the case of a suit relating to private real estate located in the Federative Republic of Brazil, unless such real estate is under the possession of ICRANet and serves to fulfill its purposes;

c) in the case of a succession suit in which the Head of Mission or a staff member appears as a private individual and not on behalf of ICRANet as the executor, administrator, heir or legatee of a testament; and

d) in the case of an action relative to any commercial or professional activity exercised before taking headquarters.

2. The Head of Mission and staff members cannot be the object of any executory measure, except in the cases mentioned in subparagraphs a), b), c) and d) of this Article, and except for Brazilian nationals and permanent residents in the country.

Article XX

1. Staff members shall enjoy the following privileges, exemptions and facilities:

a) inviolability of official documents and papers related to the exercise of their functions;

b) exemption from restrictions to immigration and from procedures of registration of foreigners;

c) facilities for repatriation usually accorded to the personnel of international organizations in cases of international crisis;

d) exemption from income tax or any other direct taxes on salaries or retributions paid by the organization, and

e) exemption from any personal service and military service obligations or public service of any kind.

2. The privileges, exemptions and facilities agreed on subparagraphs b), c), d) and e) shall not be granted to Brazilians or permanent residents in the Federative Republic of Brazil.

3. The exercise of paid activity by dependants of the Head of Mission and staff members in Brazilian territory shall not be permitted, except in the case of Brazilian nationals or if authorized by a specific Agreement on the matter.

Article XXI

It is understood that the Head of Mission, the staff members and dependents enjoy the privileges, immunities and facilities set forth in the Vienna Convention on Diplomatic Relations; this does not apply to the situations covered by article XIII, paragraph 3 above.

Article XXII

ICRANet shall take adequate measures to resolve:

a) litigations deriving from contracts or other private law questions of which it is a party, and

b) litigations to which the Head of Mission or a staff member who enjoys immunity by virtue of his (her) functions is a party.

Article XXIII

1. ICRANet shall cooperate with the competent authorities in order to facilitate the administration of justice and oversee the enforcement of the law.

2. No clause of this Agreement shall be interpreted as preventing the adoption of appropriate security measures in the interest of the Government.

Article XXIV

1. Privileges and immunities recognized in this Agreement are not granted to the Head of Mission or staff members for their own benefit, but in order to safeguard the independent exercise of their functions.

2. ICRANet has the right and the duty to renounce the immunity granted to it if it hinders the course of justice. In the case ICRANet does not renounce immunity, it must do its utmost to arrive at a fair solution of a litigation to which it is a party.

Article XXV

If the Government considers that an abuse of a privilege or immunity granted by virtue of this Agreement has occurred, it shall consult with ICRANet in order to determine whether such an abuse has taken place and, in that case, to prevent its recurrence.

Article XXVI

The number of staff members shall not exceed the limits suitable for the proper performance of the functions of the regional headquarters of ICRANet in the Federative Republic of Brazil.

Article XXVII

ICRANet shall have the right to use codes and to dispatch and receive its correspondence by mail as well as by sealed pouch, which shall enjoy the same immunity and privileges granted to the diplomatic and consular representations headquartered in the territory of the Federative Republic of Brazil, in accordance with the Vienna Convention on Diplomatic Relations.

Article XXVIII

ICRANet shall give written notice to the Government with the necessary advance of:

a) the appointment of the Head of Mission and staff members, as well as the engagement of local personnel, pointing out those who are Brazilian citizens or permanent residents in the Federative Republic of Brazil. Additionally, it shall give notice of the cessation of the functions of the aforementioned persons in ICRANet; and

b) the arrival and final departure of the Head of Mission and staff members, as well as that of the members of their respective families.

Article XXIX

The Government shall issue to the Head of Mission and staff members, once notice of their appointment has been received, a document of accreditation which shall specify the person's position and the nature of his (her) functions.

Article XXX

1. Each contracting Party shall notify the other of their compliance with the respective internal procedures for the entry into force of this Agreement, which shall take effect 30 (thirty) days after the date on which the second notification is received.

2. This Agreement shall be of indefinite duration. Any of its Parties may notify the other of its desire to denounce this Agreement. Termination shall be effective six (6) months after the date of the receipt of the notification to the other Party.

Article XXXI

The Parties may, by mutual consent, introduce modifications and amendments to this Agreement and shall be subject to the procedure set forth in paragraph 1 of Article XXX.

Done in Rome, on the 12 day of September, 2013, in duplicate, in the Portuguese and English languages, the texts being equally authentic.

FOR THE INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK

FOR THE GOVERNMENT OF THE FEDERATIVE REPUBLIC OF BRAZIL

Nomination of the representative of Brazil in the ICRANet Steering Committee

Nº 1

A Embaixada da República Federativa do Brasil cumprimenta a Rede Internacional de Centros de Astrofísica Relativística (ICRANet) e, com referência à Nota ICRANet 2134, de 3 de junho passado, tem a honra de informar que o Ministério das Relações Exteriores do Brasil designou como seu representante no Conselho Administrativo da ICRANet o Chefe da Divisão de Ciência e Tecnologia, Conselheiro Ademar Seabra. Como seu suplente, foi indicado o Secretário Luiz Felipe Czarnobai, desta Embaixada.

A Embaixada da República Federativa do Brasil aproveita a oportunidade para renovar à Rede Internacional de Centros de Astrofísica Relativística (ICRANet) os protestos de sua mais alta consideração.

Roma, em 14 de agosto de 2014.

UNOFFICIAL TRANSLATION

N° 1

The Embassy of the Federative Republic of Brazil in Rome presents its compliments to the International Center for Relativistic Astrophysics Network (ICRANet) and, with reference to the Note ICRANet 2134 of June 3rd, 2014, has the honor to communicate that the Ministry of External Relations of Brazil appointed as its representative in the ICRANet Steering Committee the Head of the Science and Technology Division, Counselor Ademar Seabra. As deputy representative, the Ministry designated Secretary Luiz Felipe Czarnobai, from this Embassy.

The Embassy of the Federative Republic of Brazil takes this opportunity to renew to the International Center for Relativistic Astrophysics Network (ICRANet) the assurances of its highest consideration.

Rome, on August 14th, 2014.

From left to right: Cons. Ademar Seabra da Cruz Jr, Professor Haik A. Harutyunian, H. E. Sargis Ghazaryan, C. W. Francis Everitt and Professor Remo Ruffini (ICRANet Director) during the ceremony of the signature of the Seat agreement in Armenia, held in Rome on Febrary 13, 2015

From left to right: Cons. Ademar Seabra da Cruz Jr, Professor Haik A. Harutyunian. Professor Remo Ruffini (ICRANet Director) ad Carlos Arguelles at ICRANet headquarters in Pescara

ICRANET 15th Steering Committee Extraordinary Meeting Rome, December 1st, 2016

fourth item on the Agenda: "Financial contributions from Brazil".

The Chairperson invites the Director to introduce the fourth item on the Agenda: "Financial contributions from Brazil".

The Director recalls:

a) the entrance of Brazil in ICRANet (see: https://en.wikipedia.org/wiki/ICRANet), established by Law 7.552 of 12th August 2011, with a yearly voluntary contribution, included as a specific item in the Brazilian Federal budget (see: http://www.icranet.org/documents/ICRANet-AdesioneBrazil.pdf);

b) the Seat Agreement with Brazil signed between the Director of ICRANet and the President of Brazil with the proxy to the Brazilian Ambassador in Rome, Ricardo Neiva Tavares, on September 12, 2013 (see: http://www.icranet.org/SeatAgreementBrazil), the attribution to ICRANet of a Seat in Rio de Janeiro at CBPF and the recent renewal of the Agreement between ICRANet and CBPF (see http://www.icranet.org/documents/AccordoCBPF2016.pdf). This Seat Agreement needs now the final ratification of the Brazilian Parliament;

c) the increase of research and teaching activities following the signature of 17 Agreements of collaboration between ICRANet and Brazilian Institutions, Universities and Research Centers (http://www.icranet.org/icranetBrazilActivities), including the newly signed agreements with the State University of Campinas (UNICAMP), Campinas, SP, and with the Santa Catarina State University, Florianópolis, SC, well manifested in more than 100 scientific publications in international journals (see: http://www.icranet.org/documents/ICRANet_activities_Brazil.pdf).

The Director recalls as well:

1) the financial contributions of Brazil for the years 2015-2016, both mentioned in the Federal budget, have not yet be honored. In particular the contribution of 2015 was also guaranteed by the Minister of Science, Technology and Innovation of that time, in the Ofício n. 442/MCTI (see: http://www.icranet.org/documents/letter_rebelo_mcti.pdf). This delay has presented serious difficulties for the planned ICRANet activities; some of them have been postponed to 2017. Alternative contributions have been anticipated using other voluntary funds which have to be now urgently replaced;

2) the delay of MCTIC in appointing one additional representative from Brazil in the ICRANet Steering Committee (according to art. 5 b of ICRANet Statute) and one representative from Brazil in the ICRANet Scientific Committee (according to art. 10 of ICRANet Statute). There is also the need to nominate a substitute of Dr. Ademar Seabra da Cruz Júnior, as representative of Brazil in the ICRANet Steering Committee with voting power (see: http://www.icranet.org/documents/nomina_Ademar.pdf), if the recent promotion of Dr. Ademar makes his new activity incompatible with that duty;

3) the Director of CBPF and other 21 distinguished Brazilian scientists, as signatories, have asked to the Minister of Science, Technology, Innovation and Communication, Gilberto Kassab, the regularization of the agreements between ICRANet and Brazil, as indicated in the enclosed letter of August 31, 2016 (see: http://www.icranet.org/documents/letter_to_MCTIC_PT_EN.pdf).

The Director also recalls the success of the ICRANet activities in Brazil:

A) The academic and teaching program of the IRAP PhD
The strong commitment of teaching at the graduate level, promoted by ICRANet in establishing the IRAP PhD in connection with some of the leading Astrophysical and Physical Institutions in Europe and worldwide (see: https://en.wikipedia.org/wiki/IRAP_PhD_Program). In particular: 7 students have obtained their IRAP Ph. D. degree, jointly awarded by the Rectors or Presidents of

the six European Universities and already received positions of professorships and post-doctoral fellowships at international level; 5 Brazilian professors and 6 Brazilian postdoctoral researchers have been doing research in ICRANet in Europe; 5 ICRANet postdoctoral researchers have been doing research in Brazil; 5 ICRANet visiting professors have been teaching in Brazil. A total of 8 fellowships from ICRANet have been awarded to Brazilian students (see: http://www.icranet.org/documents/fellowshipsBR.pdf).
Results of these activities can be seen in the over 100 scientific publications: http://www.icranet.org/documents/ICRANet_activities_Brazil.pdf (73 pages);

B) ICRANet outreach activities
In parallel to the above activities, special attention has been traditionally given by ICRANet to the outreach programs. The best example in 2015 has been the MGXIV meeting, with 64 Brazilian participants, as well as its satellite meetings (among them: the Second ICRANet César Lattes Meeting, see: http://www.icranet.org/2cl; proceedings have appeared in the AIP volume: http://www.icranet.org/documents/2CL.pdf; the First Colombia-ICRANet Julio Garavito Armero Meeting in Colombia, see: http://www.icranet.org/1jg; the First Sandoval Vallarta Caribbean Meeting in Mexico City, see: http://www.icranet.org/1sv and the public lectures in João Pessoa, see: http://www.icranet.org/videoJoaoPessoa);

C) The Brazilian Science Data Center (BSDC)
the development of scientific research in the fields of relativistic astrophysics, cosmology and space research has an essential hub in the development of the BSDC also in Brazil. The BSDC, a novel astrophysics facility which has been built following the concept of ASI Science Data Center (ASDC) by the Italian Space Agency, consists of a unique infrastructure as interface connecting experimental and theoretical astrophysicists. The BSDC, made possible by an agreement between ASI and ICRANet, is currently implemented in the ICRANet Headquarters in Pescara and in Brazil, at Centro Brasileiro de Pesquisas Físicas (CBPF) and at the Universidade Federal do Rio Grande do Sul (UFRGS), and it will be later expanded to all other Centers in Brazil collaborating with ICRANet.

The Director invites all representatives of the Steering Committee to express to Brazilian authorities, formally or informally, the great relevance and success of the previous ICRANet activities in Brazil, the fulfillment of the economical commitments as well as the continuation and fostering of these activities. The Steering Committee express its gratitude to the Director for all these activities which have reached so many tangible results in all the 17 centers with which ICRANet has signed agreements.

Petition
to MCTIC Minister, Gilberto Kassab
signed by 22 distinguished scientists from Brazil

Centro Brasileiro de Pesquisas Físicas
Rua Doutor Xavier Sigaud, 150, Rio de Janeiro, Brasil
Tel.: +55 21 2141-7100 Fax.: +55 21 2141-7400 - CEP.:22290-180
http://www.cbpf.br
CBPF

MINISTÉRIO DA
CIÊNCIA, TECNOLOGIA,
INOVAÇÕES E COMUNICAÇÕES

Of. CBPF/DIR/107/2016

Rio de Janeiro, 31 de agosto de 2016

Exmo.Sr.
Dr. Gilberto Kassab
DD. Ministro da Ciência, Tecnologia, Inovações e Comunicações – MCTIC
Esplanada dos Ministérios
70067-900 Brasília, DF

Excelentíssimo Sr. Ministro,

Nós, os signatários, pesquisadores e agentes administrativos membros das instituições Nacionais que mantém vínculo de colaboração com a *International Center for Relativistic Astrophysics Network* (ICRANet), vimos aqui manifestar nosso desejo e interesse pela normalização e continuidade dos acordos de colaboração entre a ICRANet e o Brasil. Colocamo-nos, assim, desde já, à Vossa disposição para contribuir ativamente na sua condução, bem como no desenhar das reformulações que reconhecemos ser necessárias para o pleno desenvolvimento das atividades de colaboração entre Brasil e ICRANet.

Desde a assinatura do Acordo de Sede entre a ICRANet e o Governo Brasileiro em 2012, que estabeleceu o Brasil como estado-membro desta Organização Internacional, tendo o CBPF como ponto de contato institucional, foram iniciadas diversas colaborações acadêmico-científicas entre pesquisadores brasileiros e membros da ICRANet, bem como estabelecidos múltiplos acordos de cooperação entre a ICRANet e instituições Nacionais de ensino e pesquisa.

Todos nós, os abaixo-assinados, tendo participado em maior ou menor grau de envolvimento nas atividades da ICRANet no País, reiteramos o nosso apoio à esta Organização e às atividades por ela desenvolvidas, as quais reconhecemos serem de comprovada excelência acadêmica e benéficas para o desenvolvimento da pesquisa em Astrofísica Relativística no Brasil.

Além das inúmeras instâncias de colaboração individuais entre pesquisadores brasileiros e membros da ICRANet desenvolvidas nos últimos anos, bem como o grande número de eventos científicos e escolas, nacionais e internacionais, organizadas pela ICRANet, das quais muitos de nós puderam participar e se beneficiar, gostaríamos de mencionar três grandes atividades que servem como eixo na colaboração Brasil-ICRANet e desempenham papel singular e estruturante para a área de Astrofísica Relativística no País.

A ICRANet é uma rede internacional de pesquisadores, promovendo a interface entre teoria e experimento na área de Astrofísica Relativística. Assim sendo, promove intenso intercâmbio de pesquisadores brasileiros e estrangeiros, contribuindo para o desenvolvimento de novas atividades de pesquisa e formação de recursos humanos. Estas atividades foram financiadas, em parte, por meio do programa Ciência sem Fronteiras, e contaram também com significativos recursos específicos da ICRANet.

Com relação à formação de recursos humanos, a ICRANet promove o único programa de doutorado internacional em Astrofísica Relativística no Mundo, o *International Relativistic Astrophysics Ph.D. Programme* (IRAP-PhD), no âmbito do prestigioso programa Europeu *Erasmus Mundus,* do qual algumas das instituições aqui representadas fazem parte. Mais de uma dezena de estudantes brasileiros já se beneficiaram deste programa, inteiramente financiado com recursos da União Européia e da própria ICRANet, sendo que muitos destes alunos já retornaram ao Brasil, e atuam nas nossas instituições. Neste sentido, o acordo CAPES-ICRANet, que vigorou

durante algum tempo neste período, concedendo bolsas de pesquisa para recém-doutores no Brasil, atuou de maneira eficaz na atração, não apenas destes alunos brasileiros, mas de um número equivalente de estrangeiros egressos do programa IRAP-PhD, que hoje trabalham como pesquisadores altamente qualificados no Brasil.

Finalmente, a ICRANet, em parceria com o *ASI Science Data Center* (ASDC), da Agência Espacial Italiana, têm promovido ação para criação de uma das maiores bases de dados astronômicos do mundo. O *Brazilian Science Data Center* (BSDC) que trabalhará de maneira integrada com o ASDC (http://www.asdc.asi.it) entrará em atividade ainda este ano, e está sendo construído em colaboração com pesquisadores da ICRANet, sendo financiada em parte por esta Instituição.

O acima exposto visa exemplificar e fornecer, de maneira breve, algumas das razões pelas quais nós consideramos o acordo Brasil-ICRANet estratégico e fundamental para o desenvolvimento da Astrofísica Relativística no País. É de capital importância para que tais atividades tenham continuidade, e para que o trabalho e os recursos já empregados nesta direção dêem os frutos esperados, que as relações entre o Brasil e a ICRANet sejam normalizadas. Neste sentido, reiteramos aqui o nosso apoio e comprometimento científico com a colaboração Brasil-ICRANet, e fazemo-nos disponíveis para auxiliar este encaminhamento da maneira que for necessária.

Cordialmente,

RONALD CINTRA SHELLARD,
DIRETOR DO CBPF,
em nome dos signatários[1].

C.C.: Elton Santa Fé Zacarias, Secretário Executivo do MCTI
Carlos Eduardo Higa Matsumoto, Chefe da Assessoria Internacional do MCTI

LISTA DE SIGNATÁRIOS

Marcelo Guzzo	Professor	Instituto de Física Gleb Wataghin, UNICAMP, SP
Newton Frateschi	Diretor	Instituto de Física Gleb Wataghin, UNICAMP, SP
Ulisses Barres de Almeida	Pesquisador	CBPF, RJ
Ilya Shapiro	Professor	Departamento de Física, UFJF, MG
César A. Zen Vasconcellos	Professor	Instituto de Física, UFRGS, RGS
Débora Peres Menezes	Professora	Departamento de Física, UFSC,SC
Marcelo Chiapparini	Professor	Instituto de Física, UERJ, RJ
Rodrigo Maier	Professor	Instituto de Física, UERJ, RJ

[1]A lista de autorizações das assinaturas são guardadas em arquivo e estão à disposição.

Mairton Cavalcante Romeu	Professor	IFCE, CE
Rafael Fernandes Aranha	Professor	Instituto de Física, UERJ, RJ
Maria de Fátima Alves da Silva	Professora	Instituto de Física, UERJ, RJ
Ricardo Magnus Osório Galvão	Professor	Instituto de Física, USP, SP
Manuel Malheiro de Oliveira	Professor e Coordenador Acordo ITA-ICRAnet	Departamento de Física, ITA, SP
Marcos Duarte Maia	Professor	Instituto de Física, UNB, DF
Márcia Bernardes Barbosa	Diretora	Instituto de Física, UFRGS, RS
Bruno Carneiro da Cunha	Professor	Departamento de Física, UFPE, PE
Vanessa Carvalho de Andrade	Professor	Instituto de Física, UNB, DF
Ivan Soares Ferreira	Professor	Instituto de Física, UNB, DF
Daniel Müller	Professor	Instituto de Física, UNB, DF
Clóvis Achy Soares Maia	Professor	Instituto de Física, UNB, DF
Rodrigo Picanço Negreiros	Professor	Instituto de Física, UFF, RJ

Scientific and teaching activities of ICRANet with Brazilian Institutions

Fundação de Amparo à Pesquisa
do Estado do Rio de Janeiro
Rio de Janeiro, RJ, Brazil

Agreement ICRANet - FAPERJ

President
Prof. Dr. Augusto da Cunha Raupp

Scientific Director
Prof. Dr. Jerson Lima Silva

Signatory
Prof. Dr. Ruy Garcia Marques
(President 2007-2014)

Contact person
Dr. Priscilla Haddock Lobo

ONGOING AND PREVIOUS ACTIVITIES

Prof. Dr. Augusto da Cunha Raupp
Participation in the:
· *MG14*, 12-18 July 2015
Visit to ICRANet, on 18 and 19 of July 2015

Prof. Dr. Ruy Garcia Marques
Visits to ICRANet:
From 10 to 18 of August 2013 *on the occasion of the signing ceremony of the ICRANet-FAPERJ Cooperation Agreement*
From 11 to 14 of September 2013 *on the occasion of the signing ceremony of the Seat Agreement in Brazil*

Prof. Dr. Jerson Lima Silva
Visit to ICRANet:
From 10 to 18 of August 2013 *On the occasion of the signing ceremony of the ICRANet-FAPERJ Cooperation Agreement*

Centro Brasileiro de Pesquisas Físicas
Rio de Janeiro, RJ, Brazil

Agreement ICRANet - CBPF
(English/Portuguese)

Director
Prof. Dr. Ronald Cintra Shellard

Signatory
Prof. Dr. Ricardo Magnus Osório Galvão

Contact person
Prof. Dr. Ulisses Barres de Almeida

ONGOING AND PREVIOUS ACTIVITIES

Graduate students from CBPF enrolled in the CAPES-ICRANet postdoctoral program

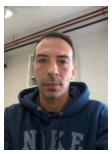
Eduardo Silva Bittencourt
CAPES-ICRANet Postdoc at Sapienza University of Rome, from December 2013 to November 2015
Current position: Professor at Universidade Federal de Itajubá (UNIFEI)
Previous visits to ICRANet:
From 20 of October to 23 of November 2011
From 2 to 19 of October 2012
Publication list, meetings, schools

Gabriel Bartosh Caminha
CAPES-ICRANet Postdoc at University of Ferrara, from February 2014 to January 2016
Current position: Postdoc at University of Ferrara
Publication list, meetings, schools

Grasiele Batista dos Santos
CAPES-ICRANet Postdoc at Sapienza University of Rome, from December 2013 to November 2015
Current position: Professor at Universidade Federal de Alfenas (UNIFAL)
Publication list, meetings, schools

Bernardo Machado de Oliveira Fraga
IRAP PhD – Erasmus Mundus – First Cycle, 2010-2013
CAPES-ICRANet Postdoc at Sapienza University of Rome, from February 2014 to January 2016
Current position: FAPERJ postdoctoral fellowship at Centro Brasileiro de Pesquisas Físicas (CBPF)
Publication list, meetings, schools

ICRANet postdoctoral students at CBPF



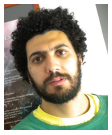
Riccardo Belvedere
IRAP PhD - Seventh Cycle, 2008-2011
CAPES-ICRANet Postdoc at Centro Brasileiro de Pesquisas Físicas (CBPF), from March 2014 to February 2016
Current position: FAPERJ postdoctoral fellowship at Centro Brasileiro de Pesquisas Físicas (CBPF)
Publication list, meetings, schools

Ivan Siutsou
IRAP PhD - Sixth Cycle, 2007-2010
CAPES-ICRANet Postdoc at Centro Brasileiro de Pesquisas Físicas (CBPF), from June 2014 to May 2016
Publication list, meetings, schools

Elena Zaninoni
CAPES-ICRANet Postdoc at Centro Brasileiro de Pesquisas Físicas (CBPF), from April 2014 to August 2015
Publication list, meetings, schools

Visiting Professors from CBPF

Prof. Ulisses Barres de Almeida
Visiting Professor at ICRANet
From 5 to 10 of December 2014
From 14 of June to 9 of July 2015
From 19 to 23 of September 2015
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015 (Co-Chair)
· *1st Colombia-ICRANet Julio Garavito Armero Meeting*, 23-27 November 2015
· *1st Sandoval Vallarta Caribbean Meeting*, November 30-December 3 2015



Érico Goulart
Visiting Professor at ICRANet
From 21 of September to 17 of October 2009
From 25 of October to 19 of November 2010
From 6 to 20 of June 2014
Seminar: "Nonlinear Wave Maps"

Prof. Nelson Pinto Neto
Visiting Professor at ICRANet
From 25 of October to 18 of November 2011
From 1 to 7 July 2012
Participation in the:
· *MG13*, 1-7 July 2012

Prof. Mario Novello
Visiting Professor at ICRANet
From 5 of November to 2 of December 2007
From 12 to 19 of February 2009
From 15 of September to 15 of November 2009
From 5 to 23 of February 2010
From 4 of October to 14 of December 2010
From 14 to 26 of February 2011
From 20 of October to 23 of November 2011
From 16 to 21 of February 2012
From 1 to 19 of October 2012
From 12 to 28 of February 2013
From 3 to 14 of February 2014
Participation in the:
· *1st Cesare Lattes Meeting*, 25 February-3 March 2007
· *IV Steering Committee Meeting*, 3 April 2008
· *V Steering Committee Meeting*, 18 February 2009
· *MG12*, 12-18 July 2009
· *VI Steering Committee Meeting*, 15 February 2010
· *VII Steering Committee Meeting*, 21 February 2011
· *VIII Steering Committee Meeting*, 20 February 2012
· *IX Steering Committee Meeting (Extraordinary)*, 15 October 2012
· *X Steering Committee Meeting*, 25 February 2013
· *XI Steering Committee Meeting*, 4 February 2014

Prof. Felipe Tovar Falciano
From 1 to 7 July 2012
Participation in the:
· *MG13*, 1-7 July 2012

Visiting Professors to CBPF

Prof. Felix Aharonian
CAPES-ICRANet Senior Visitor
From 13 of December 2013 to 15 of January 2014
From 12 to 25 of March 2016
Seminar: "Discovery of a PeVatron in the Galactic Center: Implications for the Physics of Black Holes and for Origin of Galactic Cosmic Rays"
March 23, 2016 - Announcement
Publication list, meetings, schools

Prof. Gennady Bisnovatyi Kogan
CAPES-ICRANet Senior Visitor
From 15 of June to 31 of July 2014
Publication list, meetings, schools

Prof. Paolo Giommi
CAPES-ICRANet Senior Visitor
From 15 of December 2013 to 15 of January 2014
From 8 to 31 of August 2014
From 5 of April to 1 of May 2015
From 1 to 31 of August 2015
Publication list, meetings, schools

Prof. Grant Mathews
CAPES-ICRANet Senior Visitor
From 17 of May to 13 of June 2016
Seminar: What and When was the Bethlehem Star?
June 7, 2016 - Announcement
Publication list, meetings, schools

Prof. Jorge Rueda
CAPES-ICRANet Senior Visitor
From 15 of December 2013 to 15 of January 15 2014
From April 12 to May 12 2015
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
Publication list, meetings, schools

Prof. Remo Ruffini - ICRANet Director
Conference: On the classification of GRBs and their occurrence rates
September 15, 2016 - Announcement - Video

Joint Activities

ICRANet publications with CBPF

1st Cesare Lattes Meeting

Rio de Janeiro
February 25 - March 3, 2007

2nd César Lattes Meeting

Niterói and Rio de Janeiro - April 13-18, 2015
João Pessoa - April 21, 2015
Recife and Fortaleza - April 22, 2015
Proceedings

3rd César Lattes Meeting

T.B.D.

Instituto Tecnológico de Aeronáutica
São José dos Campos, SP, Brazil

Agreement ICRANet - ITA

Rector
Prof. Dr. Anderson Ribeiro Correia

Signatories
MoU and Cooperation Agreement
Prof. Dr. Reginaldo Dos Santos

Renewal of Cooperation Agreement
Prof. Dr. Carlos Américo Pacheco

Contact person
Prof. Dr. Manuel Malheiro

ONGOING AND PREVIOUS ACTIVITIES

Graduate students from ITA enrolled in the IRAP PhD

Sheyse Martins de Carvalho
IRAP PhD - Erasmus Mundus - First Cycle, 2010-2013
CAPES-ICRANet Postdoc at Universidade Federal Fluminense (UFF), from March 2014 to February 2016
Current position: Professor at Universidade Federal do Tocantins (UFT)
Publication list, meetings, schools

Fernanda Gomes de Oliveira
IRAP PhD - Erasmus Mundus - Third Cycle, 2012-2015
Publication list, meetings, schools

Graduate student from ITA enrolled in the CAPES-ICRANet postdoctoral program

Jaziel Goulart Coelho
CAPES-ICRANet Postdoc at Sapienza University of Rome, from February 2014 to January 2015
Current Position: Postdoctoral student at INPE
Publication list, meetings, schools

Visiting Professors from ITA

Prof. Manuel Malheiro
Visiting Professor at ICRANet
From November 2010 to November 2011
From 9 to 14 of July 2012
From 18 to 21 of July 2015
Participation in the:
· *3rd Galileo*, Xu Guangqi meeting, October 12-16 2011
· *MG13*, 1 July 2012
· *2nd César Lattes Meeting*, 13-22 April 2015
· *MG14*, 12-18 July 2015
· *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20-24 July 2015
· *Adriatic Meeting*, 20-30 June 2016

Prof. Rubens Marinho
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Visiting Professors to ITA

Prof. Jorge Rueda

Prof. Remo Ruffini

Visiting Students from ITA

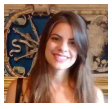
Flavia Rocha
Visiting student at ICRANet
From 18 to 21 of July 2015
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
· *MG14*, 12-18 July 2015
· *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20-24 July 2015

Samuel Santos
Visiting student at ICRANet
From 18 to 21 of July 2015
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
· *MG14*, 12-18 July 2015
· *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20-24 July 2015

Edson Otoniel
Visiting student at ICRANet
From 18 to 21 of July 2015
Participation in the:
· *MG14*, 12-18 July 2015
· *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20-24 July 2015

José Domingo Arbañil Vela
Visiting student at ICRANet
From 18 to 21 of July 2015
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
· *MG14*, 12-18 July 2015
· *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20-24 July 2015

Geanderson Carvalho
Visiting student at ICRANet
From 18 to 21 of July 2015
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
· *MG14*, 12-18 July 2015
· *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20-24 July 2015



Lilian Ferrao
Visiting student at ICRANet
From 18 to 21 of July 2015
Participation in the:
· *MG14*, 12-18 July 2015
· *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20-24 July 2015

Ronaldo Vieira Lobato
Visiting student at ICRANet
From 18 to 21 of July 2015
From January to June 2017 (expected, CAPES Sandwich Fellowship)
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
· *MG14*, 12-18 July 2015
· *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20-24 July 2015

Universidade Federal Fluminense
Niterói, RJ, Brazil

Agreement ICRANet - UFF
(English - Portuguese)

Rector
Prof. Dr. Sidney Luiz de Mello Matos

Signatory
Prof. Dr. Roberto De Souza Salles

Contact person
Prof. Dr. Rodrigo Picanço Negreiros

ONGOING AND PREVIOUS ACTIVITIES

ICRANet postdoctoral students at UFF

Sheyse Martins de Carvalho
IRAP PhD - Erasmus Mundus - First Cycle, 2010-2013
CAPES-ICRANet Postdoc at Universidade Federal Fluminense (UFF), from March 2014 to February 2016
Current position: Professor at Universidade Federal do Tocantins (UFT)
Publication list, meetings, schools

Visiting Professors from UFF

Rodrigo Picanço Negreiros
CAPES-ICRANet Sabbatical Visiting Professor at ICRANet
From 26 of November to 7 of December 2014
From 7 of January to 15 of February 2015
Seminar: "Hydrodynamics as an effective theory"
Previous visits to ICRANet:
From 1 to 12 of March 2012
Participation in the:
· *IRAP Ph.D. Erasmus Mundus Workshop - Les Houches*, 3-8 April 2011
· *MG13*, 1 July 2012
· *The 2013 yearly ICRANet Scientific Meeting on Relativistic Astrophysics*, 3-21 June 2013
· *XII ICRANet Scientific Committee Meeting*, 27-28 November 2014
· *2nd César Lattes Meeting*, 13-22 April 2015 (Co-Chair)
Publication list, meetings, schools

Cristian Giovanny Bernal
Visiting Professor at ICRANet
From 3 to 16 February 2015
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Joint Activities

2nd César Lattes Meeting

Niterói and Rio de Janeiro - April 13-18, 2015
João Pessoa - April 21, 2015
Recife and Fortaleza - April 22, 2015
Proceedings

Universidade Federal do Rio Grande do Sul
Porto Alegre, RS, Brazil

Agreement ICRANet - UFRGS - IFUFRGS

Rector
Prof. Dr. Carlos Alexandre Netto

Signatories
Prof. Dr. Carlos Alexandre Netto
Profa. Dra. Márcia Barbosa (Director IFUFRGS)
Prof. Dr. S.O. Kepler (Astronomy Dept. IFUFRGS)

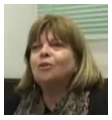
Contact persons
Profa. Dra. Márcia Barbosa
Prof. Dr. Dimiter Hadjimichef
Prof. Dr. S.O. Kepler
Prof. Dr. César Zen

ONGOING AND PREVIOUS ACTIVITIES

Graduate students from UFRGS enrolled in the CAPES-ICRANet PhD program

Carlos Henrique Brandt
PhD CAPES-ICRANet at ASDC ASI & La Sapienza University of Rome, 2014-2017
Publication list, meetings, schools

Visiting Professor from UFRGS



Prof. Denise Grüne Ewald
Visiting Professor at ICRANet
From 23 of November to 4 of December 2014
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Prof. S.O. Kepler
Visiting Professor at ICRANet
From 25 of June to 7 of July 2014
Participation in the:
· *1st Scientific ICRANet Meeting in Armenia*, 30 June - 4 July 2014
· *MG14*, 12-18 July 2015

Prof. César Zen
CAPES-ICRANet Sabbatical Visiting Professor at ICRANet
From June 2014 to May 2015
Participation in the:
· *1st Scientific ICRANet Meeting in Armenia*, 30 June - 4 July 2014
· *2nd César Lattes Meeting*, 13-22 April 2015 (Co-Chair)
· *MG14*, 12-18 July 2015
Publication list, meetings, schools

Joint Activities

Conference
Prof. Remo Ruffini - ICRANet Director
"Black Holes, Gamma Ray Bursts and Supernovae: the leading progress in physics and relativistic astrophysics"
March 27, 2014
Announcement - Photos

Instituto Nacional de Pesquisas Espaciais
São José dos Campos, SP, Brazil

Memorandum of Understanding
ICRANet - INPE

Director
Prof. Dr. Ricardo Magnus Osório Galvão

Signatory
Prof. Dr. Leonel Fernando Perondi

Contact person
Prof. Dr. Carlos Alexandre Wuensche de Souza

ONGOING AND PREVIOUS ACTIVITIES

Graduate students from INPE enrolled in the IRAP PhD

Tais Maiolino
IRAP PhD - Erasmus Mundus - Fourth Cycle, 2013-2016
Publication list, meetings, schools

ICRANet postdoctoral students at INPE

Ana Virginia Penacchioni
IRAP PhD - Erasmus Mundus - First Cycle, 2010-2013
CAPES-ICRANet Postdoc at INPE, from January 2014 to December 2015
Current Position: Researcher at ASI
Publication list, meetings, schools

Visiting Professors from INPE

Prof. João Braga
Visiting Professor at ICRANet
From 23 to 25 of October 2013
Participation in the:
· *1st Cesare Lattes Meeting*, 25 February-3 March 2007
· *III ICRANet Scientific Committee Meeting*, 19-20 November 2008
· *IV ICRANet Scientific Committee Meeting*, 14-15 December 2009
· *2nd Galileo*, Xu Guangqi meeting, July 12-17 2010
· *V ICRANet Scientific Committee Meeting*, 14-15 December 2010
· *3nd Galileo*, Xu Guangqi meeting, October 12-16 2011
· *VI ICRANet Scientific Committee Meeting*, 19-20 December 2011
· *VII ICRANet Scientific Committee Meeting*, 10-11 December 2012
· *VIII ICRANet Scientific Committee Meeting (Extraordinary)*, 12 June 2013
· *IX ICRANet Scientific Committee Meeting*, 18-20 December 2013
· *X ICRANet Scientific Committee Meeting (Extraordinary)*, 26 May 2014
· *XI ICRANet Scientific Committee Meeting (Extraordinary)*, 31 July 2014

Prof. Carlos Alexandre Wuensche de Souza
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Universidade de Brasília
Brasília, DF, Brazil

Agreement ICRANet - UnB
(English - Portuguese)

Rector
Prof. Dr. José Tadeu Jorge

Signatory
Profa. Dra. Sônia Nair Báo

Contact person
Prof. Marcos Maia
Prof. Clovis Maia

ONGOING AND PREVIOUS ACTIVITIES

Joint Activities

Conference
Prof. Remo Ruffini - ICRANet Director
"Supernovae, Neutron Stars, Black Holes and Gamma-Ray Bursts (GRBs) in the centenary of Einstein Equations"
September 4, 2015

Universidade Estadual de Campinas
Campinas, SP, Brazil

Agreement ICRANet - UNICAMP
(English - Portuguese)

Rector
Prof. Dr. José Tadeu Jorge

Signatory
Prof. Dr. Alvaro Penteado Crósta

Contact person
Prof. Dr. Marcelo M. Guzzo

ONGOING AND PREVIOUS ACTIVITIES

Graduate students from UNICAMP enrolled in the IRAP PhD

Bruno Sversut Arsioli
IRAP PhD - Erasmus Mundus - Second Cycle, 2011-2014
Current Position: ASDC ASI & La Sapienza University of Rome
Publication list, meetings, schools

Visiting Professors from UNICAMP

Prof. Donato Giorgio Torrieri
Visiting Professor at ICRANet
From 22 to 29 of July 2016
Seminar: "Hydrodynamics as an effective theory"

Prof. Marcelo Moraes Guzzo
Visiting Professor at ICRANet
From 23 of August 2016 to 31 of January 2017
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Universidade Federal de Santa Catarina
Florianópolis, SC, Brazil

Agreement ICRANet - UFSC

Rector
Prof. Dr. Luis Carlos Cancellier de Olivo

Signatory
Profa. Dra. Roselane Neckel

Contact person
Profa. Dra. Débora Peres Menezes

ONGOING AND PREVIOUS ACTIVITIES

Graduate student from UFSC enrolled in the CAPES-ICRANet postdoctoral program

Rafael de Lima
CAPES-ICRANet Postdoc at ICRANet Pescara, from March 2014 to February 2016
Current Position: Professor at Universidade do Estado de Santa Catarina (UDESC)
Publication list, meetings, schools

Visiting Professor from UFSC

Prof. Débora Peres Menezes
Visiting Professor at ICRANet
From 17 to 21 of March 2014
Seminar: "Stellar quark matter in magnetic fields and anisotropic effects"
Participation in the:
· *XII ICRANet Scientific Committee Meeting*, 27-28 November 2014
· *2nd César Lattes Meeting*, 13-22 April 2015
· *MG14*, 12-18 July 2015

Prof. Celso De Camargo Barros Jr.
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Visiting Professors to UFSC

Prof. Felix Aharonian
CAPES-ICRANet Senior Visitor
From 28 February to 11 March and from 19 to 31 of March, 2016
Mini course - Lectures: "Nonthermal High Energy Universe"
Seminar: "Nature's Extreme Accelerators Exploring the Nonthermal Universe with High Energy Gamma Rays"
Publication list, meetings, schools

Prof. Gennady Bisnovatyi Kogan
CAPES-ICRANet Senior Visitor
From 1 June to 10 of July, 2015
Publication list, meetings, schools

Universidade do Estado de Santa Catarina
Florianópolis, SC, Brazil

Agreement ICRANet - UDESC
English - Portuguese

Rector
Prof. Dr. Marcus Tomasi

Signatory
Prof. Dr. Marcus Tomasi

Contact person
Prof. Rafael de Lima

ONGOING AND PREVIOUS ACTIVITIES

Rafael de Lima
CAPES-ICRANet Postdoc at ICRANet Pescara, from March 2014 to February 2016
Current Position: Professor at Universidade do Estado de Santa Catarina (UDESC)
Publication list, meetings, schools

Universidade Federal da Paraíba
João Pessoa, PB, Brazil

Agreement ICRANet - UFPB
(Eng/Port)

Rector
Profa. Dra. Margareth Diniz

Signatory
Prof. Dr. Rômulo Soares Polari

Contact person
Prof. Dr. Carlos Augusto Romero Filho

ONGOING AND PREVIOUS ACTIVITIES

Graduate student from UFPB enrolled in the CAPES-ICRANet PhD program

Iarley Pereira Lobo
PhD CAPES-ICRANet at Sapienza University of Rome, 2014-2017
Publication list, meetings, schools

Visiting Professors from UFPB

Prof. Carlos Augusto Romero Filho
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Visiting Professors to UFPB

Prof. Ulisses Barres de Almeida
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Prof. Jorge Rueda
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
Publication list, meetings, schools

Prof. Remo Ruffini
· *2nd César Lattes Meeting*, 13-22 April 2015
21 April 2015
Public Lecture: "100 Anos da Relatividade Geral"
Poster - Photos - Videos

Joint Activities

2nd César Lattes Meeting

Niterói and Rio de Janeiro - April 13-18, 2015
João Pessoa - April 21, 2015
Recife and Fortaleza - April 22, 2015
Proceedings

Government of the State of Ceará

Agreement ICRANet - CEARÁ
(English)

Signatories
Cid Gomes – State Government of Ceará
Prof. Dr. René Barreira
Prof. Dr. José Monserrat Filho
Prof. Dr. Francisco de Assis M. Araripe
Prof. Dr. Antonio Colaço Martins
Prof. Dr. Ricardo Galvão
Prof. Dr. Tarcisio Pequeno
Prof. Dr. Mario Novello
Prof. Dr. F.J. Amaral Vieira
Prof. Dr. Gil Aquino de Farias

Contact person
Prof. Dr. Amaral Vieira

Instituto Federal de Educação, Ciência e Tecnologia do Ceará
Fortaleza, CE, Brazil

MoU ICRANet - IFCE

Rector
Prof. Dr. Virgilio Augusto Sales Araripe

Signatory
Prof. Dr. Virgilio Augusto Sales Araripe

Contact person
Prof. Dr. Amaral Vieira

ONGOING AND PREVIOUS ACTIVITIES

Visiting Professors from IFCE

Prof. Herman J. Mosquera Cuesta
CAPES-ICRANet Sabbatical Visiting Professor
From January to June 2014
Previous visits to ICRANet:
From June to August 2007
From 30 of September to 1 of December 2008
From 7 to 11 of July 2009
From 21 of September to 24 of December 2009
From 17 of July to 17 of September 2010
From 12 of April to 2 of June 2012
Participation in the:
· *1st Cesare Lattes Meeting*, 25 February-3 March 2007
· *MG12*, 12-18 July 2009
· *3rd Galilelo*, Xu Guangqi meeting, 12-16 October 2011
· *MG13*, 1-7 July 2012
· *Zeldovich-100 Meeting*, 10-14 March 2014
Publication list, meetings, schools

Visiting Professors to IFCE

Prof. Remo Ruffini
· *2nd César Lattes Meeting*, 13-22 April 2015
22 April 2015
Public Lecture: "Cosmic Matrix in the Jubilee of Relativistic Astrophysics"
Photos

Joint Activities

2nd César Lattes Meeting

Niterói and Rio de Janeiro - April 13-18, 2015
João Pessoa - April 21, 2015
Recife and Fortaleza - April 22, 2015
Proceedings

Universidade Federal de Pernambuco
Recife, PE, Brazil

Agreement ICRANet - UFPE

Rector
Prof. Dr. Anísio Brasileiro de Freitas Dourado

Signatories
Prof. Dr. Anísio Brasileiro de Freitas Dourado
Prof. Airton Castro
Prof. Dr. Cesar A. Z. Vasconcellos
Prof. Dr. Antônio Azevedo de Costa
Prof. Dr. José Araújo dos Santos Jr.

Contact person
Prof. Dr. Bruno Carneiro da Cunha

ONGOING AND PREVIOUS ACTIVITIES

Graduate student from UFPE enrolled in the CAPES-ICRANet PhD program

Gabriel Guimarães Carvalho
PhD CAPES-ICRANet at Sapienza University of Rome, 2014-2017
Publication list, meetings, schools

Visiting Professors from UFPE

Prof. Hélio Teixera Coelho
Visiting Professor at ICRANet
From 2 to 21 of October 2014

Prof. Bruno Carneiro da Cunha
Visiting Professor at ICRANet
From 18 to 21 of July 2015
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
· *MG14*, 12-18 July 2015

Visiting Professors to UFPE

Prof. Ulisses Barres de Almeida
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Prof. Jorge Rueda
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
Publication list, meetings, schools

Prof. Remo Ruffini
· 29 August 2014
Seminar: "Supernovae and Gamma Ray Bursts: the new frontier of the Cosmic Matrix"
· *2nd César Lattes Meeting*, 13-22 April 2015
22 April 2015 - Public Lecture at Espaço Ciência
Photos

Joint Activities

2nd César Lattes Meeting

Niterói and Rio de Janeiro - April 13-18, 2015
João Pessoa - April 21, 2015
Recife and Fortaleza - April 22, 2015
Proceedings

Universidade Federal de Itajubá
Itajubá, MG, Brazil

Agreement ICRANet - UNIFEI
(English/Portuguese)

Rector
Prof. Dr. Dagoberto Alves de Almeida

Signatory
Prof. Dr. Rômulo Soares Polari

Contact person
Prof. Dr. Renato Klippert

ONGOING AND PREVIOUS ACTIVITIES

Graduate students from UNIFEI enrolled in the IRAP PhD

Jonas Pedro Pereira
IRAP PhD - Erasmus Mundus - Second Cycle, 2011-2014
Current position: Postdoc at Universidade Federal do ABC (UFABC)
Publication list, meetings, schools

Visiting Professors from UNIFEI

Prof. Vittorio De Lorenci
Visiting Professor at ICRANet
From 14 to 26 of Febrary 2011
Participation in the:
· *MG13*, 1-7 July 2012

Prof. Renato Klippert
Visiting Professor at ICRANet
Participation in the:
· *MG13*, 1-7 July 2012
· *MG14*, 12-18 July 2015

University of Rio de Janeiro
Rio de Janeiro, RJ, Brazil

Agreement ICRANet - UERJ
(English/Portuguese)

Rector
Prof. Dr. Ruy Garcia Marques

Signatory
Prof. Dr. Ricardo Vieiralves de Castro

Contact person
Prof. Dr. Santiago Perez Bergliaffa

ONGOING AND PREVIOUS ACTIVITIES

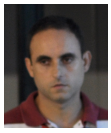
Graduate students from UERJ enrolled in the IRAP PhD

Gustavo de Barros
IRAP PhD - Fifth Cycle, 2006-2009
Current Position: Adjunct Professor at Centro Universitário da Zona Oeste (OEZO)
Publication list, meetings, schools

Luis Juracy Rangel Lemos
IRAP PhD - Fifth Cycle, 2006-2009
Current Position: Professor at Universidade Federal do Tocantins (UFT)
Publication list, meetings, schools

Visiting Professors from UERJ

Prof. Santiago Perez Bergliaffa
Visiting Professor at ICRANet
From 24 of July to 9 of August 2009
From 18 to 30 of July 2011
From 9 to 21 of July 2012
Participation in the:
· *1st Cesare Lattes Meeting*, 25 February-3 March 2007
· *MG12*, 12-18 July 2009
· *MG13*, 1-7 July 2012



Prof. Eduardo Lenho Coelho
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015

Brazilian Federal Agency for Support and Evaluation of Graduate Education
Brasília, DF, Brazil

Agreement ICRANet - CAPES

President
Prof. Dr. Carlos Afonso Nobre

Signatory
Prof. Dr. Jorge Almeida Guimarães

ONGOING AND PREVIOUS ACTIVITIES

Prof. Jorge Almeida Guimarães
Visit to ICRANet on October 2013

ICRANet-IRAP PhD fellowships attributed to Brazilian students and their scientific publications

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- de Barros, Gustavo	
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- Sversut Arsioli, Bruno	
- Gomes de Oliveira, Fernanda	
- Maiolino, Tais	

de Barros, Gustavo

Position:
IRAP PhD – Fifth Cycle, 2006-09

Current position:
Professor Adjunto Centro Universitário da Zona Oeste – OEZO

Publications:

-) Patricelli, B.; Bernardini, M. G.; Bianco, C. L.; Caito, L.; de Barros, G.; Izzo, L.; Ruffini, R.; Vereshchagin, G. V.; “Analysis of GRB 080319B and GRB 050904 within the Fireshell Model: Evidence for a Broader Spectral Energy Distribution”; The Astrophysical Journal, 756 (2012), id. 16; DOI: 10.1088/0004-637X/756/1/16

-) Bianco, C. L.; Amati, L.; Bernardini, M. G.; Caito, L.; De Barros, G.; Izzo, L.; Patricelli, B.; Ruffini, R.; “The class of ``disguised'' short GRBs and its implications for the Amati relation”; Memorie della Società Astronomica Italiana Supplement, 21 (2012), 139.

-) Patricelli, B.; Bernardini, M. G.; Bianco, C. L.; Caito, L.; de Barros, G.; Izzo, L.; Ruffini, R.; Vereshchagin, G.; “High Energetic Gamma Ray Bursts and Their Spectral Properties Within the Fireshell Model”; International Journal of Modern Physics: Conference Series, 12 (2012), pp. 385-389; DOI: 10.1142/S2010194512006599.

-) Bianco, C. L.; Bernardini, M. G.; Caito, L.; De Barros, G.; Izzo, L.; Muccino, M.; Patricelli, B.; Penacchioni, A. V.; Pisani, G. B.; Ruffini, R.; “Needs for a new GRB classification following the fireshell model: "genuine short", "disguised short" and "long" GRBs”; Proceedings of the Gamma-Ray Bursts 2012 Conference (GRB 2012). May 7-11, 2012. Munich, Germany.

-) de Barros, G.; Amati, L.; Bernardini, M. G.; Bianco, C. L.; Caito, L.; Izzo, L.; Patricelli, B.; Ruffini, R.; “On the nature of GRB 050509b: a disguised short GRB”; Astronomy & Astrophysics, 529 (2011), A130; DOI: 10.1051/0004-6361/201116659.

-) Caito, L.; Amati, L.; Bernardini, M. G.; Bianco, C. L.; de Barros, G.; Izzo, L.; Patricelli, B.; Ruffini, R.; “GRB 071227: an additional case of a disguised short burst”; Astronomy and Astrophysics, 521 (2010), A80; DOI: 10.1051/0004-6361/201014640.

-) Patricelli, B.; Bernardini, M. G.; Bianco, C. L.; Caito, L.; de Barros, G.; Izzo, L.; Ruffini, R.; “Black Holes in Gamma Ray Bursts”; AIP Conference Proceedings, 1279 (2010), pp. 406-408, DOI: 10.1063/1.3509327.

-) Bianco, Carlo Luciano; Bernardini, Maria Grazia; Caito, Letizia; de Barros, Gustavo; Izzo, Luca; Patricelli, Barbara; Ruffini, Remo; “Disguised Short Bursts and the Amati Relation”; AIP Conference Proceedings, 1279 (2010), pp. 299-301; DOI: 10.1063/1.3509290.

-) Ruffini, Remo; Aksenov, Alexey G.; Bernardini, Maria Grazia; Bianco, Carlo Luciano; Caito, Letizia; Chardonnet, Pascal; Dainotti, Maria Giovanna; de Barros, Gustavo; Guida, Roberto; Izzo, Luca; Patricelli, Barbara; Lemos, Luis Juracy Rangel; Rotondo, Michael; Hernandez, Jorge Armando Rueda; Vereshchagin, Gregory; Xue, She-Sheng; “The Blackholic energy and the canonical Gamma-Ray Burst IV: the ``long,'' ``genuine short'' and ``fake-disguised short'' GRBs”; XIII Brazilian School on Cosmology and Gravitation (XIII BSCG); AIP Conference Proceedings, 1132 (2009), pp. 199-266; DOI: 10.1063/1.3151839.

-) Ruffini, Remo; Aksenov, Alexey; Bernardini, Maria Grazia; Bianco, Carlo Luciano; Caito, Letizia; Dainotti, Maria Giovanna; de Barros, Gustavo; Guida, Roberto; Vereshchagin, Gregory; Xue, She-Sheng; “The canonical Gamma-Ray Bursts: long, ``fake''-``disguised'' and ``genuine'' short bursts”; AIP Conference Proceedings, 1111 (2009), pp. 325-332; DOI: 10.1063/1.3141569.

-) de Barros, G.; Aksenov, A.; Bianco, C. L.; Ruffini, R.; Vereshchagin, G.; “Fireshell versus Fireball scenarios”; AIP Conference Proceedings, 1065 (2008), pp. 234-237; DOI: 10.1063/1.3027919.

-) e Barros, G.; Bernardini, M. G.; Bianco, C. L.; Caito, L.; Dainotti, M. G.; Guida, R.; Ruffini, R.; “Is GRB 050509b a ``genuine'' short GRB?”; AIP Conference Proceedings, 1065 (2008), pp. 231-233; DOI: 10.1063/1.3027918.

-) Ruffini, Remo; Aksenov, Alexey G.; Bernardini, Maria Grazia; Bianco, Carlo Luciano; Caito, Letizia; Dainotti, Maria Giovanna; de Barros, Gustavo; Guida, Roberto; Vereshchagin, Gregory V.; Xue, She-Sheng; “The canonical Gamma-Ray Bursts and their ``precursors''”; AIP Conference Proceedings, 1065 (2008), pp. 219-222; DOI: 10.1063/1.3027915.

Meetings, conferences, seminars, schools:

- 2006. November 28, December 17 – “Gravitational waves, relativistic astrophysics and cosmology” doctoral School, Institut Henry Poincaré – Université Pierre et Marrie Curie. Paris (France)

- 2006. December 11-15. ”High Energy, Cosmology and Strings” Paris - France.

- 2007. February 25, March 3 - César Lattes Meeting on GRBs, black holes and supernovae. Rio de Janeiro – Brasil

- 2007. June 25-30. "X Italian-Korean SymposiumonRelativistic Astrophysics", Pescara - Italia

- 2007. July 20-30. "IV Italian-Sino Workshop on Relativistic Astrophysics", Pescara - Italia

- 2007. September, 16-22 - National School of Astrophysics, 9o cycle, 2o course. Isola di San Servolo - Venezia (Italy)

- 2008. February, 10-15 - Observational evidences for Black-holes in the universe. Kolkata (India)

- 2008. February, 16-17 - Black-holes, Neutron Stars and Gamma ray bursts. Kolkata (India)

- 2008. June, 23-27 - Nanjing GRB conference. Nanjing (China)

- 2008. July, 8 -18 – Third Stueckelberg Workshop on Relativistic Field Theories. Pescara (Italy)

- 2008. July 20, August 2 - XIII Brazilian School of Cosmology and Gravitation. Rio de Janeiro (Brazil)

- 2008. September, 7-19 - Probing stellar populations out to the distant universe. Cefalù (Italy)

- 2009. May 2-5 – APS Physics April Meeting, Colorado

- 2009. 6th Italian-Sino Workshop – June 29-July 1, 2009 – Pescara (Italy)

- 2009. MG12 – 12-18 July 2009. Paris (France)

- 2009. May 26-29, The sun the stars the universe and general relativity, Fortaleza/Sobral (Brazil)

- 2009. September 14-18, The Shocking Universe - Gamma Ray Burst and High Energy Shock, San Servolo, Venice, Italy.

- 2010. The Second Galileo-Xu Guangqi meeting. July 12-17, 2010 Nice France

- 2010. Irap Ph.D. Erasmus Mundus school. September 6-24, 2010 Nice France

Pereira, Jonas Pedro

Current position:
Postdoctoral student at UFABC (Santo André – SP)
fellowship: FAPESP

Previous positions:
Postdoctoral student at Towson University (Maryland, USA) from June 2015 to May 2016; fellowship: CNPq's Program "Science without borders" of the Brazilian government.

IRAP PhD – Erasmus Mundus
Second Cycle, 2011-2014

Publications:

-) De Lorenci, V. A., Faúndez-Abans, M. , Pereira, J. P.; Testing The Newton Second Law in the Regime of Small Accelerations, Astron. Astrophys. 503, L1 (2009).

-) De Lorenci, Vitorio A., Pereira, Jonas P.; Trirefringence in nonlinear metamaterials, Phys. Rev. A 86, 013801 (2012).

-) De Lorenci, Vitorio A., Klippert, R., Pereira, Jonas P., Shi-Yuan, Li; Multirefringence phenomena in nonlinear electrodynamics, Phys. Rev. D 88, 065015 (2013).

-) De Lorenci, Vitorio A., Pereira, Jonas P.; One way propagation of light in Born- Infeld-like metamaterials, Phys. Rev. A 89, 043822 (2014).

-) Pereira, Jonas P., Mosquera Cuesta, Herman J., Rueda, Jorge A., Ruffini, R.; On the black hole mass decomposition in nonlinear electrodynamics, Phys. Lett. B 734, 396 (2014). http://adsabs.harvard.edu/abs/2014PhLB..734..396P

-) Pereira, Jonas P., Rueda, Jorge A., Coelho, Jaziel G.; Stability of thin-shell interfaces inside compact stars, Phys. Rev. D. 90, 123011 (2014). http://adsabs.harvard.edu/abs/2014PhRvD..90l3011P

-) Pereira, Jonas P., Rueda, Jorge A.; Radial stability in stratified stars, Astrophys. J. 801, 19 (2015). http://adsabs.harvard.edu/abs/2015ApJ...801...19P

-) Pereira, Jonas P., Rueda, Jorge A.; Energy decomposition within Einstein-Born- Infeld black holes, Phys. Rev. D. 91, 064048 (2015). http://adsabs.harvard.edu/abs/2015PhRvD..91f4048P

-) Coelho, Jaziel G., Pereira, Jonas P., and de Araújo, José C.N.; The influence of quantum vacuum friction on pulsars, ApJ. 823, 97 (2016), http://adsabs.harvard.edu/abs/2016ApJ...823...97C

-) Bittencourt, Eduardo, Pereira, Jonas P., Smolyaninov, Igor I., and Smolyaninova, Vera N.; The flexibility of optical metrics, Class. Quantum Grav. 33, 165008 (2016), http://adsabs.harvard.edu/abs/2016CQGra..33p5008B

-) Pereira, Jonas P., Overduin, James M., and Poyneer, Alexander J.; Sattelite test of the equivalence principle as a probe of Modified Newtonian Dynamics, Phys. Rev. Lett. 117, 071103 (2016), http://adsabs.harvard.edu/abs/2016PhRvL.117g1103P

-) Pereira, Jonas P., Smolyaninov, Igor I., and Smolyaninova, Vera N.; Magnetic liquids under high electric fields as broadband optical diodes, Phys. Rev. A 94, 043852 (2016), http://adsabs.harvard.edu/abs/2016PhRvA..94d3852P

-) Mosquera Cuesta, Herman J., Lambiase, Gaetano, and Pereira, Jonas P.; Probing nonlinear electrodynamics in slowly rotating spacetimes through neutrino astrophysics, in press in Phys. Rev. D (2017), http://adsabs.harvard.edu/abs/2017arXiv170100431M

Meetings, conferences, seminars, schools:

- XIV Brazilian School of Cosmology and Gravitation. Congress. Description: Participation, Mangaratiba, Brazil, on Gravitation and Cosmology. September 2010.

- EMJD School- Nice, France- 5-27 September 2011

- IRAP PhD EMJD Workshop- Les Houches, France- 2-6 October 2011

- EMJD School- Nice, France- 5-8 June 2012

-EMJD School- Nice, France- 3-19 September 2012

- EMJD School- Nice, France- 15-31 May 2013

- EMJD School- Nice, France- 2-20 September 2013

-Scientific interactions and studies in Nice- 3 April- 26 June 2014

- XIII Marcel Grossman Congress. Description: Participation, Stockholm, Sweden, on General Relativity. July 2012

- 27th Texas Symposium. Description: Talk given: Black hole mass decomposition in nonlinear electrodynamics and applications, Texas, USA, on Relativistic Astrophysics. December 2013.

- Zel’dovich - 100 Meeting. Description: Talk given: Black hole mass decomposition in nonlinear electrodynamics and some of its consequences, Minsk, Belarus, in honor of the 100th anniversary of Yakov Borisovich Zel’dovich. March 2014.

- Black Holes: the largest energy sources in the universe. Description: Talk given: Black hole mass decomposition in nonlinear electrodynamics and some of its consequences, Yerevan, Armenia, on the occasion of the 1st Scientific ICRANet, Meeting in Armenia. July 2014.

- 2nd César Lattes Meeting “Supernovae, Neutron Stars, Black Holes” Niteroi. Talk given: Radial Stability in Stratified Stars, Niteroi, Brazil. April 2015, “Physical insights into the radial stability in stratified stars”

- 7th IWARA-Gramado, Brazil, 9-13 October 2016; Talk given: STEP as a decisive test of MOND on Earth.

Sversut Arsioli, Bruno

Current position:

Postdoc – ICRANet, 2017.Building Cooperation with IFGW-Unicamp and the Science Data Center ASI

Previous position:

Postdoc – ASDC ASI & La Sapienza University of Rome
Ciência sem Fronteiras fellowship (Cnpq - Brazil) Cycle, 2015

IRAP PhD – Erasmus Mundus
Second Cycle, 2011-2014

Publications:

-) Arsioli B., Giommi P., Chang Y.L.; The Brazilian ICRANet High-Energy BlazarCatalog: 1BIHEB. 2017, *In prep*.

-) Arsioli B., Giommi P., Gianluca P.; New Gamma-Ray Detections of Radio-Selected Blazars with Fermi-LAT: Testing SSC and EC Scenarios for Hints on the Gamma-Ray Emission Region. *To be submitted to A&A, Jan. 2017*.

-) Chang Y.L., Giommi P., Arsioli B., Padovani P.; Statistical Population Properties and Evolution of 2WHSP blazars. *To be submitted to A&A, Mar. 2017*.

-) Arsioli, B. & Chang, Y.L.; Searching for gamma-ray signature in WHSP blazars: Fermi-LAT detection of 150 excess signal in the 0.3-500GeV band, A&A 2017 in press; https://arxiv.org/abs/1609.08501 .

-) P. Padovani , E. Resconi, P. Giommi, B. Arsioli, Y. L. Chang, Extreme blazars as counterparts of IceCube astrophysical neutrinos; https://arxiv.org/abs/1601.06550.

-) Arsioli, B., Chang Y . L., Detecting New ray Sources Based on Multi-frequency Data , The Case of 1WHSPJ031423.9+061956, Proc. of the 2nd César Latter meeting , "Supernovae, Neutron Stars, Black Holes", 2015, Niterói- Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22. Available online: https://www.researchgate.net/publication/300123693_Detecting_new_g-ray_sources_based_on_multi-frequency_data_the_case_of_1WHSPJ0314239061956.

-) Arsioli, B., Fraga, B., Giommi P., et al.; VizieR Online Data Catalog: 1WHSP: VHE gammaray blazar candidates;2015yCat.35790034; http://adsabs.harvard.edu/abs/2015yCat..35790034A

-) Chang, Y.L., Arsioli, B., Giommi, P., Padovani, P.; "2WHSP: A Catalog of HE and VHE BlazarCndidates. A&A. 2017 in press; https://arxiv.org/abs/1609.05808.

-) Arsioli, B., Chang, Y.L.; Detecting New gamma-ray Sources Based on Multi-frequency Data. The Case of 1WHSPJ031423.9+061956, 2015 (AIP Conference Proceedings); MG14, 2015, Rome – IT; https://www.researchgate.net/publication/311650305_Search_for_WHSP_g-ray_counterparts_within_Fermi-LAT_data_Solving_a_case_of_source_confusion

-) Arsioli, B., Fraga, B., Giommi, P., Padovani, P., Marrese, M.; 1WHSP: an H based sample of ~1,000 VHE gamma-ray blazar candidates; A&A, (Vol 579, July, 2015); http://adsabs.harvard.edu/abs/2015A%26A...579A..34A

Meetings, conferences, seminars, schools:

- SIGRAV Graduate School in Contemporary Relativity and Gravitational Physics, Villa Olmo, Como (Italy), 21-26 May, 2012.

- 10th Agile Workshops ASDC, Rome Italy. 18, April, 2012.-Erasmus Mundus School, Nice, France, 5-8 June, 2012.

- Erasmus Mundus School, Nice, France, 3rd – 19th September, 2012.Presentation; Active Galactic Nuclei: Blazars

- Marcel Grossmann meeting, Stockholm, Sweden, 1st - 7th July, 2012.

- Magic AGN WG Meeting, Frascati, 11 to 14 February 2013 ASI Science Data Center, ESRIN

- Erasmus Mundus School, Nice, France, 15th - 31st May, 2013.Presentation; Active Galactic Nucley; Selection scheme for building large samples of HSP blazars (Candidates for TeV detection).

- The 2013 yearly ICRANet Scientific Meeting on Relativistic Astrophysics; June 3-21st, Pescara, Italy & Rome, Italy).On the Occasion of the 50th Anniversary of the Kerr solution of the Einstein's equations, in presence of Roy Kerr.

- Erasmus Mundus School, Nice, France, 2nd 2 1st September, 2013.Prepared Presentation; Active Galactic Nuclei; Building a large sample of HSP blazars, Statistical Properties, Fermi γray counterparts, and Candidates for TeV detection.

- Yerevan, Armenia - 1stScientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

- Zeldovich-100 Meeting, March 10-14, 2014, Minsk, Belarus - Subatomic particles, Nucleons, Atoms, Universe: Processes and Structure International conference in honor of Ya. B. Zeldovich 100th Anniversary

- IRAP Ph.D. Erasmus Mundus School - February 2014 Nice Winter School- February, 23 -March, 2.

- Bologna High Energy Meeting (Boehme) 2014 – April 7th to 9th

- IRAP Ph.D. Erasmus Mundus Workshop - Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches (France)

- 2nd César Latter meeting , "Supernovae, Neutron Stars, Black Holes" , 2015, Niterói- Rio De Janeiro , April 13-18

- Cross-Match Day. Science Data Center – AgenziaSpazialeItaliana; ASDC ASI, 2015. Presentation: WHSP catalogs. Drops in the Ocean.

- MG14, July 12-18, 2015, Rome – IT: Presentation: Multifrequency Data for Unveiling gamma-ray sources.

- ICRANet Brazilian Science Data Center Symposium. Federal University of Rio Grande do Sul – UFRGS. September 03, 2015. Porto Alegre, Brazil. Presentation: Science Catalogs, an Example from ASDC.

- Adriatic Workshop: Supernovae, Hypernovae and Binary Driven Hypernovae, held at ICRANet, Pescara (Italy), June 28, 2016. Presentation: The isotropic gamma-ray background: Contribution from HSP blazars to the diffuse component.

Gomes de Oliveira, Fernanda

Current position:
IRAP PhD – Erasmus Mundus
Third Cycle, 2012-2015

Publications:

-) C. L. Fryer, F. G. Oliveira, J. A. Rueda, and R. Ruffini, "On the Neutron Star-Black Hole Binaries Produced by Binary-driven Hypernovae," submitted to Phys. Rev. Lett.; arXiv:1505.02809 http://adsabs.harvard.edu/abs/2015arXiv150502809F

-) R. Ruffini, M. Muccino, M. Kovacevic, F. G. Oliveira, J. A. Rueda, C. L. Bianco, M. Enderli, A. V. Penacchioni, G. B. Pisani, Y. Wang, and E. Zaninoni, "GRB 140619B: a short GRB from a binary neutron stars merger leading to the black hole formation," ApJ, in press, 2015. http://adsabs.harvard.edu/abs/2015ApJ...808..190R

-) Oliveira, F. G.; Rueda, Jorge A.; Ruffini, R., "Gravitational Waves versus X-Ray and Gamma-Ray Emission in a Short Gamma-Ray Burst"; The Astrophysical Journal, Volume 787 (2014), 150; DOI: 10.1088/0004-637X/787/2/150. http://adsabs.harvard.edu/abs/2014ApJ...787..150O

-) Oliveira, F. G.; Rueda, Jorge A.; Ruffini, R., chapter in Gravitational Waves Astrophysics, Springer proceeding of the 3rd Session of the Sant Cugat Forum on Astrophysics, X, Gamma- rays and Gravitational Waves emission in a Short Gamma-ray Burst, 2014.

-) Oliveira, F. G.; Rueda, Jorge A.; Ruffini, R., Gravitational Waves Emission from the Short Gamma-Ray Burst 090227B pp.390-392. Nonlinear phenomena in complex systems. An Interdisciplinary Journal, Volume 17, Number 4, 2014.
(Proceeding of Zeldovich-100 meeting (http://www.j-npcs.org/abstracts/vol2014no4.html)

-) M. Muccino, R. Ruffini, M. Kovacevic, F. G. Oliveira, J. A. Rueda, C. L. Bianco, M. Enderli, A. V. Penacchioni, G. B. Pisani, Y. Wang, and E. Zaninoni, GRB 140619B: a short GRB from a neutron star merger leading to the black hole formation, proceeding of Swift: 10 Years of Discovery, 2014.

Meetings, conferences, seminars, schools:
Third Bego Rencontres - IRAP Ph.D. Erasmus Mundus school - September 8^{th}-19^{th} 2014. Oral presentation: Gravitational Waves signals from Neutron Star Binary System.

Yerevan, Armenia - 1st Scientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014. Oral presentation: Short-Gamma Ray Burst from Binary Neutron Star Merger and The orbital parameters of the Induced Gravitational Collapse

IRAP Ph.D. Erasmus Mundus Workshop - Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches (France). Oral presentation: Gravitational Waves versus Electromagnetic Emission in a sGRB Burst.

IRAP Ph.D. Erasmus Mundus School - February 2014 Nice Winter School- February, 23 - March, 2 – 2014 Oral presentation: Gravitational Waves versus Electromagnetic Emission in a sGRB Burst.

Sant Cugat - Spain – Forum on Astrophysics: Gravitational Waves Astrophysics – April 22 – 25, 2014 Oral presentation: Gravitational Waves versus Electromagnetic Emission in a sGRB Burst.

Zeldovich-100 Meeting, March 10-14, 2014, Minsk, Belarus - Subatomic particles, Nucleons, Atoms, Universe: Processes and Structure - International conference in honor of Ya. B. Zeldovich 100th Anniversary. Oral presentation: Short-Gamma Ray Burst from Binary Neutron Star Merger.

2013 yearly ICRANet Scientific Meeting on Relativistic Astrophysics – Pescara on the Occasion of the 50th Anniversary of the Kerr solution of the Einstein's equations June 3-19, 2013
IRAP Ph.D. Erasmus Mundus school - September 2nd - 20st, 2013

Second Bego Scientific Reencounter Meeting May 16th-31st, 2013 - University of Nice "Sophia Antipolis" (France). Oral presentation: Emission of Gravitational Waves from Neutron Stars originating from short GRB.

September 3-21, 2012 - IRAP Ph.D. Erasmus Mundus School, Nice, France. Oral presentation: Emission of Gravitational Waves from Binary System.

2nd César Lattes Meeting "Supernovae, Neutron Stars, Black Holes", 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22 Oral Presentation: Gravitational Waves Emission using the Effective-one-Body Formalism.

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy. Oral presentation: Neutron Star Critical Mass and Short GRBs.

14th Italian-Korean Symposium on Relativistic Astrophysics, July 20-25, 2015, Pescara, Italy. Oral presentation: Final Stages of a Neutron Star Binary System.

Maiolino, Tais

Current position:

IRAP PhD – Erasmus Mundus
Fourth Cycle, 2013-2016
University of Ferrara

Publications:

-) Castro, M.; D'Amico, F.; Braga, J.; Maiolino, T.; Pottschmidt, K.; Wilms, J.; "Confirming the thermal Comptonization model for black hole X-ray emission in the low-hard state"; Astronomy & Astrophysics, Volume 569 (2014), A82. DOI: 10.1051/0004-6361/201323290.

-)Maiolino, T.; D'Amico, F.; Braga, J.; "INTEGRAL observations of Scorpius X-1: evidence for Comptonization up to 200 keV"; Astronomy & Astrophysics, Volume 551 (2013), L2; DOI: 10.1051/0004-6361/201220677.

Meetings, conferences, seminars, schools:

Third Bego Rencontres - IRAP Ph.D. Erasmus Mundus school - September 8th-19th 2014

Yerevan, Armenia - 1stScientific ICRANet Meeting in Armenia:Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

IRAP Ph.D. Erasmus Mundus Workshop - Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches (France)

Zeldovich-100 Meeting, March 10-14, 2014, Minsk, Belarus - Subatomic particles, Nucleons, Atoms, Universe: Processes and Structure - International conference in honor of Ya. B. Zeldovich 100th Anniversary – paid by Ferrara University

IRAP Ph.D. Erasmus Mundus School – February 2014 – February, 23 - March, 2 – 2014 Nice

2nd César Lattes Meeting “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

CAPES-ICRANet Program
cycle – 2013-2016
and scientific publications

Brandt, Carlos Henrique

Position:
Capes Ph.D. Student
International Center for Relativistic Astrophysics Network – ICRANet
University “Sapienza” of Rome
Agenzia Spaziale Italiana – ASI

Outcome Institution:
Laboratório Nacional de Computação Científica
Universidade Federal do Rio Grande do Sul – UFRGS

Publications:
I am currently working on a multi-wavelength data set ever Sloan's 82th stripe (<http://classic.sdss.org/legacy/stripe82.html>). Twelve catalogs, covering from Radio to X-ray wavebands are currently described, the quality assessment of the data - in the particular chosen region - should be the very next step. Apart from that, a computational work regarding HEASoft's xrtpipeline (used for Swift XRT's data reduction) performance is being carried out. The goal is to improve the performance in the most expensive spots.

Software: 'booq' is a library for high-level handling of astronomical catalogs. The library implements support for IVOA UCDs metadata, developed to support automation and machine-capable data description. Booq can handle large amounts of data and uniform sampling on-disk. Data visualization if done through interactive plots. Booq is open-source and built over Astropy API.
'booq' is available at http://chbrandt.github.io/booq/

-) Makler, M.; Furlanetto, C.; Santiago, B. X.; Caminha, G. B.; Cypriano, E.; Cibirka, N.; Pereira, M. E. S.; Bom, C. R. D.; Lima, M. P.; Brandt, C. H.; Neto, A. F.; Estrada, J.; Lin, H.; Hao, J.; McKay, T. M.; da Costa, L. N.; Maia, M. A. G.; “The SOAR Gravitational Arc Survey”, published in XIV Latin American Regional IAU Meeting (Eds. A. Mateus, J. Gregorio-Hetem & R. Cid Fernandes) Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias) Vol. 44, pp. 180-181 (2014) 2014RMxAC..44..180M

-) Bom, C. R.; Makler, M.; Albuquerque, M. P.; Brandt, C. H., “A Neural Network Gravitational Arc Finder Based on the Mediatrix Filamentation Method”, Submitted to A&A, eprint arXiv:1607.04644, 2016

Meetings, conferences, seminars, schools:
IVOA Interoperability Workshop; 19--23 May 2014; Madrid, Spain

First Scientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe; 30 June--4 July 2014; Yerevan, Armenia 2014

IRAP Ph.D. Erasmus Mundus Workshop - Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches, France

IVOA Interoperability Workshop - Spring 2015; 14--19 June, 2015; Sexten, Italy

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Guimarães Carvalho, Gabriel

Position:
Capes Ph.D. Student
International Center for Relativistic Astrophysics Network – ICRANet
University of Rome "Sapienza"

Outcome Institution:
Universidade Federal de Pernambuco – UFPE

Publications:
-) D. Bini, G.G. Carvalho and Andrea Geralico; " Scalar field self-force effects on a particle orbiting a Reissner-Nordström black hole", Phys. Rev. D 94, 124028(2016).

-E. Bittencourt, I. P. Lobo, G.G. Carvalho - “On the disformal invariance of the Dirac equation” (Class. Quantum. Grav. 32, 185016) (published)

-G.G . Carvalho , I. P. Lobo and E. Bittencourt - “Extended disformal approach in the scenario of rainbow gravity” (Physical Review D 93, 044005) (published)

Meetings, conferences, seminars, schools:
IRAP Ph.D. Erasmus Mundus School - February 2014 Nice Winter School- February, 23 - March, 2 – 2014

Zeldovich-100 Meeting, March 10-14, 2014, Minsk, Belarus - Subatomic particles, Nucleons, Atoms, Universe: Processes and Structure - International conference in honor of Ya. B. Zeldovich 100thAnniversary

Yerevan, Armenia - 1stScientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

Third Bego Rencontres - IRAP Ph.D. Erasmus Mundus school - September 8th-19th 2014

IRAP Ph.D. Erasmus Mundus Workshop - Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches, France

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Pereira Lobo, Iarley

Position:
Capes Ph.D. Student
International Center for Relativistic Astrophysics Network – ICRANet
University “Sapienza” of Rome

Outcome Institution:
Universidade Federal da Paraíba – UFPB

Publications:

-) I. P. Lobo, A. B. Barreto and C. Romero, "Space-time singularities in Weyl manifolds”; published in European Physical Journal. C, v. 75, p. 448, 2015.

-) E. Bittencourt, I. Lobo and G. G. Carvalho, "On the disformal invariance of the Dirac equation”; published in Classical and Quantum Gravity, v. 32, p. 185016, 2015.

-) G. G. Carvalho, I. P. Lobo and E. Bittencourt, “Extended disformal approach in the scenario of rainbow gravity”; Physical Review D, v. 93, 044005, 2016. arXiv:1511.00495

-) I. P. Lobo and G. Palmisano, “Geometric interpretation of Planck-scale-deformed co-products”; International Journal of Modern Physics: Conference Series, v. 41, p. 1660126, 2016, arXiv:1612.00326.

-) I. P. Lobo and G. Palmisano; "Geometric picture of DSR-Relativistic theories with de Sitter and anti-de Sitter momentum spaces”; submitted to the proceedings of 14th Marcel Grossmann meeting.

-) I. P. Lobo, N. Loret and F. Nettel, *Rainbows without unicorns: Metric structures in theories with Modified Dispersion Relations,* arXiv:1610.04277, submitted to Class. Quantum Grav.

-) I. P. Lobo, *Frame transformations in Brans-Dicke theory from the viewpoint of Weyl geometry,* arXiv:1610.05004, submitted to Int. J. Mod. Phys. D.

-) I. P. Lobo, N. Loret and F. Nettel, *Investigation on Finsler geometry as a generalization to curved spacetime of Planck-scale-deformed relativity in the de Sitter case,* arXiv:1611.04995, submitted to Phys. Rev. D.

Meetings, conferences, seminars, schools:

Third Bego Rencontres - IRAP Ph.D. Erasmus Mundus school - September 8th-19th 2014

Yerevan, Armenia - 1stScientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

IRAP Ph.D. Erasmus Mundus Workshop - Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches (France)

9th Alexander Friedmann International Seminar - June 21th-27th 2015. Talk: "Peculiar Properties of 3D gravity, the Magueijo-Smolin model and other DSR-relativistic pictures with anti-de Sitter momentum space"

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy. Talk: "Geometric picture of DSR-relativistic theories with de Sitter and anti-de Sitter momentum spaces"

Quantum Gravity Meeting - July 20th-23rd 2015. Talk: "Geometric picture of DSR-relativistic theories with de Sitter and anti-de Sitter momentum spaces"

16th British Gravity Meeting, University of Nottingham, UK

Fourth Bego Rencontres, IRAP Ph.D. Erasmus Mundus school, May 30 - June 3, 2016, Villa Ratti, Nice

Experimental Search for Quantum Gravity, Frankfurt, Sep 19-23, 2016, Frankfurt Institute for Advanced Studies (FIAS), Frankfurt, Germany.

Bartosch Caminha, Gabriel

Position:
Capes Postdoctoral Student
University of Ferrara

Outcome Institution:
Centro Brasileiro de Pesquisas Físicas – CBPF

Publications:

-) G. B. Caminha,W. Karman, P. Rosati, K. I. Caputi, F. Arrigoni Battaia, et al. (+5 co-authors) *Discovery of a faint, star-forming, multiply lensed, Lyman-alpha blob.* A&A in press (arXiv:1512.05655, ADS link)

-) G. B. Caminha, C. Grillo, P. Rosati, I. Balestra, W. Karman, et al. (+35 co-authors) *CLASH-VLT: A highly precise strong lensing model of the galaxy cluster RXC J2248.7−4431 (Abell S1063) and prospects for cosmography.* A&A, 587, A80, 2016 (ADS link)

-) Dark Energy Survey Collaboration: T. Abbott, F. B. Abdalla, S. Allam, J. Aleksic, A. Amara, et al. (+135 co-authors including G. B. Caminha) *The Dark Energy Survey: more than dark energy - an overview.* MNRAS, 460, 1270, 2016 (ADS link)

-) E. Vanzella, I. Balestra, M. Gronke, W. Karman, G. B. Caminha et al. (+9 co-authors) *Illuminating gas in-/outflows in the MUSE deepest fields: discovery of Ly-alpha nebulae around forming galaxies at* z _ 3:3. MNRAS, in press (arXiv:1607.03112, ADS link)

-) E. Vanzella, S. De Barros, G. Cupani,W. Karman, M. Gronke, et al. (+27 co-authors including G. B. Caminha) *High-resolution spectroscopy of a young, low-metallicity optically-thin* L = 0:02L_ *star-forming galaxy at* z = 3:12. ApJ, 821, L27, 2016 (ADS link)

-) C. Grillo, W. Karman, S. H. Suyu, P. Rosati, I. Balestra, et al. (+13 co-authors including G. B. Caminha) *The story of supernova "Refsdal" told by MUSE.* ApJ, 822, 78, 2016 (ADS link)

-) I. Balestra, A. Mercurio, B. Sartoris, M. Girardi, C. Grillo, et al. (+31 co-authors including G. B. Caminha) *CLASH-VLT: Dissecting the Frontier Fields Galaxy Cluster MACS J0416.1−2403 with _800 Spectra of Member Galaxies.* ApJS, 224, 33, 2016 (ADS link)

-) L. Pizzuti, B. Sartoris, S. Borgani, L. Amendola, K. Umetsu, et al. (+11 co-authors including G. B. Caminha) *CLASH-VLT: Testing the Nature of Gravity with Galaxy Cluster Mass Profiles.* J. Cosmology Astropart. Phys., 4, 23, 2016 (ADS link)

-) W. G. Parry, C. Grillo, A. Mercurio, I. Balestra, P. Rosati, et al. (+6 co-authors including G. B. Caminha) *Dark matter fraction of low-mass cluster members probed by galaxy-scale strong lensing.* MNRAS, 458, 1493, 2016 (ADS link)

-) T. Treu, G. Brammer, J. M. Diego, C. Grillo, P. L. Kelly et al. (+23 co-authors including G. B. Caminha) *"Refsdal" Meets Popper: Comparing Predictions of the Re-appearance of the Multiply Imaged Supernova Behind MACSJ1149.5+2223.* ApJ, 817, 60, 2016 (ADS link)

-) B. Nord, E. Buckley-Geer, H. Lin, H. T. Diehl, J. Helsby et al. (+87 co-authors including G. B. Caminha) *Observation and Confirmation of Six Strong Lensing Systems in The Dark Energy Survey Science Verification Data.* ApJ, 827, 51, 2016 (ADS link)

-) M. Annunziatella, A. Mercurio, A. Biviano, M. Girardi, M. Nonino, et al. (+17 co-authors including G. B. Caminha) *CLASH-VLT: Environment-driven evolution of galaxies in the z = 0.209 cluster Abell 209.* A&A, 585, A160, 2015 (ADS link)

-) M. Girardi, A. Mercurio, I. Balestra, M. Nonino, A. Biviano, et al. (+33 co-authors including G. B. Caminha) *CLASH-VLT: Substructure in the galaxy cluster MACS J1206.2-0847 from kinematics of galaxy populations.* A&A, 579, A4, 2015 (ADS link)

-) C. Grillo, S. H. Suyu, P. Rosati, A. Mercurio, I. Balestra et al. (+23 co-authors including G. B. Caminha) *CLASH-VLT: Insights on the Mass Substructures in the Frontier Fields Cluster MACS J0416.1-2403 through Accurate Strong Lens Modeling.* ApJ, 800, 38, 2015 (ADS link)

Meetings, conferences, seminars, schools:

IRAP Ph.D. Erasmus Mundus School - February 2014 Nice Winter School -February, 23 - March, 2 – 2014

2nd César Lattes Meeting "Supernovae, Neutron Stars, Black Holes", 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Batista dos Santos, Grasiele

Position:
Temporary Professor at UNIFAL-MG

Previous positions:
Capes Postdoctoral Student
International Center for Relativistic Astrophysics Network – ICRANet
University of Rome "Sapienza"
Postdoctoral student at UNIFEI

Outcome Institution:
Centro Brasileiro de Pesquisas Físicas – CBPF

Publications:
-) G. B. Santos, G. Gubitosi and G. Amelino-Camelia, " On the initial singularity problem in rainbow cosmology", accepted for publication in JCAP. http://adsabs.harvard.edu/abs/2015JCAP...08..005S

-) Santos, G. B., Bittencourt, E. and Salim, J. M., *Scalar Perturbations in a Friedmann-like Metric with Non-null Weyl Tensor,* JCAP 1506 (2015) 013. doi:10.1088/1475-7616/2015/06/013 http://adsabs.harvard.edu/abs/2015JCAP...06..013S

-) Bittencourt, E.; Salim, J.; Santos, G. B.; *Magnetic Fields and the Weyl Tensor in the Early Universe;* Gen. Relat. Grav. **46**, (2014) 1790. doi:10.1007/s10714-014-1790-3 http://adsabs.harvard.edu/abs/2014GReGr..46.1790B

Meetings, conferences, seminars, schools:
Zeldovich-100 Meeting, March 10-14, 2014, Minsk, Belarus - Subatomic particles, Nucleons, Atoms, Universe: Processes and Structure - International conference in honor of Ya. B. Zeldovich 100th Anniversary

Yerevan, Armenia - 1st Scientific ICRANet Meeting in Armenia:Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

"SIGRAV School: Gravity and the Quantum", 1-6 June 2014, Como, Italy.

"SW8: Hot topics in modern cosmology", 11-17 August 2014, Cargese, France.

"Conceptual and technical challenges for Quantum Gravity", 8-12 September 2014, Rome, Italy.

"Quantum Gravity Theory and Phenomenology", 20-23 July 2015, Rome, Italy.

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Camargo Rodrigues de Lima, Rafael

Position:

Capes Postdoctoral Student
International Center for Relativistic Astrophysics Network – ICRANet
Professor at UDESC (Florianópolis – SC)

Outcome Institution:

Universidade Federal de Santa Catarina – UFSC

Publications:

-) Jaziel G. Coelho, Rafael C. R. de Lima, Diego L. Caceres, Jorge Rueda, Remo Ruffini, "On the nature of some SGRs and AXPs as rotation-powered neutron stars" - A&A,

-) Diego L. Caceres, Sheyse de Carvalho, Jaziel G. Coelho, Jorge Rueda, Remo Ruffini, "Thermal X-ray emission from massive, fast rotating, highly magnetized white dwarfs" - MNRAS,

-) R. Camargo, F. Cipolletta, J. A. Rueda, R. Ruffini; “On the accuracy of the slow-rotation approximation in the description of neutron stars”; to be submitted.

-) D. L. Cáceres, R. Camargo, J. G. Coelho, J. A. Rueda, R. Ruffini; “CXOU J1647: canonical white dwarf and neutron star versus magnetar”; to be submitted.

-) D. L. Cáceres, R. Camargo,J. G. Coelho, J. A. Rueda, R. Ruffini; “SGRs and AXPs as rotation-powered neutron stars and white dwarfs”; submitted to ApJ.

-)R. Camargo, D. P. Menezes, J. A. Rueda, R. Ruffini; “Rapidly rotating neutron stars with relativistic mean-field hadronic models satisfying nuclear matter constraints”; in preparation.

-)R. Camargo, F. Cipolletta, D. P. Menezes, J. A. Rueda, R. Ruffini; “Slowly versus rapidly rotating neutron stars with relativistic mean-field hadronic models”; in preparation.

-)R. Camargo, J. A. Rueda,R. Ruffini, C. A. Z. Vasconcellos; “Rapidly rotating neutron stars with strong sigma-hyperon repulsion”; in preparation.

-)R. Camargo, J. A.Rueda, R. Ruffini, C. A. Z. Vasconcellos; “The effects of hyperons on the structure of rapidly rotating neutron stars”; in preparation.

-) R. C. R. de Lima, J. G. Coelho, J. A. Rueda, M. Malheiro, R. Ruffini “Analysis of the Properties of SGRs and AXPs with Realistic Neutron Star Configurations”, Proc. of the 2nd César Latter meeting, “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

Meetings, conferences, seminars, schools:

Third Bego Rencontres -IRAP Ph.D. Erasmus Mundus school - September 8th-19th, 2014 Nice

Yerevan, Armenia - 1st Scientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

IRAP Ph.D. Erasmus Mundus Workshop - Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches (France)

2nd César Lattes Meeting "Supernovae, Neutron Stars, Black Holes", 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Jaziel Goulart Coelho

Position:

Postdoctoral student at INPE
Capes Postdoctoral Student
International Center for Relativistic Astrophysics Network (ICRANet)
University of Rome "Sapienza"

Outcome Institution:

Instituto Tecnológico de Aeronáutica - ITA

Publications:

-) J. G. Coelho, R. M. Marinho, M. Malheiro, R. Negreiros, D. L. Cáceres, J. A. Rueda, R. Ruffini; "Dynamical instability of white dwarfs and breaking of spherical symmetry under the presence of extreme magnetic fields";ApJ 794, 86 (2014). http://adsabs.harvard.edu/abs/2014ApJ...794...86C

-) Pereira, Jonas P., Rueda, Jorge A., Coelho, Jaziel G.; "Stability of thin-shell interfaces inside compact stars", Phys. Rev. D. 90, 123011 (2014) http://adsabs.harvard.edu/abs/2014PhRvD..90l3011P

-) Cáceres, D. L. ; de Carvalho, Sheyse ; Coelho, Jaziel G. ; Rafael C. R. de Lima ; Rueda, Jorge A. "Thermal X-ray emission from massive, fast rotating, highly magnetized white dwarfs". Monthly Notices of the Royal Astronomical Society (Print), vol. 465, issue 4, pp. 4434-4440. http://dx.doi.org/10.1093/mnras/stw3047

-) Coelho, Jaziel G.; Cáceres, D. L. ; Rafael C. R. de Lima ; Malheiro, M. ; Rueda, Jorge A. ; Ruffini, R. "The rotation-powered nature of some soft gamma-ray repeaters and anomalous X-ray pulsars" Astronomy & Astrophysics (Berlin. Print), v. -, p. -, 2016. DOI: http://dx.doi.org/10.1051/0004-6361/201629521

-) Coelho, Jaziel g.; Pereira, Jonas p. ; Araujo, José c. N. De. "The influence of quantum vacuum friction on pulsars". Astrophysical Journal (Online), v. 823, p. 97, 2016.

-) De Araujo, José C.N. ; Coelho, Jaziel G. ; Costa, Cesar A. "Gravitational wave emission by the high braking index pulsar PSR J1640-4631". Journal of Cosmology and Astroparticle Physics, v. 2016, p. 023-023, 2016.

-) Lobato, Ronaldo V. ; Malheiro, Manuel ; Coelho, Jaziel G. . Magnetars and white dwarf pulsars. International Journal of Modern Physics D, v. 25, p. 1641025, 2016.

-) De Araujo, José C. N. ; Coelho, Jaziel G. ; Costa, Cesar A. . Gravitational waves from pulsars with measured braking index. European Physical Journal. C, Particles and Fields (Print), v. 76, p. 481, 2016.

-) De Araujo, José C. N. ; Coelho, Jaziel G. ; Costa, César A. "Gravitational Waves From Pulsars And Their Braking Indices: The Role Of A Time Dependent Magnetic Ellipticity" Astrophysical Journal (Online), v. 831, p. 35, 2016.

-) COELHO, JAZIEL G.; CÁCERES, D. L. ; Rafael C. R. de Lima ; Malheiro, M. ; RUEDA, JORGE A. ; RUFFINI, R. . The rotation-powered nature of some soft gamma-ray repeaters and anomalous X-ray pulsars. Astronomy & Astrophysics (Berlin. Print), v. -, p. -, 2016. DOI: http://dx.doi.org/10.1051/0004-6361/201629521

-) D. L. Cáceres, R. Camargo, J. G. Coelho, J. A. Rueda, R. Ruffini; "CXOU J1647: canonical white dwarf and neutron star versus magnetar"; To be submitted

-) D. L. Cáceres, R. Camargo,J. G. Coelho, J. A. Rueda, R. Ruffini; "SGRs and AXPs as rotation-powered neutron stars and white dwarfs"; submitted to ApJ.

Meetings, conferences, seminars, schools:

IRAP Ph.D. Erasmus Mundus Workshop - Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches (France)

Sant Cugat - Spain – Forum on Astrophysics: Gravitational Waves Astrophysics – April 22 – 25, 2014

Yerevan, Armenia - 1st Scientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

Machado de Oliveira Fraga, Bernardo

Position:
IRAP PhD – Erasmus Mundus – First Cycle, 2010-2013
Capes Postdoctoral Student
University of Rome "Sapienza"
International Center for Relativistic Astrophysics Network – ICRANet
Postdoctoral student at CBPF
Currently: FAPERJ postdoctoral fellowship at CBPF

Outcome Institution:
University of Rome "Sapienza"
International Center for Relativistic Astrophysics Network – ICRANet

Publications:

-) Turriziani, S.; Fraga, B.; Giommi, P.; A new complete sample of X-ray selected Swift/SDSS faint blazars and blazar candidates, to be submitted to A&A, in preparation

-) Fraga, Bernardo; Giommi, Paolo; Turriziani, Sara A sample of Swift/SDSS faint blazars. AIP Conference Proceedings, Volume 1693, Issue 1, 2015

-) Arsioli, B.; Fraga, B.; Giommi, P.; Padovani, P.; Marrese, P. M. 1WHSP: An IR-based sample of ~1000 VHE γ-ray blazar candidates, Astronomy & Astrophysics, Volume 579, id.A34, 11 pp., 2015
http://adsabs.harvard.edu/abs/2015A%26A...579A..34A

-) Fraga, Bernardo M. O.; Argüelles, Carlos; Ruffini, Remo; Siutsou, Ivan. Semi-degenerate Self-Gravitating System of Fermion as Dark Matter on Galaxies i: Universality Laws, Proceedings of the MG13 Meeting on General Relativity, 2015

-) Argüelles, Carlos R.; Ruffini, Remo; Fraga, Bernardo M. O. Critical configurations for a system of semi-degenerate fermions, Journal of the Korean Physical Society, Volume 65, Issue 6, pp.809-813., 2014
http://adsabs.harvard.edu/abs/2014JKPS...65..809A

-) Argüelles, Carlos R.; Ruffini, Remo; Siutsou, Ivan; Fraga, Bernardo. On the distribution of dark matter in galaxies: Quantum treatments, Journal of the Korean Physical Society, Volume 65, Issue 6, pp.801-804, 2014
http://adsabs.harvard.edu/abs/2014JKPS...65..801A

-) Ruffini, Remo; Argüelles, C. R.; Fraga, B. M. O.; Geralico, A.; Quevedo, H.; Rueda, J. A.; Siutsou, I. Black Holes in Gamma Ray Bursts and Galactic Nuclei, international Journal of Modern Physics D, Volume 22, Issue 11, 2013

-) Fraga, Bernardo M. O.; Argüelles, Carlos R.; Ruffini, Remo. Self-Gravitating System of Semidegenerated Fermions as Central Objects and Dark Matter Halos in Galaxies, international Journal of Modern Physics: Conference Series, Volume 23, pp. 357-362, 2013

-) Fabris, Júlio C.; Fraga, Bernardo; Pinto-Neto, Nelson; Zimdahl, Winfried. Transient cosmic acceleration from interacting fluids, ournal of Cosmology and Astroparticle Physics, Issue 04, 2010

-) Pinto-Neto, Nelson; Fraga, Bernardo M. O. Cosmic acceleration from interaction of ordinary fluids, General Relativity and Gravitation, Volume 40, Issue 8, pp.1653-1662, 2008

Meetings, conferences, seminars, schools:

Attendance to the Erasmus Mundus School, Nice, France (09/2010).

Attendance to the 25th Symposium of Relativistic Astrophysics Texas 2010, Heidelberg, Germany (12/2010).

Attendance to the IRAP PhD. Erasmus Mundus Workshop, Recent News from the MeV, GeV and TeV Gamma-Ray Domains, Pescara, Italy (03/2011). Oral Presentation: CosmologicalConstraintson 'ino' masses and quantum statistics

Attendance to the IRAP PhD. Erasmus Mundus Workshop, From Nuclei to White Dwarfs and Neutron Stars, Les Houches, France (04/2011).
Attendance to the Erasmus Mundus School, Nice, France (05/2011).

Attendance to the Erasmus Mundus School, Nice, France (09/2011).
Attendance to the 3rd Galileo-Xu Guangqi Meeting, Beijing, China (10/2011).Oral presentation: Self-Gravitating system of fermions as central objects and dark matter halos in galaxies.

Attendance to the XIII Marcel Grossman Meeting, Stockholm, Sweden (07/2012).Oral presentation: Semi-degenerate self-gravitating system of fermions as Dark Matter on galaxies I: Universality laws.

Attendance to the Erasmus Mundus School, Nice, France (09/2012).Oral presentation: Self-gravitating system of fermions as Dark Matter on galaxies.

Attendance to "Current Issues on Relativistic Astrophysics", Seoul, South Korea (11/12). Oral Presentation: Self-gravitating system of fermions as Dark Matter on galaxies.

Attendance to the 7th Yearly ICRANet scientific meeting on Relativistic Astrophysics on the Occasion of the 50th Anniversary of the Kerr solution of the Einstein's equations, Pescara, Italy (06/2013).Oral Presentations: Self-gravitating system of fermions as dark matter halos and central objects in galaxies; A multi-wavelength catalog of HSP blazars based on the WISE all-sky survey.

Attendance to the 1st URCA meeting, Rio de Janeiro, Brazil (06/2013).Oral Presentations: Self-gravitating system of fermions as dark matter in galaxies; A multi-wavelength catalog of HSP blazars based on the WISE all-sky survey.

Attendance to the 13th Italo-Korean Meeting, Seoul, South Korea - July 15-19 2013, Ewha Womans University, Oral presentation: Self-gravitating system of fermions as dark matter in galaxies.

Yerevan, Armenia - 1st Scientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

2nd César Lattes Meeting "Supernovae, Neutron Stars, Black Holes", 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Silva Bittencourt, Eduardo Henrique

Position:

Capes Postdoctoral Student
International Center for Relativistic Astrophysics Network – ICRANet
University of Rome "Sapienza"
Postdoctoral student at UNIFEI

Outcome Institution:

Centro Brasileiro de Pesquisas Físicas – CBPF

Publications:

-) Bini, Donato, Bittencourt, Eduardo, Geralico, Andrea, Jantzen, Robert T, slicing black hole spacetimes. International Journal of Geometric Methods in Modern Physics, Volume 12, Issue 7, id. 1550070, 2015. http://adsabs.harvard.edu/abs/2015IJGMM..1250070B

-) Bini, D.; Bittencourt, E.; Geralico, A.; Massless Dirac particles in the vacuum C-metric; accepted for publication in Classical and Quantum Gravity http://adsabs.harvard.edu/abs/2015arXiv150904878B

-) Carvalho, Gabriel G. ; Lobo, Iarley P. ; Bittencourt, Eduardo “Extended disformal approach in the scenario of rainbow gravity”, Physical Review D, v. 93, p. 044005, 2016.

-) Bittencourt, E; Moschella, U. ; Novello, M. ; Toniato, J.'D. “More about scalar gravity” Physical Review D, v. 93, p. 124023, 2016.

-) Bittencourt, e; Pereira, Jonas P ; Smolyaninov, Igor I ; Smolyaninova, Vera N. “The flexibility of optical metrics” Classical and Quantum Gravity (Print), v. 33, p. 165008, 2016.

-) Santos, G.B. ; Bittencourt, E ; Salim, J.M. “Scalar perturbations in a Friedmann-like metric with non-null Weyl tensor”. Journal of Cosmology and Astroparticle Physics, v. 2015, p. 013-013, 2015.

-) Bittencourt, Eduardo; Lobo, Iarley P ; Carvalho, Gabriel G . “On the disformal invariance of the Dirac equation” Classical and Quantum Gravity (Print), v. 32, p. 185016, 2015.

-) Novello, Mario ; Bittencourt, Eduardo. “Metric Relativity and the Dynamical Bridge: Highlights of Riemannian Geometry in Physics” Brazilian Journal of Physics (Impresso), v. 45, p. 756-805, 2015.

Meetings, conferences, seminars, schools:

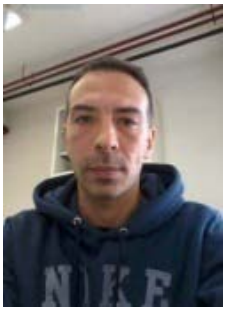
Zeldovich-100 Meeting, March 10-14, 2014, Minsk, Belarus - Subatomic particles, Nucleons, Atoms, Universe: Processes and Structure - International conference in honor of Ya. B. Zeldovich 100thAnniversary

Yerevan, Armenia - 1stScientific ICRANet Meeting in Armenia:Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

2012 – Scientific visit to ICRANet

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Belvedere, Riccardo



Position:
Capes Postdoctoral Student
ICRANet - Rio de Janeiro at CBPF
Currently FAPERJ postdoctoral fellowship at CBPF

Outcome Institution:
IRAP PhD – University of Rome "Sapienza"

Publications:
-) R. Belvedere, K. Boshkayev, Jorge A. Rueda, R. Ruffini; "Uniformly rotating neutron stars in the global and local charge neutrality cases"; Nuclear Physics A 921, 33 (2014) http://adsabs.harvard.edu/abs/2014NuPhA.921...33B

-)R. Belvedere, Jorge A. Rueda, R. Ruffini; "Suitability of analytical formulas for the determination of the neutron star keplerian frequency and moment of inertia"; submitted to Phys. Rev. C.

-) R. Belvedere, J. A. Rueda, and R. Ruffini, “On the Magnetic Field of Pulsars with Realistic Neutron Star Configurations,” ApJ 799, 23 (2015) http://adsabs.harvard.edu/abs/2015ApJ...799...23B

-) R. Belvedere, S. B. Duarte, Jorge A. Rueda, R. Ruffini; "Rapidly rotating neutron stars with extended hadronic nuclear models with delta-mesons"; in preparation.

-) R. Belvedere, R. Belvedere, J. A. Rueda, and R. Ruffini, "Realistic neutron star configurations and the magnetic field of pulsars"; proceedings of the 2nd ICRANet César Lattes Meeting - Supernovae, Neutron Stars and Black Holes, Rio de Janeiro, Brazil, April 13-18, 2015. Submitted to AIP Conference Proceedings.

-) R. Belvedere, J. A. Rueda, and R. Ruffini, "High-B pulsar class with not so high magnetic field"; proceedings of the XIV Marcel Grossmann Meeting, Rome, Italy, July 12-18, 2015. Submitted to WSPC Proceedings.

-) R. Belvedere, J. A. Rueda, R. Ruffini, High-B Pulsar Class with not so High Magnetic Field , Proc. of the 2nd César Latter meeting, “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

Meetings, conferences, seminars, schools:
IRAP Ph.D. Erasmus Mundus School - February 2014 Nice Winter School -February, 23 - March, 2 - 2014

-) ICRA10, Rio de Janeiro, Brazil, April 7-11, 2014.

Yerevan, Armenia - 1st Scientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

International Conference - Physics of Neutron Stars – 2014 Commemorating the 100th birthday of Yakov Borisovich Zel'dovich - July 28 — August 1, 2014, St. Petersburg, Russia

2nd César Lattes Meeting “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22;

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Martins de Carvalho, Sheyse

Position:
Capes Postdoctoral Student
UFF - Universidade Federal Fluminense
IRAP PhD – Erasmus Mundus – First Cycle, 2010-2013
Professor at UFT

Outcome Institution:
Erasmus Mundus Student
University of Rome “Sapienza”

Publications:

-)S. M. de Carvalho, R. Negreiros, J. A. Rueda, and R. Ruffini, “Thermal evolution of neutron stars with global and local neutrality,” Phys. Rev. C 90, 055804 (2014).
http://adsabs.harvard.edu/abs/2014PhRvC..90e5804D

-)S. M. Carvalho, R. Negreiros, Jorge A. Rueda, R. Ruffini; “Strange stars versus globally neutral neutron stars: structure and cooling”; to be submitted.

-) D. L. Cáceres, S. M. Carvalho, J. G. Coelho, L. Izzo, S. O. Kepler, M. Malheiro, J. A. Rueda, R. Ruffini; “Observational signatures of massive, fast rotating, highly magnetized white dwarfs”; in preparation.

-) S. M. de Carvalho, R. Negreiros, M. Orsaria, G. A. Contrera, F. Weber and W. Spinella “Thermal evolution of hybrid stars within the framework of a non-local NJL model” Submitted to Physical Review C.

-) S. M. Carvalho, M. Rotondo, Jorge A. Rueda, R. Ruffini; “Relativistic Feynman-Metropolis-Teller treatment at finite temperatures”; Physical Review C 89, 015801 (2014)
http://adsabs.harvard.edu/abs/2014PhRvC..89a5801D

-)S. M. de Carvalho, J. A. Rueda, and R. Ruffini, “On the cooling of globally-neutral neutron stars,” Journal of Korean Physical Society 65, 861 (2014). http://adsabs.harvard.edu/abs/2014JKPS...65..861D

-) S. M. de Carvalho, R. Negreiros, Jorge A. Rueda, R Ruffini, Thermal Evolution of Globally Neutral Neutron Stars, Proc. of the 2nd César Latter meeting, “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

Meetings, conferences, seminars, schools:

-Recent News from the Mev, GeV and TeV Gamma-Ray Domains, March 21-26, 2011 Pescara (Italy)

-From Nuclei to White Dwarfs and Neutron Stars, April 3-8, 2011 Les Houches (France)

-IRAP Ph.D. Erasmus Mundus school, May 25th - June 10th, 2011

- IRAP Ph.D. Erasmus Mundus school, September 5th - 16th, 2011

- Third Galileo - Xu Guangqi Meeting, October 11-15, 2011

- Erasmus Mundus School, Nice, France, 5-8 June, 2012.

- Marcel Grossmann meeting, Stockholm, Sweeden, 1st - 7th July, 2012

- Erasmus Mundus School, Nice, France, 3rd – 19th September, 2012.

- Current Issues on Relativistic Astrophysics - November 5-6, 2012 - Seoul (South Korea)

- 2013 yearly ICRANet Scientific Meeting on Relativistic Astrophysics on the Occasion of the 50th Anniversary of the Kerr solution of the Einstein's equations June 3-19, 2013 – ICRANet –

13th Italian-Korean meeting on Relativistic Astrophysics - July 15-19 2013, Ewha Womans University

The first URCA meeting on Relativistic Astrophysics - ICRANet Rio - 24-29 June 2013 – Rio de Janeiro

2012 December – Mission to Brazil

- Scientific collaboration with Jorge Rueda and Remo Ruffini on Pescara, Italy. (July, 2014)

2nd César Lattes Meeting "Supernovae, Neutron Stars, Black Holes", 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22 (participation in local organizing committee)

Penacchioni, Ana Virginia

Position:
Postdoctoral position at Siena University/ASI(ASDC)

Outcome Institution:
Capes Postdoctoral Student
Instituto Nacional de Pesquisas Espaciais – INPE

EMJD Student
University “Sapienza” of Rome

Publications:

-) R. Ruffini, M. Muccino, M. Kovacevic, F. G. Oliveira, J. A. Rueda, C. L. Bianco, M. Enderli, A. V. Penacchioni, G. B. Pisani, Y. Wang, and E. Zaninoni, “GRB 140619B: a short GRB from a binary neutron stars merger leading to the black hole formation,” ApJ 808, 190, (2015).
http://adsabs.harvard.edu/abs/2015ApJ...808..190R

-) L. Amati et al. ; “GAME: GRB and All-sky Monitor Experiment”; Int.J. Mod.Phys.D23, 1430010 (2014)
http://adsabs.harvard.edu/abs/2014IJMPD..2330010A

-) R. Ruffini, Y. Wang, M. Enderli, M. Muccino, M. Kovacevic, C. L. Bianco, A. V. Penacchioni, G. B. Pisani, and J. A. Rueda, “GRB 130427A and SN 2013cq: A Multi-wavelength Analysis of An Induced Gravitational Collapse Event,” ApJ 798, 10 (2015) http://adsabs.harvard.edu/abs/2015ApJ...798...10R

-) R. Ruffini, L. Izzo, M. Muccino, Jorge A. Rueda, C. Barbarino, C.L. Bianco, H. Dereli, M. Enderli, A.V. Penacchioni, G.B. Pisani, Y. Wang; “Induced Gravitational Collapse in the BATSE era: the case of GRB 970828”; Astronomy Reports, Volume 59, Issue 7, pp.626-638.
http://adsabs.harvard.edu/abs/2015ARep...59..626R

-) Penacchioni, A.V., Braga, J., Castro, M., D’Amico, F., “Telescope performance and image simulations of the balloon-borne coded-mask protoMIRAX experiment”, JournalJHEAP 5-6, 2015, 22-29.
DOI: 10.1016/j.jheap.2015.01.001 http://adsabs.harvard.edu/abs/2015JHEAp...5...22P

-) João Braga , Flavio D’Amico, Manuel C. Ávila, Ana V. Penacchioni, José R. Sacahui, Valdivino A. de Santiago Jr ., Fátima Mattiello -Francisco, Cesar Strauss , Márcio Fialho ; “The protoMIRAX Hard X-ray Imaging Balloon Experiment” Astronomy & Astrophysics 580, A108 (2015).
http://adsabs.harvard.edu/abs/2015A%26A...580A.108B

-) R. Ruffini, M. Muccino, C.L. Bianco, M. Enderli, L. Izzo, M. Kovacevic, A.V. Penacchioni, G.B. Pisani, J.A. Rueda, Y. Wang; “On binary-driven hypernovae and their nested late X-ray emission”; Astronomy & Astrophysics Letters 565, L10 (2014). http://adsabs.harvard.edu/abs/2014A%26A...565L..10R

-) Penacchioni, A.V., Braga, J., Castro, M.A, Sacahui, J.R. D’Amico, F.; Telescope Performance And Image Simulations Of The Balloon-borne Coded-mask protoMIRAX Experiment, Proc. of the 2nd César Latter meeting, “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

- Pisani, G. B.; Ruffini, R.; Aimuratov, Y.; Bianco, C. L.; Kovacevic, M.; Moradi, R.; Muccino, M.; Penacchioni, A. V.; Rueda, J. A.; Shakeri, S.; Wang, Y., "On the Universal Late X-Ray Emission of Binary-driven Hypernovae and Its Possible Collimation", ApJ, 833, 159P (2016), DOI: 10.3847/1538-4357/833/2/159

- Adriani, O. and the CALET collaboration, "CALET Upper Limits on X-Ray and Gamma-Ray Counterparts of GW151226", ApJ,829L,20A (2016), DOI: 10.3847/2041-8205/829/1/L20

-Sacahui, J. R.; Penacchioni, A. V.; Braga, J.; Castro, M. A.; D'Amico, F., "MIRAX sensitivity for Gamma Ray Bursts", JHEAp...9...16S (2016), DOI: 10.1016/j.jheap.2015.12.002

Meetings, conferences, seminars, schools:

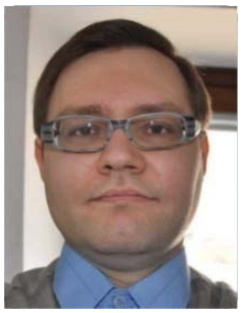
IRAP Ph.D. Erasmus Mundus Workshop Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches (France)

2nd César Lattes Meeting “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy. - Oral presentation: Telescope performance and image simulations of the coded-mask balloon-borne experiment protoMIRAX.

-Scientific collaboration with Prof. Ruffini. Pescara, Italy, 20-24 July, 2015

Ivan Siutsou



Position:
Capes Postdoctoral Student
ICRANet - Rio de Janeiro at CBPF

Outcome Institution:
IRAP PhD
University of Rome “Sapienza”

Publications:

-) Carlos R. Argüelles, Remo Ruffini, Ivan Siutsou, Bernardo Fraga; “On the distribution of dark matter in galaxies: quantum treatments”; J. Kor. Phys. Soc.; in press.
http://adsabs.harvard.edu/abs/2014JKPS...65..801A

-) I. Siutsou, C. R. Argüelles, R. Ruffini; “Dark Matter Massive Fermions and Einasto Profiles in Galactic Haloes”; Astronomy Reports, V. 59, Issue 7, pp.656-666.
http://adsabs.harvard.edu/abs/2015ARep...59..656S

-) U. Barres de Almeida, R. Ruffini, I. Siutsou; “Limits on Lorentz invariance violation from highly variable gamma-ray data of GRBs and Blazars”; in preparation.

-) A. Aksenov, I. Siutsou, G. Vereshchagin; “Electron-positron plasmathermalization in optically thick environment”; in preparation.

-) K. Boshkayev, D. Bini, J. Rueda, A. Geralico, M. Muccino, and I. Siutsou, “What can we extract from quasiperiodic oscillations?,” Gravitation and Cosmology 20, 233 (2014).
http://adsabs.harvard.edu/abs/2014GrCo...20..233B

-) K. Boshkayev, J. A. Rueda, R. Ruffini, and I. Siutsou, “General relativistic white dwarfs and their astrophysical implications,” Journal of Korean Physical Society 65, 855 (2014).
http://adsabs.harvard.edu/abs/2014JKPS...65..855B

Meetings, conferences, seminars, schools:

Zeldovich-100 Meeting, March 10-14, 2014, Minsk, Belarus - Subatomic particles, Nucleons, Atoms, Universe: Processes and Structure - International conference in honor of Ya. B. Zeldovich 100thAnniversary

2nd César Lattes Meeting "Supernovae, Neutron Stars, Black Holes", 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Zaninoni, Elena

Position:
Capes Postdoctoral Student
ICRANet - Rio de Janeiro at CBPF

Outcome Institution:
INAF
Osservatorio Astronomico di Brera

Publications:

-)E. Zaninoni, M.G. Bernardini, R. Margutti, S. Oates, G. Chincarini; “Gamma-ray burst optical light-curve zoo: comparison with X-ray observations”; A&A 557, A12 (2014)

-)R. Ruffini, G. B. Pisani, M. Muccino, J. A. Rueda, C. L. Bianco, M. Enderli, L. Izzo, M. Kovacevic, A. V. Penacchioni, Y. Wang, E. Zaninoni; “GRB 090510: the tightest observed binary-driven hypernova”; submitted to ApJ.

-) "GRB 140619B: a short GRB from a binary neutron star merger leading to black hole formation", Ruffini, R.; Muccino, M.; Kovacevic, M.; Oliveira, F. G.; Rueda, J. A.; Bianco, C. L.; Enderli, M.; Penacchioni, A. V.; Pisani, G. B.; Wang, Y.; Zaninoni, E. (2014arXiv1412.1018R; ApJ, Vol. 808, Issue 2, article id. 190, 14 pp. (2015) http://adsabs.harvard.edu/abs/2015ApJ...808..190R

-) "Ten years of Swift: a universal scaling for short and long gamma-ray bursts (EX,iso-Egamma,iso-Epk)", Zaninoni, E.; Bernardini M. G.; Margutti R.; Amati L. (MNRAS)
http://adsabs.harvard.edu/abs/2014styd.confE.120Z

-) "A new measurement of omega_m from gamma-ray bursts", L. Izzo, M. Muccino, E. Zaninoni, L. Amati, M. Della Valle (A&A) arXiv:1508.05898 http://adsabs.harvard.edu/abs/2015arXiv150805898I

-) E. Zaninoni, M. G. Bernardini, R. Margutti L. Amati; Ten Years of Swift: a Universal Scaling for Short and Long Gamma-Ray Bursts (EX;iso - E;iso - Epk); Proc. of the 2nd César Latter meeting, “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

Meetings, conferences, seminars, schools:

December 2014: University of Rome "La Sapienza" (Rome, Italy), Osservatorio di Brera (Merate, Italy)

January 2015: ICRANet - Pescara

July 2015: University of Rome "La Sapienza" (Rome, Italy), Osservatorio di Brera (Merate, Italy)

Seminar at Phys. Department La Sapienza Title: Gamma-ray burst optical light-curve zoo: comparison with X-ray observations.

Mission to Roma for scientific work 31/3/2014 – 09/04/2014
Workshop GRB in the multi – messenger era – Institut de Physique du Globe, Paris, June 16th to June 19th 2014

June 16-19th, 2014, International Workshop Gamma-Ray Bursts in the Multi-messenger Era, Paris, France. Posters: "Gamma-ray burst optical light-curve zoo: comparison with X-ray observations"; "The induced gravitational collapse and the bynary driven hypernovae".

December 2014: University of Rome "La Sapienza" (Rome, Italy), Osservatorio di Brera (Merate, Italy)

December 2nd-5th, 2014 Swift: 10 Years of Discovery, Rome, Italy. Poster: “Ten years of Swift: a universal scaling for short and long gamma-ray bursts (Ex,iso - Eγ,iso - Epk)”.

Yerevan, Armenia - 1stScientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014 - Talk: “Gamma-ray bursts and their X-ray and optical afterglow”.

January 2015: ICRANet - Pescara

2nd César Lattes Meeting “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy. - Talk: “The GRB Universal Scaling EX,iso - Eγ,iso - Epk With Ten Years Of Swift Data”.

July 2015: University of Rome "La Sapienza" (Rome, Italy), Osservatorio di Brera (Merate, Italy)

Aharonian, Felix

Position:
Capes Senior Visitor Professor to Brazil

List of visits
1st year:
From December, 2013 to : January, 15 2014

2nd year:
Expected visit from October 19, 2015 to November 27, 2015

3rd year:
From February to March 2016

Outcome Institution:
Max-Planck-Institut für Kernphysik

Publications and Joint activities:
March 23, 2016, CBPF, Seminar: "Discovery of a PeVatron in the Galactic Center: Implications for the Physics of Black Holes and for Origin of Galactic Cosmic Rays"

From 28 February to 11 March and from 19 to 31 of March, 2016, UFSC, Mini course/Lectures: "Nonthermal High Energy Universe"; Seminar: “Nature's Extreme Accelerators Exploring the Nonthermal Universe with High Energy Gamma Rays"

Meetings, conferences, seminars, schools:
2014: Scientific visit to ICRANet

The first URCA meeting on Relativistic Astrophysics - ICRANet Rio - 24-29 June 2013 – Rio de Janeiro

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Bisnovatyi Kogan, Gennady

Position:
Capes Senior Visitor Professor to Brazil

List of visits
1st year:
From June15, 2014 to July 31, 2014

2nd year:
From June 1, 2015 to July 10, 2015

3rd year:
To be defined

Outcome Institution:
Russian Space Research Institute – IKI
National Research Nuclear University – MEPhI
Moscow - Russia

Publications:
G. S. Bisnovatyi-Kogan; "Strong shock in the uniformly expanding medium"; submitted, arXiv:1408.1918 http://adsabs.harvard.edu/abs/2014arXiv1408.1918B

Meetings, conferences, seminars, schools:
2013 yearly ICRANet Scientific Meeting on Relativistic Astrophysics
on the Occasion of the 50th Anniversary of the Kerr solution of the Einstein's equations
June 3-19, 2013 – ICRANet

Mini course for graduate students "Accretion, neutron stars and black holes", 9 hours, Florianopolis

Speaker on the department colloquium "Gravitational lensing"

Giommi, Paolo

Position:
Capes Senior Visitor Professor to Brazil

List of visits
1st year:
December 15/2013 - January 15/2014
August 8/2014 - August 31/2014

2nd year:
April 5/2015 - May 1/2015
August 1/2015 - August 31/2015

3rd year:
To be defined

Outcome Institution:
ASDC - ASI Science Data Center
ASI - AGENZIA SPAZIALE ITALIANA

Publications:
-) P. Padovani, P. Giommi; “A simplified view of blazars: the very high energy gamma-ray vision” MNRAS Lett. 446, 41 (2015). http://adsabs.harvard.edu/abs/2015MNRAS.446L..41P

-) B. Arsioli, B. Fraga, P. Giommi, P. Padovani, M. Marrese; “1WHSP: an IR-based sample of ~1000 VHE gamma-ray blazar candidates”; A&A 579, 34 (2015).
http://adsabs.harvard.edu/abs/2015A%26A...579A..34A

-) S. O. Kepler, I. Pelisoli, D. Koester, G. Ourique, S. J. Kleinman, A. D. Romero, A. Nitta, D. J. Eisenstein, J.E.S. Costa, B. Kulebi, S. Jordan, P. Dufour, Paolo Giommi; “New White Dwarf Stars in the Sloan Digital Sky Survey DataRelease 10”; MNRAS 446, 4078 (2015).
http://adsabs.harvard.edu/abs/2015MNRAS.446.4078K

-) Padovani, P., Petropoulou, M., Giommi, P., Resconi, E.; “A simplified view of blazars: the neutrino background”; MNRAS 452, 1877 (2015). http://adsabs.harvard.edu/abs/2015MNRAS.452.1877P

-) Giommi, P.; Padovani, P.; “A simplified view of blazars contribution to the X-ray and gamma-ray extragalactic backgrounds”; MNRAS 450, 2404 (2015).
http://adsabs.harvard.edu/abs/2015MNRAS.450.2404G

-) Giommi, P.; “Multi-frequency, multi-messenger astrophysics with Swift. The case of blazars”; JHEAP (2015); DOI: 10.1016/j.jheap.2015.06.001 http://adsabs.harvard.edu/abs/2015arXiv150304863G

-) Arsioli, B., Fraga, B., Giommi P., et al.; VizieR Online Data Catalog: 1WHSP: VHE gamma-ray blazar candidates; 2015yCat.35790034 http://adsabs.harvard.edu/abs/2015yCat..35790034A

-) J. L. Chang, B. Arsioli, P. Giommi and P. Padovani; “2WHSP: a multi-frequency based catalog of Very High Energy blazar candidates”; in preparation.

-) B. Arsioli, J. L. Chang, P. Giommi; “The X-ray spectral properties of 2WHSP blazars”; in preparation.

-) Giommi, P, Padovani, P., Arsioli B., Chang, J. L.; “2WHSP sources in the Fermi 2FHL catalog of VHE sources”; in preparation.

Meetings, conferences, seminars, schools:

2013 yearly ICRANet Scientific Meeting on Relativistic Astrophysicson the Occasion of the 50th Anniversary of the Kerr solution of the Einstein’s equationsJune 3-19, 2013 – ICRANet

The first URCA meetingonRelativistic Astrophysics - ICRANet Rio - 24-29 June 2013 – Rio de Janeiro

Yerevan, Armenia - 1stScientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

2nd César Lattes Meeting “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

"Swift 10 years of discovery", 2-5 Dicembre 2014, Roma, Università Sapienza

invited speaker for plenary talk to the following future meetings:
- VLVnT -2015 : Very Large Volume Neutrino Telescope, 14-16 September 2015, Rome, Sapienza
- TeV Particle Astrophysics 2015, 26-30 October 2015, Kashiwanhoa (Tokyo), Japan

Mathews, Grant

Position:

Capes Senior Visitor Professor to Brazil

Outcome Institution:

Professor, Theoretical Astrophysics and Cosmology
Director, Center for Astrophysics
at Notre Dame University (CANDU)
B.S., Michigan State University, 1972
Ph.D., University of Maryland, 1977

Publications:

Meetings, conferences, seminars, schools:

Scientific visit to ICRANet from April 30th to May 6th

Yerevan, Armenia - 1st Scientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Rueda Hernández, Jorge Armando

Position:

Assistant Professor at ICRANet
Member of ICRANet Faculty
Capes Senior Visitor Professor to Brazil

List of visits:
1st year:
From December 15, 2013 to January 15, 2014
From August 1, 2014 to August 31, 2014

2nd year:
From April 12 2015 to May 12, 2015

3rd year:
To be defined

Publications:

-) D. L. Cáceres, S. M. de Carvalho, J. G. Coelho, R. C. R. de Lima, J. A. Rueda, "Thermal X-ray emission from massive, fast rotating, highly magnetized white dwarfs", MNRAS 465, 4434 (2017). http://adsabs.harvard.edu/abs/2017MNRAS.465.4434C

-) J. G. Coelho, D. L. Caceres, R. C. R. de Lima, M. Malheiro, J. A. Rueda, and R. Ruffini, "The rotation-powered nature of some soft gamma-ray repeaters and anomalous X-ray pulsars", A&A, accepted. http://dx.doi.org/10.1051/0004-6361/201629521

-) R. Ruffini, J. A. Rueda, M. Muccino, G. B. Pisani, Y. Wang, L. M. Becerra, M. Kovacevic, F. G. Oliveira, Y. Aimuratov, C. L. Bianco, R. Moradi, J. Rodriguez, and U. Barres, “On the rate and on the gravitational wave emission of short and long GRBs,” ApJ, submitted; arXiv: 1602.03545. http://adsabs.harvard.edu/abs/2016arXiv160203545R

-) R. Ruffini, M. Muccino, Y. Aimuratov, C. L. Bianco, C. Cherubini, M. Enderli, M. Kovacevic, R. Moradi, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, and Y. Wang, “GRB 090510: a genuine short-GRB from a binary neutron star coalescing into a Kerr-Newman black hole,” ApJ 831, 178 (2016). http://adsabs.harvard.edu/abs/2016ApJ...831..178R

-) Ruffini, J. A. Rueda, M. Muccino, Y. Aimuratov, L. M. Becerra, C. L. Bianco, M. Kovacevic, R. Moradi, F. G. Oliveira, G. B. Pisani, and Y. Wang, “On the classification of GRBs and their occurrence rates”, ApJ 832, 136 (2016). http://adsabs.harvard.edu/abs/2016ApJ...832..136R

-) R. Ruffini, Y. Aimuratov, C. L. Bianco, M. Enderli, M. Kovacevic, R. Moradi, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, and Y. Wang, “Induced gravitational collapse in FeCO Core-Neutron star binaries and Neutron star-Neutron star binary mergers”, IJMPA 30, 1545023 (2015). http://adsabs.harvard.edu/abs/2015IJMPA..3045023R

-) A. Mesquita, M. Razeira, R. Ruffini, J. A. Rueda, D. Hadjimichef, R. O. Gomes, and C. A. Z. Vasconcellos, “An effective field theory for neutron stars with many-body forces, strong − repulsion, and −K and \bar{K}0 condensation”, Astronomische Nachrichten 336, 880 (2015). http://adsabs.harvard.edu/abs/2015AN....336..880M

-) R. Ruffini, M. Muccino, M. Kovacevic, F. G. Oliveira, J. A. Rueda, C. L. Bianco, M. Enderli, A. V. Penacchioni, G. B. Pisani, Y. Wang, and E. Zaninoni, “GRB 140619B: a short GRB from a binary neutron star merger leading to black hole formation”, ApJ 808, 190 (2015). http://adsabs.harvard.edu/abs/2015ApJ...808..190R

-) Y. Wang, R. Ruffini, M. Kovacevic, C. L. Bianco, M. Enderli, M. Muccino, A. V. Penacchioni, G. B. Pisani, and J. A. Rueda, “Predicting supernova associated to gamma-ray burst 130427a”, Astronomy Reports 59, 667 (2015). http://adsabs.harvard.edu/abs/2015ARep...59..667W

-) R. Ruffini, L. Izzo, C. L. Bianco, J. A. Rueda, C. Barbarino, H. Dereli, M. Enderli, M. Muccino, A. V. Penacchioni, G. B. Pisani, and Y. Wang, “Induced gravitational collapse in the BATSE era: The case of GRB 970828”, Astronomy Reports 59, 626 (2015). http://adsabs.harvard.edu/abs/2015ARep...59..626R

-) M. Muccino, R. Ruffini, C. L. Bianco, M. Enderli, M. Kovacevic, L. Izzo, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, and Y. Wang, “On binary driven hypernovae and their nested late X-ray emission”, Astronomy Reports 59, 581 (2015). http://adsabs.harvard.edu/abs/2015ARep...59..581M

-) L. Becerra, F. Cipolletta, C. L. Fryer, J. A. Rueda, R. Ruffini, “Angular Momentum Role in the Hypercritical Accretion of-Driven Binary Hypernovae”, ApJ 812, 100 (2015). http://adsabs.harvard.edu/abs/2015ApJ...812..100B

-) C. L. Fryer, F. G. Oliveira, J. A. Rueda, and R. Ruffini, “On the Neutron Star-Black Hole Binaries Produced by Binary-driven Hypernovae,” Phys. Rev. Lett. 115, 231102 (2015). http://adsabs.harvard.edu/abs/2015PhRvL.115w1102F

-) R. Belvedere, J. A. Rueda, and R. Ruffini, “On the Magnetic Field of Pulsars with Realistic Neutron Star Configurations,” ApJ 799, 23 (2015). http://adsabs.harvard.edu/abs/2015ApJ...799...23B

-) R. Ruffini, Y. Wang, M. Enderli, M. Muccino, M. Kovacevic, C. L. Bianco, A. V. Penacchioni, G. B. Pisani, and J. A. Rueda, “GRB 130427A and SN 2013cq: A Multi-wavelength Analysis of An Induced Gravitational Collapse Event,” ApJ 798, 10 (2015). http://adsabs.harvard.edu/abs/2015ApJ...798...10R

-) Pereira, Jonas P. and Rueda, Jorge A.; “Energy decomposition within Einstein-Born-Infeld black holes”, Phys. Rev. D 91, 064048 (2015). http://adsabs.harvard.edu/abs/2015PhRvD..91f4048P

-) J. P. Pereira and J. A. Rueda, “Radial Stability in Stratified Stars,” ApJ 801, 19 (2015). http://adsabs.harvard.edu/abs/2015ApJ...801...19P

-) S. M. de Carvalho, R. Negreiros, J. A. Rueda, and R. Ruffini, “Thermal evolution of neutron stars with global and local neutrality,” Phys. Rev. C 90, 055804 (2014). http://adsabs.harvard.edu/abs/2014PhRvC..90e5804D

-) J. P. Pereira, J. G. Coelho, J. A. Rueda, R. Ruffini; “Stability of thin-shell interfaces inside compact stars”; Phys. Rev. D 90, 123011 (2014). http://adsabs.harvard.edu/abs/2014PhRvD..90l3011P

-) J. P. Pereira, H. J. Mosquera Cuesta, J. A. Rueda, and R. Ruffini, “On the black hole mass decomposition in nonlinear electrodynamics,” Physics Letters B 734, 396 (2014). http://adsabs.harvard.edu/abs/2014PhLB..734..396P

-) F. G. Oliveira, J. A. Rueda, and R. Ruffini, “Gravitational Waves versus X-Ray and Gamma-Ray Emission in a Short Gamma-Ray Burst,” ApJ 787, 150 (2014). http://adsabs.harvard.edu/abs/2014ApJ...787..150O

-) K. Boshkayev, D. Bini, J. Rueda, A. Geralico, M. Muccino, and I. Siutsou, “What can we extract from quasiperiodic oscillations?,” Gravitation and Cosmology 20, 233 (2014). http://adsabs.harvard.edu/abs/2014GrCo...20..233B

-) J. G. Coelho, R. M. Marinho, M. Malheiro, R. Negreiros, D. L. Cáceres, J. A. Rueda, R. Ruffini; “Dynamical instability of white dwarfs and breaking of spherical symmetry under the presence of extreme magnetic fields”; ApJ 794, 86 (2014). http://adsabs.harvard.edu/abs/2014ApJ...794...86C

-) R. Belvedere, K. Boshkayev, Jorge A. Rueda, R. Ruffini; “Uniformly rotating neutron stars in the global and local charge neutrality cases”; Nuclear Physics A 921, 33 (2014). http://adsabs.harvard.edu/abs/2014NuPhA.921...33B

-) R. Ruffini, M. Muccino, C.L. Bianco, M. Enderli, L. Izzo, M. Kovacevic, A.V. Penacchioni, G.B. Pisani, J.A. Rueda, Y. Wang; “On binary-driven hypernovae and their nested late X-ray emission”; Astronomy & Astrophysics Letters 565, L10 (2014). http://adsabs.harvard.edu/abs/2014A%26A...565L..10R

-) S. M. Carvalho, M. Rotondo, Jorge A. Rueda, R. Ruffini; “Relativistic Feynman-Metropolis-Teller treatment at finite temperatures”; Physical Review C 89, 015801 (2014). http://adsabs.harvard.edu/abs/2014PhRvC..89a5801D

-) M. Razeira, A. Mesquita, C. A. Z. Vasconcellos, R. Ruffini, J. A. Rueda, R. O. Gomes; "Strangeness content of neutron stars with strong sigma-hyperon repulsion"; Astronomische Nachrichten 335, 739 (2014). http://adsabs.harvard.edu/abs/2014AN....335..739R

-) M. Razeira, A. Mesquita, C. A. Z. Vasconcellos, R. Ruffini, J. A. Rueda, R. O. Gomes; "Effective field theory for neutron stars with strong sigma-hyperon repulsion"; Astronomische Nachrichten 335, 733 (2014). http://adsabs.harvard.edu/abs/2014AN....335..733R

-) S. M. de Carvalho, J. A. Rueda, and R. Ruffini, "On the cooling of globally-neutral neutron stars," Journal of Korean Physical Society 65, 861 (2014). http://adsabs.harvard.edu/abs/2014JKPS...65..861D

-) K. Boshkayev, J. A. Rueda, R. Ruffini, and I. Siutsou, "General relativistic white dwarfs and their astrophysical implications," Journal of Korean Physical Society 65, 855 (2014). http://adsabs.harvard.edu/abs/2014JKPS...65..855B

Meetings, conferences, seminars, schools:

Third Bego Rencontres - IRAP Ph.D. Erasmus Mundus school - September 8th-19th 2014

Yerevan, Armenia - 1stScientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

IRAP Ph.D. Erasmus Mundus Workshop - Supernovae, Gamma-ray bursts and the induced gravitational collapse May 11-16, 2014 - Les Houches (France)

2013 yearly ICRANet Scientific Meeting on Relativistic Astrophysics on the Occasion of the 50th Anniversary of the Kerr solution of the Einstein's equations, June 3-19, 2013
The first URCA meeting on Relativistic Astrophysics - ICRANet Rio - 24-29 June 2013 – Rio de Janeiro

2nd César Lattes Meeting "Supernovae, Neutron Stars, Black Holes", 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy.

Luchini Martins, Gabriel

Position:
Capes Sabbatical Professor to Europe/Asia
University of Bremen

List of Visits
From: February 15, 2014 to April 15, 2014
From January8, 2015 to March 8, 2015

Institution:
Universidade Federal do Espírito Santo
Centro de Ciências Exatas
Departamento de Física

Publications:
-) C. P. Constantinidis, G. Luchini, L.A. Ferreira, “A remark on the asymptotic form of BPS multi-dyon solutions and their conserved charges”, http://arxiv.org/abs/1508.03049
http://adsabs.harvard.edu/abs/2015arXiv150803049C

-) Yves Brihaye, Adolfo Cisterna, Betti Hartmann, Gabriel Luchini; “From topological to non-topological solitons: kinks, domain walls and Q-balls in a scalar field model with non-trivial vacuum manifold”
http://xxx.lanl.gov/pdf/1511.02757.pdf

Meetings, conferences, seminars, schools:
2014 A first meeting with non-perturbative physics & solitons - *Research Training Group “Models of Gravity” Colloquium, ZARM, Bremen*

2014 The integral equations of Yang-Mills theory - *International Conference and Workshop “Group Theory and Knots”, International Institute of Physics, Natal*

2014 WE-Heraeus seminar on “The Strong Gravity Regime of Black Holes and Neutron Stars", *Bad Honnef*

2014 Group Theory and Knots, *Natal*

Mosquera Cuesta, Herman

Position:

Capes Sabbatical Professor to Europe/Asia
At International Center for Relativistic Astrophysics Network – ICRANet

Visit from January 21, 2014, to June 21, 2014

Institution:

International Center for Relativistic Astrophysics Network – ICRANet

Publications:

-)Pereira, Jonas P.; Mosquera Cuesta, Herman J.; Rueda, Jorge A.; Ruffini, R.; "On the black hole mass decomposition in nonlinear electrodynamics"; Physics Letters B, 734 (2014), p. 396-402.
http://adsabs.harvard.edu/abs/2014PhLB..734..396P

Meetings, conferences, seminars, schools:

Zeldovich-100 Meeting, March 10-14, 2014, Minsk, Belarus - Subatomic particles, Nucleons, Atoms, Universe: Processes and Structure - International conference in honor of Ya. B. Zeldovich 100th Anniversary

Rodrigo Picanço Negreiros

Position:

Capes Sabbatical Professor to Europe/Asia
At International Center for Relativistic Astrophysics Network – ICRANet

List of visits:
From November 26, 2014 to December 7, 2014
From January 7, 2015 to February 15, 2015

Institution:

Universidade Federal Fluminense
Centro de Estudos Gerais
Instituto de Física

Publications:

-) J. G. Coelho, R. M. Marinho, M. Malheiro, R. Negreiros, D. L. Cáceres, J. A. Rueda, R. Ruffini; "Dynamical instability of white dwarfs and breaking of spherical symmetry under the presence of extreme magnetic fields";ApJ 794, 86 (2014). http://adsabs.harvard.edu/abs/2014ApJ...794...86C

-) S. M. de Carvalho, R. Negreiros, J. A. Rueda, R. Ruffini; "Thermal evolution of neutron stars with global and local neutrality," Phys. Rev. C 90, 055804 (2014)
http://adsabs.harvard.edu/abs/2014PhRvC..90e5804D

-)S. M. Carvalho, R. Negreiros, Jorge A. Rueda, R. Ruffini; "Strange stars versus globally neutral neutron stars: structure and cooling"; to be submitted.

-) S. M. de Carvalho, R. Negreiros, M. Orsaria, G. A. Contrera, F. Weber and W. Spinella "Thermal evolution of hybrid stars within the framework of a non-local NJL model" Submitted to Physical Review C

Meetings, conferences, seminars, schools:

2nd César Lattes Meeting "Supernovae, Neutron Stars, Black Holes", 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

Rangel Lemos, Luis Juracy

Position:
IRAP PhD – Fifth Cycle 2006-2009
Capes Sabbatical Professor to Europe/Asia at International Center for Relativistic Astrophysics Network – ICRANet

List of visits:
From April 3, 2014 to May 3, 2014
From October 15, 2014 to November 15, 2014

Institution
Fundação Universidade Federal do Tocantins

Publications:

-) L. Izzo, M. G. Bernardini, C. L. Bianco, L. Caito, B. Patricelli, L. J. Rangel Lemos, R. Ruffini; “On GRB 080916C and GRB 090902B observed by the Fermi satellite”; AIP Conf. Proc. 1279, 343 (2010). http://adsabs.harvard.edu/abs/2010AIPC.1279..343I

-) L. J. Rangel Lemos, S. Casanova, S. R. Kelner, R. Ruffini; “Fermi's approach to the study of hadronic interactions”; AIP Conf. Proc. 966, 325(2008). http://adsabs.harvard.edu/abs/2008AIPC..966..325R

-) L. J. Rangel Lemos, C. L. Bianco, H. J. Mosquera Cuesta, J. A. Rueda, R. Ruffini; “Luminosity function of BATSE GRBs whose prompt emission is not dominated by the P-GRB”; Proceedings of the 25th Texas Symposium on Relativistic Astrophysics. December 6-10, 2010. http://adsabs.harvard.edu/abs/2010tsra.confE.204R

-) M. Constancio Jr, O. D. Aguiar, G. McCurrach Keiser, M. Malheiro, L. J. Rangel Lemos; "Do coupled nested pendula have the same Eigen frequencies as pendula in cascade?"; JINST (issn: 1748-0221), vol 9, T08006, 2014. http://adsabs.harvard.edu/abs/2014JInst...9.8006C

-) L. J. Rangel Lemos, E. Sales Silva; "Astrofísica Relativística, um panorama sobre os eventos mais energéticos do universo"; proceeding of the "I Semana Acadêmica da Física da UFT/Araguaína"; chapter 10; Nagô Editora e Livraria Ltda - Palmas-TO-Brazil; 2015; in press. ISBN: 978-85-64147-36-2

-) L. J. Rangel Lemos, C. L. Bianco, R. Ruffini, M. Malheiro; "Luminosity function of GRBs"; Compact Stars in the QCD Phase Diagram III (CSQCD III); published in 09/2013. Preprint: arxiv/astro-ph: 1309.3360 http://adsabs.harvard.edu/abs/2013arXiv1309.3360R

-) L. J. Rangel Lemos, C. L. Bianco, R. Ruffini; "Luminosity function statistics applied in the fireshell model"; in preparation; it will be submitted to the ApJ; 2015.

-) L. J. Rangel Lemos, M. Malheiro; "Equation of motion of the 'n' coupled pendula"; in preparation; it will be submitted to the Applied Physics Letters; 2015.

-) L. J. Rangel Lemos, C. L. Bianco, R. Ruffini; Applying the luminosity function statistics in the fireshell model; Proc. of the 2nd César Latter meeting, “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

Meetings, conferences, seminars, schools:

- 2011. The Third Galileo-Xu Guangqi meeting. October 11-15, Beijin (China)

- The 2nd Galileo - Xu Guangqi meeting, July 12-18, 2010. Hanbury Botanic Gardens Ventimiglia (Italy) and Villa Ratti, Nice, France.

- The Shocking Universe - Gamma Ray Burst and High Energy Shock, 2009, September 14-18, San Servolo, Venice, Italy.

- XII Marcel Grossmann Meeting, 2009, July 12-18, Paris, France.

- 6th Italian-Sino Workshop in Relativistic Astrophysics, 2009, June 29 - July 1, Pescara, Italy.

- X Italian School of Astrophysics - `Probing Stellar Populations out to the Distant Universe', 2008, September 7-19, Cefalù Sicily, Italy.

- 2008 Nanjing GRB Conference, 2008, June 23-27, Nanjing, Chine.

- XIII Brazilian School of Cosmology and Gravitation, 2008, July 25-August 2, Mangaratiba, Rio de Janeiro, Brazil.

- III Stueckelberg Workshop on Relativistic Field Theories, 2008, July 8-18, Pescara, Italy.

- II Kolkata Conference on `Observational Evidence for Black Holes in the Universe', 2008, February 10-16, Kolkata, India.

- September 2007: IX National School of Astrophysics, Venice-Italy.

- July 2007: IV Italian-Sino Workshop on Relativistic Astrophysics, Pescara-Italy.

- June 2007: X Italian-Korean Symposium on Relativistic Astrophysics, Pescara-Italy.

- February 2007: Cesare Lattes Meeting on GRB’s, Black Holes and Supernovae, Rio de Janeiro- RJ Brazil.

- November 2006: Courses and Workshops on Gravitational Waves, Relativistic Astrophysics and Cosmology - Emile Borel Center/IHP, Paris-France.

- 2nd César Lattes Meeting “Supernovae, Neutron Stars, Black Holes”, 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

-) I Encontro de Física do Entorno do Bico do Papagaio, Araguaína-TO-Brazil, september 1-7, 2014. I was the chair of the Organizing Committee.

César Augusto Zen Vasconcellos

Position:
Capes Sabbatical Professor to Europe/Asia
At International Center for Relativistic Astrophysics Network – ICRANet

Visit from: June 16, 2014 to May 15, 2014

Institution:
Universidade Federal do Rio Grande do Sul – UFRGS

Publications:

-) M. Razeira, A. Mesquita, C. A. Z. Vasconcellos, R. Ruffini, J. A. Rueda, R. O. Gomes; "Strangeness content of neutron stars with strong sigma-hyperon repulsion"; Astronomische Nachrichten 335, 739 (2014). http://adsabs.harvard.edu/abs/2014AN....335..739R

-) M. Razeira, A. Mesquita, C. A. Z. Vasconcellos, R. Ruffini, J. A. Rueda, R. O. Gomes; "Effective field theory for neutron stars with strong sigma-hyperon repulsion"; Astronomische Nachrichten 335, 733 (2014). http://adsabs.harvard.edu/abs/2014AN....335..733R

-) J. Rueda, R. Ruffini, M. Razeira, A. Mesquita, R.O. Gomes, C.A.Z. Vasconcellos, D. Hadjimichef, "The Role of Many-Body Correlations and the Direct Baryon Urca Process in the Cooling of Neutron Stars", in preparation.

-) A. Mesquita, M. Razeira, R. Ruffini, J.A. Rueda, D, Hadjimichef, R.O. Gomes, C.A. Zen Vasconcellos. "An Effective Field Theory for Neutron Stars with Many-Body Forces, Strong Sigma-Hyperon Repulsion and Kaon Condensation, in preparation.

-)R. Camargo, J. A. Rueda,R. Ruffini, C. A. Z. Vasconcellos; "Rapidly rotating neutron stars with strong sigma-hyperon repulsion"; in preparation.

-)R. Camargo, J. A.Rueda, R. Ruffini, C. A. Z. Vasconcellos; "The effects of hyperons on the structure of rapidly rotating neutron stars"; in preparation.

-) C.A.Zen Vasconcellos, R. Ruffini, J. Rueda, M. Razeira, A. Mesquita, "A Relativistic Effective Field Theory for Neutron Stars, Pulsars and Magnetars"; in preparation.

Meetings, conferences, seminars, schools:

Third Bego Rencontres - IRAP Ph.D. Erasmus Mundus school - September 8th-19th 2014

Yerevan, Armenia - 1st Scientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe - 30 June - 4 July 2014

2nd César Lattes Meeting "Supernovae, Neutron Stars, Black Holes", 2015, Niterói - Rio De Janeiro, April 13-18 João Pessoa, April 21, Recife - Fortaleza, April 22

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COSMOLOGY AND GRAVITATION

X[th] Brazilian School of Cosmology and Gravitation
25[th] Anniversary (1977-2002)

Mangaratiba, Rio de Janeiro, Brazil
29 July - 9 August 2002

EDITORS
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International Center for Relativistic Astrophysics - ICRA

AMERICAN INSTITUTE OF PHYSICS

Melville, New York, 2003
AIP CONFERENCE PROCEEDINGS ■ VOLUME 668

New perspectives in physics and astrophysics from the theoretical understanding of Gamma-Ray Bursts

Remo Ruffini,[1,2,*] Carlo Luciano Bianco,[1,2,†] Pascal Chardonnet,[1,3,‡]
Federico Fraschetti,[1,4,§] Luca Vitagliano,[1,2,¶] and She-Sheng Xue[1,2,**]

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If due attention is given in formulating the basic equations for the Gamma-Ray Burst (GRB) phenomenon and in performing the corresponding quantitative analysis, GRBs open a main avenue of inquiring on totally new physical and astrophysical regimes. This program is very likely one of the greatest computational efforts in physics and astrophysics and cannot be actuated using shortcuts. A systematic approach is needed which has been highlighted in three basic new paradigms: the relative space-time transformation (RSTT) paradigm (Ruffini et al. [143]), the interpretation of the burst structure (IBS) paradigm (Ruffini et al. [144]), the GRB-supernova time sequence (GSTS) paradigm (Ruffini et al. [145]). From the point of view of fundamental physics new regimes are explored: (1) the process of energy extraction from black holes; (2) the quantum and general relativistic effects of matter-antimatter creation near the black hole horizon; (3) the physics of ultrarelativisitc shock waves with Lorentz gamma factor $\gamma > 100$. From the point of view of astronomy and astrophysics also new regimes are explored: (i) the occurrence of gravitational collapse to a black hole from a critical mass core of mass $M \gtrsim 10 M_{\odot}$, which clearly differs from the values of the critical mass encountered in the study of stars "catalyzed at the endpoint of thermonuclear evolution" (white dwarfs and neutron stars); (ii) the extremely high efficiency of the spherical collapse to a black hole, where almost 99.99% of the core mass collapses leaving negligible remnant; (iii) the necessity of developing a fine tuning in the final phases of thermonuclear evolution of the stars, both for the star collapsing to the black hole and the surrounding ones, in order to explain the possible occurrence of the "induced gravitational collapse". New regimes are as well encountered from the point of view of nature of GRBs: (I) the basic structure of GRBs is uniquely composed by a proper-GRB (P-GRB) and the afterglow; (II) the long bursts are then simply explained as the peak of the afterglow (the E-APE) and their observed time variability is explained in terms of inhomogeneities in the interstellar medium (ISM); (III) the short bursts are identified with the P-GRBs and the crucial information on general relativistic and vacuum polarization effects are encoded in their spectra and intensity time variability. A new class of space missions to acquire information on such extreme new regimes are urgently needed.

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CP668, *Cosmology and Gravitation*, edited by M. Novello and S. E. Perez Bergliaffa

On the possible role of massive neutrinos in cosmological structure formation

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In addition to the problem of galaxy formation, one of the greatest open questions of cosmology is represented by the existence of an asymmetry between matter and antimatter in the baryonic component of the Universe. We believe that a net lepton number for the three neutrino species can be used to understand this asymmetry. This also implies an asymmetry in the matter-antimatter component of the leptons. The existence of a nonnull lepton number for the neutrinos can easily explain a cosmological abundance of neutrinos consistent with the one needed to explain both the rotation curves of galaxies and the flatness of the Universe. Some propedeutic results are presented in order to attack this problem.

Contents

CP668, *Cosmology and Gravitation*, edited by M. Novello and S. E. Perez Bergliaffa

COSMOLOGY AND GRAVITATION

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AIP CONFERENCE PROCEEDINGS ■ VOLUME 782

The Blackholic energy: long and short Gamma-Ray Bursts (New perspectives in physics and astrophysics from the theoretical understanding of Gamma-Ray Bursts, II)[1]

Remo Ruffini*†, Maria Grazia Bernardini*†, Carlo Luciano Bianco*†, Pascal Chardonnet***, Federico Fraschetti*‡, Vahe Gurzadyan*§, Luca Vitagliano*† and She-Sheng Xue*†

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Abstract. We outline the confluence of three novel theoretical fields in our modeling of Gamma-Ray Bursts (GRBs): 1) the ultrarelativistic regime of a shock front expanding with a Lorentz gamma factor ~ 300; 2) the quantum vacuum polarization process leading to an electron-positron plasma originating the shock front; and 3) the general relativistic process of energy extraction from a black hole originating the vacuum polarization process. There are two different classes of GRBs: the long GRBs and the short GRBs. We here address the issue of the long GRBs. The theoretical understanding of the long GRBs has led to the detailed description of their luminosities in fixed energy bands, of their spectral features and made also possible to probe the astrophysical scenario in which they originate. We are specially interested, in this report, to a subclass of long GRBs which appear to be accompanied by a supernova explosion. We are considering two specific examples: GRB980425/SN1998bw and GRB030329/SN2003dh. While these supernovae appear to have a standard energetics of 10^{49} ergs, the GRBs are highly variable and can have energetics $10^4 - 10^5$ times larger than the ones of the supernovae. Moreover, many long GRBs occurs without the presence of a supernova. It is concluded that in no way a GRB can originate from a supernova. The precise theoretical understanding of the GRB luminosity we present evidence, in both these systems, the existence of an independent component in the X-ray emission, usually interpreted in the current literature as part of the GRB afterglow. This component has been observed by Chandra and XMM to have a strong decay on scale of months. We have named here these two sources respectively URCA-1 and URCA-2, in honor of the work that George Gamow and Mario Shoenberg did in 1939 in this town of Urca identifying the basic mechanism, the Urca processes, leading to the process of gravitational collapse and the formation of a neutron star and a supernova. The further hypothesis is considered to relate this X-ray source to a neutron star, newly born in the Supernova. This hypothesis should be submitted to further theoretical and observational investigation. Some theoretical developments to clarify the astrophysical origin of this new scenario are outlined. We turn then to the theoretical developments in the short GRBs: we first report some progress in the understanding the dynamical phase of collapse, the mass-energy formula and the extraction of blackholic energy which have been motivated by the analysis of the short GRBs. In this context progress has also been accomplished on establishing an absolute lower limit to the irreducible mass of the black hole as well as on some critical considerations about the relations of general relativity and the second law of thermodynamics. We recall how this last issue has been one of the most debated in theoretical physics in the past thirty years due to the work of Bekenstein and Hawking. Following these conceptual progresses we analyze the vacuum polarization process around an overcritical collapsing shell. We evidence the existence of a separatrix and a dyadosphere trapping surface in the dynamics of the electron-positron plasma generated during the process of gravitational collapse. We then analyze, using recent progress in the solution of the Vlasov-Boltzmann-Maxwell system, the oscillation regime in the created electron-positron plasma and their rapid convergence to a thermalized spectrum. We conclude by making precise predictions for the spectra, the energy fluxes and characteristic time-scales of the radiation for short-bursts. If the precise luminosity variation and spectral hardening of the radiation we have predicted will be confirmed by observations of short-bursts, these systems will play a major role as standard candles in cosmology. These considerations will also be relevant for the analysis of the long-bursts when the baryonic matter contribution will be taken into account.

[1] Part I of these Lecture notes have been published in *COSMOLOGY AND GRAVITATION: Xth Brazilian School of Cosmology and Gravitation; 25th Anniversary (1977-2002)*, M. Novello, S.E. Perez-Bergliaffa (eds.), *AIP Conf. Proc.*, **668**, 16 (2003), see Ref.[28]. The preliminary reading of

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ICRA Brasil

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Rio de Janeiro - Brasil
ICRA - Brasil / CBPF

The Blackholic energy and the canonical Gamma-Ray Burst[1]

Remo Ruffini[*,†], Maria Grazia Bernardini[*,†], Carlo Luciano Bianco[*,†], Letizia Caito[*,†], Pascal Chardonnet[*,**], Maria Giovanna Dainotti[*,†], Federico Fraschetti[*,‡], Roberto Guida[*,†], Michael Rotondo[*,†], Gregory Vereshchagin[*,†], Luca Vitagliano[*,§] and She-Sheng Xue[*]

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Abstract. Gamma-Ray Bursts (GRBs) represent very likely "the" most extensive computational, theoretical and observational effort ever carried out successfully in physics and astrophysics. The extensive campaign of observation from space based X-ray and γ-ray observatory, such as the *Vela*, CGRO, BeppoSAX, HETE-II, INTEGRAL, *Swift*, R-XTE, *Chandra*, XMM satellites, have been matched by complementary observations in the radio wavelength (e.g. by the VLA) and in the optical band (e.g. by VLT, Keck, ROSAT). The net result is unprecedented accuracy in the received data allowing the determination of the energetics, the time variability and the spectral properties of these GRB sources. The very fortunate situation occurs that these data can be confronted with a mature theoretical development. Theoretical interpretation of the above data allows progress in three different frontiers of knowledge: **a)** the ultrarelativistic regimes of a macroscopic source moving at Lorentz gamma factors up to ~ 400; **b)** the occurrence of vacuum polarization process verifying some of the yet untested regimes of ultrarelativistic quantum field theories; and **c)** the first evidence for extracting, during the process of gravitational collapse leading to the formation of a black hole, amounts of energies up to 10^{55} ergs of blackholic energy — a new form of energy in physics and astrophysics. We outline how this progress leads to the confirmation of three interpretation paradigms for GRBs proposed in July 2001. Thanks mainly to the observations by *Swift* and the optical observations by VLT, the outcome of this analysis points to the existence of a "canonical" GRB, originating from a variety of different initial astrophysical scenarios. The communality of these GRBs appears to be that they all are emitted in the process of formation of a black hole with a negligible value of its angular momentum. The following sequence of events appears to be canonical: the vacuum polarization process in the dyadosphere with the creation of the optically thick self accelerating electron-positron plasma; the engulfment of baryonic mass during the plasma expansion; adiabatic expansion of the optically thick "fireshell" of electron-positron-baryon plasma up to the transparency; the interaction of the accelerated baryonic matter with the interstellar medium (ISM). This leads to the canonical GRB composed of a proper GRB (P-GRB), emitted at the moment of transparency, followed by an extended afterglow. The sole parameters in this scenario are the total energy of the dyadosphere E_{dya}, the fireshell baryon loading M_B defined by the dimensionless parameter $B \equiv M_B c^2/E_{dya}$, and the ISM filamentary distribution around the source. In the limit $B \to 0$ the total energy is radiated in the P-GRB with a vanishing contribution in the afterglow. In this limit, the canonical GRBs explain as well the short GRBs. In these lecture notes we systematically outline the main results of our model comparing and contrasting them with the ones in the current literature. In both cases, we have limited ourselves to review already published results in refereed publications. We emphasize as well the role of GRBs in testing yet unexplored grounds in the foundations of general relativity and relativistic field theories.

INTRODUCTION

The last century was characterized by three great successes in the field of astrophysics, each one linked to a different energy source:

1. Jean Perrin [249] and Arthur Eddington [95] were the first to point out, independently, that the nuclear fusion of

[1] Part I and Part II of these Lecture notes have been published respectively in *COSMOLOGY AND GRAVITATION: Xth Brazilian School of Cosmology and Gravitation; 25th Anniversary (1977-2002)*, M. Novello, S.E. Perez Bergliaffa (eds.), *AIP Conf. Proc.*, **668**, 16 (2003), see Ruffini et al. [312], and in *COSMOLOGY AND GRAVITATION: XIth Brazilian School of Cosmology and Gravitation*, M. Novello, S.E. Perez Bergliaffa (eds.), *AIP Conf. Proc.*, **782**, 42 (2005), see Ruffini et al. [304].

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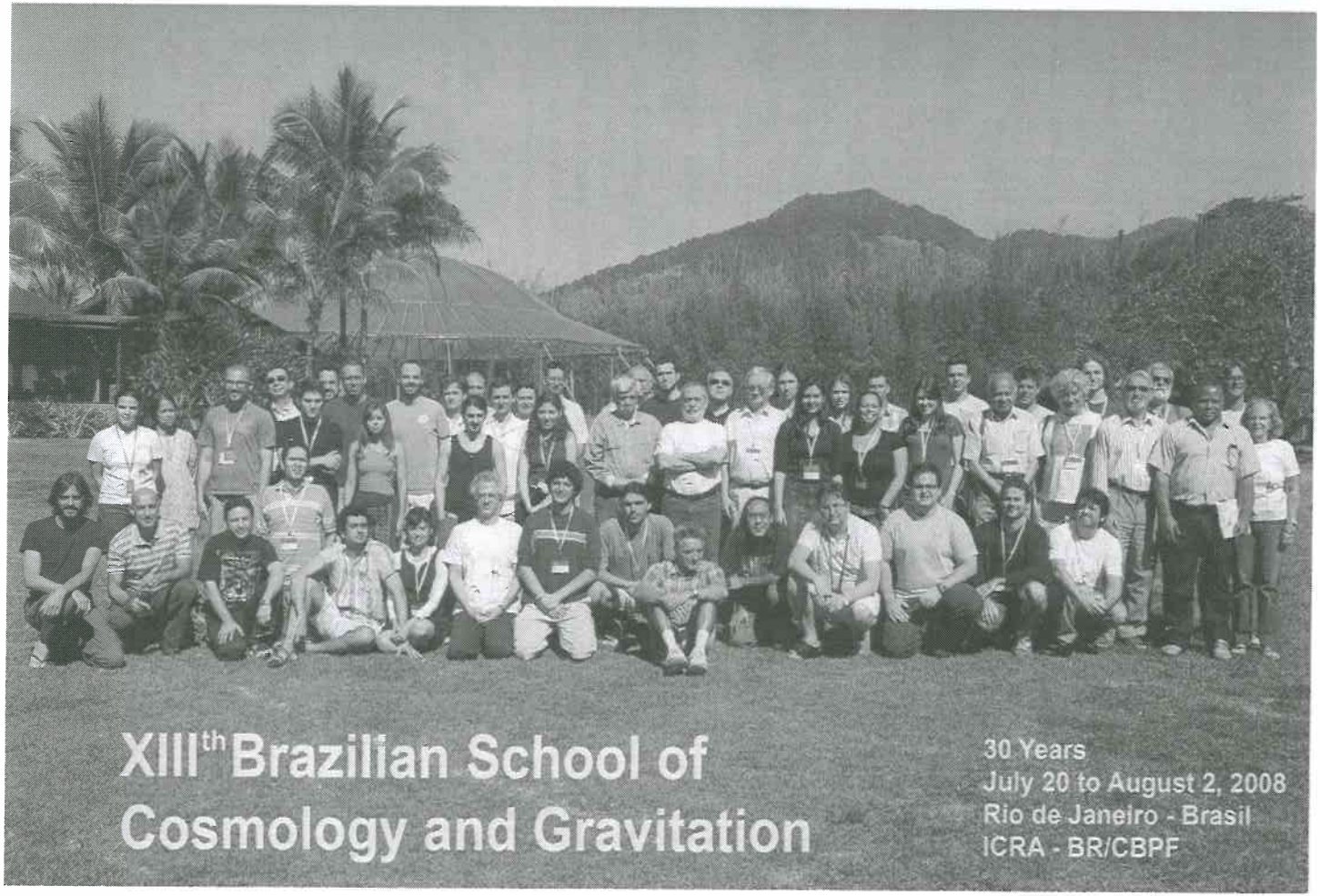
XIII th Brazilian School of
Cosmology and Gravitation
30 Years
July 20 to August 2, 2008
Rio de Janeiro - Brasil
ICRA - BR/CBPF

The Blackholic energy and the canonical Gamma-Ray Burst IV: the "long", " genuine short" and "fake - disguised short" GRBs[1]

Remo Ruffini*,†, Alexey G. Aksenov**, Maria Grazia Bernardini†,*, Carlo Luciano Bianco*,†, Letizia Caito†,*, Pascal Chardonnet‡,*, Maria Giovanna Dainotti†,*, Gustavo De Barros†,*, Roberto Guida†,*, Luca Izzo†,*, Barbara Patricelli†,*, Luis Juracy Rangel Lemos†,*, Michael Rotondo†,*, Jorge Armando Rueda Hernandez†,*, Gregory Vereshchagin* and She-Sheng Xue*

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Abstract. We report some recent developments in the understanding of GRBs based on the theoretical framework of the "fireshell" model, already presented in the last three editions of the "Brazilian School of Cosmology and Gravitation". After recalling the basic features of the "fireshell model", we emphasize the following novel results: 1) the interpretation of the X-ray flares in GRB afterglows as due to the interaction of the optically thin fireshell with isolated clouds in the CircumBurst Medium (CBM); 2) an interpretation as "fake - disguised" short GRBs of the GRBs belonging to the class identified by Norris & Bonnell; we present two prototypes, GRB 970228 and GRB 060614; both these cases are consistent with an origin from the final coalescence of a binary system in the halo of their host galaxies with particularly low CBM density $n_{cbm} \sim 10^{-3}$ particles/cm^3; 3) the first attempt to study a genuine short GRB with the analysis of GRB 050509B, that reveals indeed still an open question; 4) the interpretation of the GRB-SN association in the case of GRB 060218 via the "induced gravitational collapse" process; 5) a first attempt to understand the nature of the "Amati relation", a phenomenological correlation between the isotropic-equivalent radiated energy of the prompt emission E_{iso} with the cosmological rest-frame νF_ν spectrum peak energy $E_{p,i}$. In addition, recent progress on the thermalization of the electron-positron plasma close to their formation phase, as well as the structure of the electrodynamics of Kerr-Newman Black Holes are presented. An outlook for possible explanation of high-energy phenomena in GRBs to be expected from the AGILE and the Fermi satellites are discussed. As an example of high energy process, the work by Enrico Fermi dealing with ultrarelativistic collisions is examined. It is clear that all the GRB physics points to the existence of overcritical electrodynamical fields. In this sense we present some progresses on a unified approach to heavy nuclei and neutron stars cores, which leads to the existence of overcritical fields under the neutron star crust.

INTRODUCTION

Gamma-Ray Bursts (GRBs) represent very likely "the" most extensive computational, theoretical and observational effort ever carried out successfully in physics and astrophysics. The extensive campaign of observation from space based X-ray and γ-ray observatory, such as the *Vela*, CGRO, BeppoSAX, HETE-II, INTEGRAL, *Swift*, Agile, GLAST, R-XTE, *Chandra*, XMM satellites, have been matched by complementary observations in the radio wavelength (e.g. by the VLA) and in the optical band (e.g. by VLT, Keck, REM). The very fortunate situation occurs that these data can be confronted with a mature theoretical development.

We outline how this progress leads to the confirmation of three interpretation paradigms for GRBs we proposed

[1] Part I, Part II and Part III of these Lecture notes have been published respectively in *COSMOLOGY AND GRAVITATION: Xth Brazilian School of Cosmology and Gravitation: 25th Anniversary (1977-2002)*, M. Novello, S.E. Perez Bergliaffa (eds.), *AIP Conf. Proc.*, **668**, 16 (2003), see Ref. [1], in *COSMOLOGY AND GRAVITATION: XIth Brazilian School of Cosmology and Gravitation*, M. Novello, S.E. Perez Bergliaffa (eds.), *AIP Conf. Proc.*, **782**, 42 (2005), see Ref. [2], and in *COSMOLOGY AND GRAVITATION: XIIth Brazilian School of Cosmology and Gravitation*, M. Novello, S.E. Perez Bergliaffa (eds.), *AIP Conf. Proc.*, **910**, 55 (2007), see Ref. [3].

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The Sun, the Stars, the Universe and General Relativity
Proceedings of Sobral 2009

Editors: S.E.Perez Bergliaffa, M.Novello and R.Ruffini

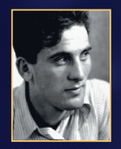
The conference entitled The Sun, the Stars, the Universe and General Relativity was held in Fortaleza, Brazil in May 2009 to celebrate three major events which occurred in Brazil and have fundamentally influenced scientific knowledge and development throughout the world.

1. The mission at Sobral to observe the Solar Eclipse of May 29, 1919 which according to Arthur Eddington, gave the first evidence for the observation of the bending of star light by the gravitational field of the Sun as predicted by Albert Einstein.

2.The discovery of the Pi meson by Cesare Lattes and Guiseppe Occhialini in Brazil and by Cecil Powell in England heralding the beginning of elementary particle physics.

3.The work on gravitational collapse by George Gamow and Mario Schoenberg on the URCA process, conceived at the "Cassino da URCA".

The proceedings of this conference highlight developments arising from these revolutionary discoveries including new space missions from South America, the Auger experiment in Argentina and the observations of gamma ray bursts and supernovae from the ESO Very Large Telescope in Chile.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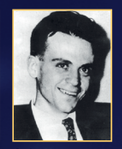
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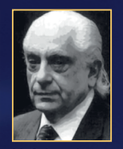
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THE SUN, THE STARS, THE UNIVERSE AND GENERAL RELATIVITY

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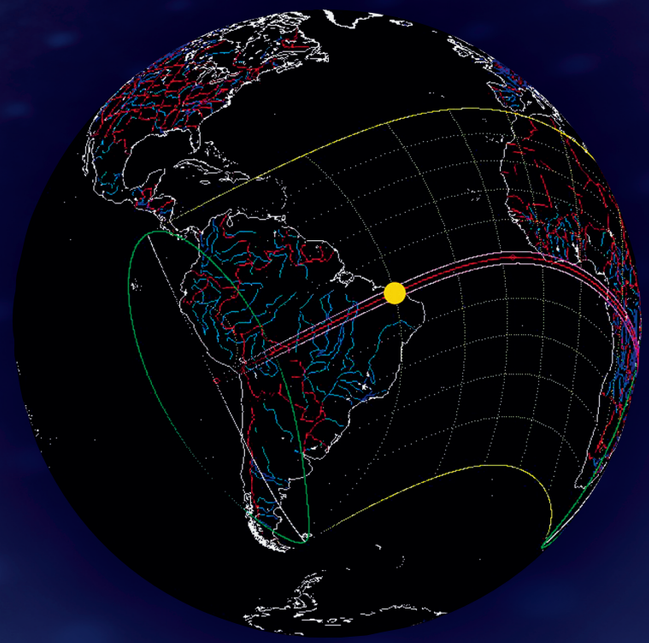

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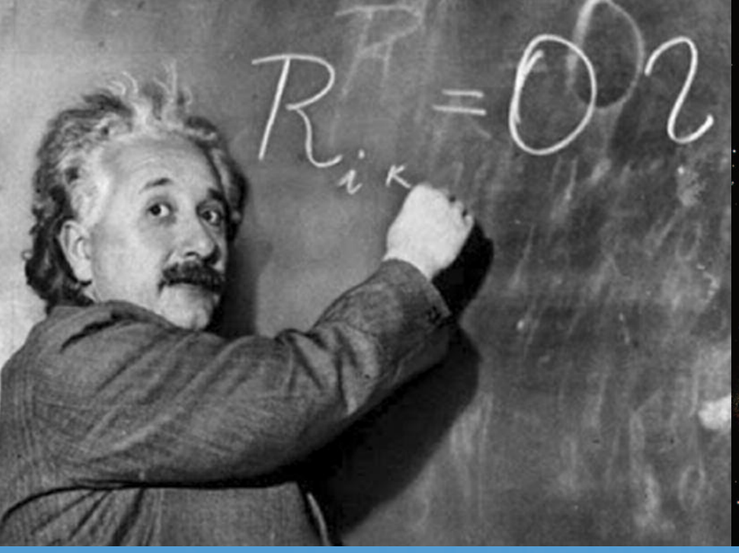
The Sun, the Stars, the Universe and General Relativity

Proceedings of Sobral 2009



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David Blair, Yvonne Choquet Bruhat, Thibault Damour, Paolo De Bernardis, C. W. Francis Everitt, Neil Gehrels, Riccardo Giacconi, Theodor Haensch, Stephen Hawking, Christine Jones Forman, Roy Kerr, Hagen Kleinert, Jutta Kunz, Claus Laemmerzahl, Tsvi Piran, Remo Ruffini (chair), Misao Sasaki, Humitaka Sato, Rashid Sunyaev, Gerard 't Hooft, Steven Weinberg

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Valdir Barbosa Bezerra (UFPb, João Pessoa), Sergio Barbosa Duarte (CBPF, Rio de Janeiro), Ulisses Barres de Almeida (CBPF, Rio de Janeiro) (co-chair), Riccardo Belvedere (CBPF, CAPES, Rio de Janeiro), Fabio Briscese (UFPb, João Pessoa), Bruno Carneiro da Cunha (UFPE, Recife), Gustavo de Barros (UEZO, Rio de Janeiro), Dimiter Hadjimichef (UFRGS, Porto Alegre), Ernesto Kemp (UNICAMP, Campinas), Renato Klippert (UNIFEI, Itajubá), Mário Luiz Lopes da Silva (UFPel, Pelotas), German Lugones (UFABC, São Paulo), Manuel Malheiro (ITA, São José dos Campos), Sheyse Martins de Carvalho (UFF, CAPES, Rio de Janeiro), Alexandre Mesquita (UCS, Caxias do Sul), Fernando Nobrega Santos (UFPE, Recife), Ana Virginia Penacchioni (INPE, CAPES, São José dos Campos), Debora Peres Menezes (UFSC, Florianópolis), Rodrigo Picanço Negreiros (UFF, Rio de Janeiro) (co-chair), Luis Rangel Lemos (UFT, Palmas), Moisés Razeira (Unipampa, Caçapava do Sul), Carlos Romero (UFPb, João Pessoa), Virgílio Augusto Sales Araripe (IFCE, Ceará), Ronald Shellard (CBPF, Rio de Janeiro), Ivan Siutsou (CBPF, CAPES, Rio de Janeiro), Daniel Tavares da Silva (UFPel, Pelotas), Helio Teixeira Coelho (UFPE, Recife), Elena Zaninoni (CBPF, CAPES, Rio de Janeiro), César Zen Vasconcellos (UFRGS, Porto Alegre) (co-chair)

THE SECOND ICRANet CÉSAR LATTES MEETING

The meeting, dedicated to the coordination of the ICRANet Scientific activities in Brazil prior to the MGXIV meeting in Rome in July 2015, will celebrate the 100th anniversary of the Einstein Equations. The scientific meeting will take place at UFF and at CBPF. The inauguration and concluding remarks will take place at Fundação Planetário da Cidade do Rio de Janeiro. Public lectures will be delivered at the Museum of Contemporary Art (MAC), at the Cassino da Urca, at UFPE, at UFPB, at IFCE and at Planetário do Rio de Janeiro. The meeting will cover observational activities in the X, gamma ray and UHECR, theoretical progress in the relativistic astrophysics of Neutron Stars, Black Holes, Gravitational Waves and Cosmology as well as the development of the Brazilian Science Data Center (BSDC): from galactic and extragalactic sources and as far back in time to the appearance of the first structures in our Universe. Status and perspectives for the ICRANet projects, within the IRAP PhD and EMJD Program, the associated post-docs, and presence of senior research leaders within all the ICRANet Centers will be reviewed.

Details on: www.icranet.org - Contacts: 2cl@icranet.org

Niterói (RJ) – UFF
The Fluminense Federal University.
Rio de Janeiro (RJ) - CBPF
Brazilian Center for Research in Physics.
Recife (PE) – UFPE
The Federal University of Pernambuco.
João Pessoa (PB) – UFPB
The Federal University of Paraíba.
Fortaleza (CE) – IFCE
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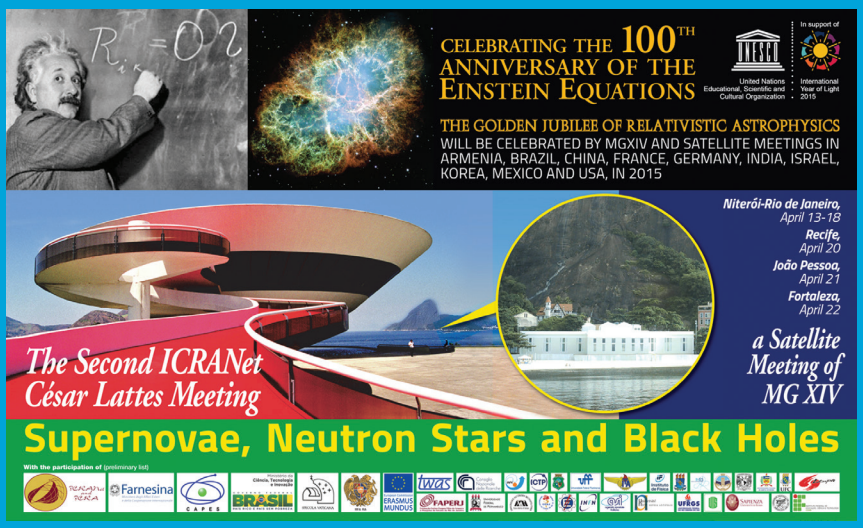
With the participation of (preliminary list)

Volume 1693

Conference collection

The Second ICRANet César Lattes Meeting

Supernovae, Neutron Stars and Black Holes



Rio de Janeiro - Niterói - João Pessoa - Recife - Fortaleza, Brazil
13–22 April 2015

Editors
Ulisses Barres de Almeida, Pascal Chardonnet, Rodrigo Picanco Negreiros, Jorge Rueda, Remo Ruffini, Gregory Vereshchagin and César Zen Vasconcellos

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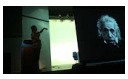
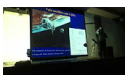
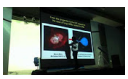
Public Lecture of Prof. Ruffini in João Pessoa

1		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 2 di ICRANet	4:01
2		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 1 di ICRANet	4:53
3		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 3 di ICRANet	11:01
4		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 6 di ICRANet	3:53
5		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 7 di ICRANet	0:25
6		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 4 di ICRANet	4:23
7		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 5 di ICRANet	1:27
8		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 8 di ICRANet	8:20

Fundação Planetário da Cidade do Rio de Janeiro
Monday, April 13, 2015

Universidade Federal Fluminense - UFF, Niterói, RJ
Tuesday, April 14, 2015

The Second ICRANet César Lattes Meeting
AIP Conf. Proc. 1693, 010003-1–010003-2; doi: 10.1063/1.4937178

Museu de Arte Contemporânea de Niterói - MAC - Niterói, RJ
Wednesday, April 15, 2015

MG14 ROME 12-18 JULY 2015

CELEBRATING THE 100TH ANNIVERSARY OF THE EINSTEIN EQUATIONS

In support of United Nations Educational, Scientific and Cultural Organization — International Year of Light 2015

FOURTEENTH MARCEL GROSSMANN MEETING

ON RECENT DEVELOPMENTS IN THEORETICAL AND EXPERIMENTAL GENERAL RELATIVITY, ASTROPHYSICS, AND RELATIVISTIC FIELD THEORIES

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Amati L., Angelantonj C., Barbiellini G., Bassan M., Battistelli E., Belinski V., Belli P., Benedetti R., Bernabei R., Bianchi M. (chair), Bianco C., Bini D., Buchert T., Burgio F., Capozziello S., Chakrabarti S., Chardonnet P., Dall'Agata G., De Angelis A., De Bernardis P., Della Valle M., Di Virgilio A., Fiorini E., Frasca S., Fré P., Frontera F., Giavalisco M., Giommi P., Gionti G., Ingrosso G., Jantzen R., Jetzer P., Lee H.W., Lerda A., Liberati S., Longo R., Mandolesi N., Marmo G., Masi S., Menotti P., Morselli A., Pelster A., Piacentini F., Pian E., Quevedo H., Riccioni F., Rosati P., Scarpetta E.V., Tavani M., Tino G., Titarchuk L., Vereshchagin G., Vitale S., Xue S.S., Zen Vasconcellos C.

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- **KOREA (Seoul)**: Kim S.P., Lee H.K.
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- **SWITZERLAND**: Durrer R., Jetzer P.
- **TURKEY**: Aliev A., Gurses M. • **UKRAINE**: Zhuk A.
- **UK**: Cruise A.M., Frenk C.S., Green M., Kibble T.
- **USA**: Abel T., Ashtekar A., Bardeen J., Carlstrom J., Cornish N., Dermer C., DeWitt Morette C., Drever R., Flanagan E., Fryer C., Jantzen R. (chair), Kolb R., Lousto C., Mashhoon B., Mathews G., Matzner R., Melia F., Mester J., Michelson P., Nordtvedt K., Parker L., Pretorius F., Pullin J., Schwarz J., Shapiro I., Shapiro S., Shoemaker D., Smoot G., van Nieuwenhuizen P., Zhang B.
- **UZBEKISTAN**: Zalaletdinov R.M. • **VATICAN CITY**: Gionti G.
- **VENEZUELA**: Barreto W., Herrera L. • **VIETNAM**: Long H.N.

THE GOLDEN JUBILEE OF RELATIVISTIC ASTROPHYSICS WILL BE CELEBRATED BY MG14 AND SATELLITE MEETINGS IN ARMENIA, BRAZIL, CHINA, FRANCE, GERMANY, INDIA, ISRAEL, KOREA, MEXICO AND USA, IN 2015

THE MARCEL GROSSMAN MEETINGS

Since 1975, the Marcel Grossman Meetings have been organized in order to provide opportunities for discussing recent advances in gravitation, general relativity and relativistic field theories, emphasizing mathematical foundations, physical predictions and experimental tests. The objective of these meetings is to elicit exchange among scientists that may deepen our understanding of space-time structures as well as to review the status of ongoing experiments aimed at testing Einstein's theory of gravitation and relativistic field theories either from the ground or from space. Previous meetings have been held in Trieste (1975) and (1979), Shanghai (1982), Rome (1985), Perth (1988), Kyoto (1991), Stanford (1994), Jerusalem (1997), Rome (2000), Rio (2003), Berlin (2006), Paris (2009), and Stockholm (2012). Interested scientists should address a member from any one of the organizing committees or the conference secretariat.
website: http://www.icra.it/MG/mg14/ email: mg14@icra.it

THE UNIVERSITY OF ROME "LA SAPIENZA"

With approximately 120,000 students and 60 Institutions, the University "la Sapienza", "Studium Urbis" in Latin, has become the largest center of learning in the Mediterranean. It was founded in 1303 by Pope Bonifacio VIII. In 1431 by the will of Pope Eugenio IV the University was given a fixed endowment. In 1527 the students gave origin to various Academies and the topics of teaching were further extended. In 1660 three major institutions were founded: the main library "Alessandrina", the splendid Botanical Garden on the Gianicolo Hills, both still operating today, the church "S. Ivo" and the palace of "la Sapienza", designed by Borromini, today part of the Senate of the Italian Republic. In 1935 part of the University was transferred to the new campus, designed by Piacentini, where Tullio Levi-Civita and Enrico Fermi were members of the Faculty of Sciences.

With the participation of (preliminary list)

MG14, Rome, July 12 - 18, 2015

Brazilian participants and students from Brazilian institutions

1.	Algoner Jorge, William C.	Federal University of Espirito Santo Brazil
2.	Araujo, Adriana Victoria	Institute for Theoretical Physics , UNESP Brazil
3.	Araujo Carvalho,	Geanderson ITA Brazil
4.	Arbañil, José	Instituto Tecnológico de Aeronáutica Brazil
5.	Baranov Pereira Raymundo, Iuri	Institute of Physics - University of São Paulo Brazil
6.	Bartosch Caminha, Gabriel	CAPES Post-doc Student at University of Ferrara
7.	Bassalo Crispino, Luis Carlos	Universidade Federal do Pará Brazil
8.	Batista dos Santos Grasiele	CAPES Post-doc Student at University “Sapienza” of Rome
9.	Belvedere, Riccardo	ICRANet Rio - CBPF Brazil
10.	Benetti, Micol	Observatório Nacional Rio de Janeiro Brazil
11.	Bengaly, Carlos	Observatório Nacional Brazil
12.	Bernar, Rafael	Universidade Federal do Pará Brazil
13.	Brandt Carlos Henrique	CAPES Student at University “Sapienza” of Rome”
14.	Briscese, Fabio	UFPB Brazil
15.	Camargo Rodrigues de Lima, Rafael	CAPES Post-doc Student at ICRANet
16.	Carneiro Da Cunha, Bruno	Departamento de Física - UFPE Brazil
17.	Celestino, Juliana	Rio de Janeiro State University Brazil
18.	Da Cunha Raupp, Augusto	Faperj Brazil
19.	De Araujo, Jose C N	INPE Brazil
20.	De Berredo-peixoto, Guilherme	Universidade Federal de Juiz de Fora Brazil
21.	De Gouveia Dal Pino, Elisabete	Universidade de Sao Paulo, Intituto de Astronomia, Geofisica e Ciencias Atmosfericas Brazil
22.	De Oliveira, Ednilton S.	Universidade Federal do Pará Brazil
23.	Ferrão, Lilian	Instituto Tecnológico da Aeronáutica Brazil
24.	Fraga Bernardo	CAPES Post-doc Student at University “Sapienza” of Rome
25.	Frajuca, Carlos	Sao Paulo Federal Institute Brazil
26.	Gonzalez Sanchez, Javier Ernesto	Observatório Nacional Brazil
27.	Gomes de Oliveira, Fernanda	EMJD Student at University “Sapienza” of Rome
28.	Grams, Guilherme	Federal University of Santa Catarina Brazil
29.	Guimaraes Carvalho, Gabriel	CAPES Student at University “Sapienza” of Rome”
30.	Jennen, Hendrik	Instituto de Fisica Teorica Brazil
31.	Kepler, Souza Oliveira	Universidade Federal do Rio Grande do Sul Brazil
32.	Khiali, Behrouz	Univrsity of Sao Paulo Brazil
33.	Klippert, Renato	Federal University of Itajubá Brazil
34.	Landim, Ricardo	University of Sao Paulo Brazil
35.	Liccardo, Vincenzo	ITA-Instituto Tecnologico de Aeronautica Brazil
36.	Lima Neto, Gastao	Universidade de São Paulo Brazil
37.	Loureiro Benone, Carolina	Universidade Federal do Pará Brazil
38.	Loureiro Giacchini, Breno	Centro Brasileiro de Pesquisas Físicas Brazil
39.	Lugones, Germán	Universidade Federal do ABC Brazil
40.	Macedo, Caio Filipe Bezerra	Universidade Federal do Para Brazil
41.	Magalhaes, Nadja	Federal University of Sao Paulo Brazil
42.	Malheiro, Manuel	Instituto Tecnologico de Aeronautica Brazil
43.	Menezes, Gabriel	Department of Physics, Federal Rural University of Rio de Janeiro -- UFRRJ Brazil
44.	Nemmen, Rodrigo	Universidade de Sao Paulo Brazil
45.	Novaes, Fábio	International Institute of Physics - UFRN Brazil
46.	Otoniel Da Silva, Edson	Instituto Tecnologico de Aeronautica Brazil
47.	Penacchioni, Ana Virginia	INPE Brazil
48.	Penna Neves, Ronaldo	Federal Technological University of Paraná Brazil
49.	Pereira, Jose	Instituto de Fisica Teorica - UNESP Brazil
50.	Pereira Lobo, Iarley	CAPES Student at University “Sapienza” of Rome”
51.	Peres Menezes, Debora	Universidade Federal de Santa Catarina Brazil
52.	Ramos, Rudnei	Rio de Janeiro State University Brazil
53.	Rocha, Flavia	ITA Brazil
54.	Santos, Samuel	Technological Institute of Aeronautics Brazil
55.	Shapiro, Ilya	Universidade Federal de Juiz de Fora Brazil
56.	Shellard, Ronald Cintra	CBPF Brazil
57.	Silva Bittencourt Eduardo	CAPES Post-doc Student at University “Sapienza” of Rome
58.	Singh, Chandra Bahadur	Instituto Astronomico e Geofisico (IAG-USP) Universidade de Sao Paulo Brazil
59.	Siutsou, Ivan	CAPES - ICRANet Rio Brazil
60.	Soares, Ivano Damiao	CBPF/MCTI Brazil
61.	Sversut Arsioli Bruno	EMJD Student at University “Sapienza” of Rome
62.	Vieira Lobato, Ronaldo	Instituto Tecnológico de Aeronáutica Brazil
63.	Zanchin, Vilson	Universidade Federal do ABC Brazil
64.	Zen Vasconcellos, César Augusto	Universidade Federal do Rio Grande do Sul - UFRGS Brazil

The Brazilian Science Data Center (BSDC)

The ICRANet Brazilian Science Data Center (BSDC) and Multi-frequency selection and studies of blazars

1 Topics

- Definition and set up of the technical infrastructure for the ICRANet Science Data Center in Pescara and Rio de Janeiro
- Development of a VO interface to the MAGIC published results repository and integration within the ASDC/BSDC tools.
- Implementation of VO + Web interfaces to catalogs of astronomical sources published as part of ICRANet research.
- Installation, adaptation and testing of software suitable for the generation of Fermi adaptive bin γ-ray light curves and construction of a database of blazar γ-ray light curves to be interfaced to ASDC/BSDC and Open Universe systems.
- Implementation, adaptation and testing of software for cross-correlation analysis of time series and light curves.
- Selection of large samples of high energy peaked(HSP)/high energy γ-ray emitting blazars (1WHSP and 2WHSP sample)
- Detection of γ-ray emission in HSP blazars (150 new Fermi of γ-ray detection of 2WHSP blazars: the 1BIGB sample)
- Search for possible spatial correlation between HSP blazars and astrophysical neutrinos
- Modelling of the variable SED of blazars using large multi-frequency/multi-temporal data sets
- Generation of high level multi-frequency data products of blazars (e.g. Fermi adaptive bin light curves, Swift spectra and X-ray light curves, optical polarization)

2 Participants

2.1 ICRANet participants

- Paolo Giommi
- Ulisses Barres de Almeida
- Narek Sahakyan
- Benno Bodmann

2.2 Ongoing collaborations

- Paolo Padovani (ESO)
- Elisa Resconi (TUM)
- MAGIC Collaboration
- ASDC

2.3 Past collaborations

- ASI-ASDC
- CESUP

2.4 Students/Postdocs

- Yu-Ling Chang
- Bruno Sversut Arsioli
- Bernardo Machado Fraga
- Carlos Enrique Brandt

3 Brief description

The activity includes two main components:

- the construction and consolidation of an ICRANet distributed science data center based in Pescara, Rio de Janeiro (this component is named BSDC, Brazilian Science Data Center), Yerevan, and other sites; discussions are ongoing for a possible expansion of these activities within the BRICS network. Concerning database expansion, the complete incorporation of VHE MAGIC dataset for AGNs within the BSDC/ASDC framework, is undergoing, with future expansion to other VHE collaborations being sough.

- a scientific part, based on the data coming from the ICRANet data center, dedicated to the identification of samples of high energy emitting blazars (e.g. 1/2 WHSP) and to the theoretical interpretation of the radio to γ-ray emission of selected bright blazars. The latter includes, for the first time, a detailed look and consideration of multi-band light curve cross-correlations within the SED analysis.

3.1 Implementation of the ICRANet Brazilian Science Data Center (BSDC)

Following the preparatory work carried out in the past year, the establishment of the ICRANet - Brazilian Science Data Center (BSDC) on the premises of ICRANet-Rio is ready to start the implementation phase. The BSDC will host a mirror copy of the ASDC (ASI Science Data Center) public data, catalogs and of all the data reduction and analysis software that is publicly available. Specific software for archive data access at BSDC will be developed as part of this project. It will also host public data from several projects in which the Brazilian community, and in particular the Brazilian centres participating in the BSDC, are involved. Three major steps are foreseen: 1) start up phase (concluded in 2016), 2) BSDC archive and team building (January to June 2017), 3) establishment of a fully functional BSDC and related science teams at CBPF/Rio (by the end of 2017).

When fully operation, but he end of next year, in its first phase of scientific operations, the BSDC will focus on very high energy data and polarised radiation. In parallel, the novel Yerevan component of the collaboration will focus in the production of Fermi high level data products, such as adaptive-binning γ-ray light curves of selected bright blazars. The BSDC is built in collaboration with the ASI Science Data Center (ASDC) and contributes to the development of the recently approved United Nations initiative named Open Universe.

3.2 High energy emitting blazars

3.2.1 The VHE blazar sample, 2WHSP

Blazars are a class of radio-loud active galactic nuclei (AGN) hosting a jet oriented at a small angle with respect to the line of sight [Blandford and Rees, 1978, Antonucci, 1993, Urry and Padovani, 1995]. The emission of these objects is non-thermal over most or the entire electromagnetic spectrum, from radio frequencies to hard γ-rays. HSP blazars play a crucial role in very high energy (VHE) astronomy. Observations have shown that HSPs are bright and variable sources of high energy γ-ray photons (TeVCat)[1] and that they are likely the dominant component of the extragalactic VHE background [Padovani et al., 1993, Giommi et al., 2006, Di Mauro et al., 2014, Giommi and Padovani, 2015, Ajello et al., 2015]. In fact, most of the extragalactic objects detected so far above a few GeV are HSPs [Giommi et al., 2009, Padovani and Giommi, 2015, Arsioli et al., 2015, Ackermann et al., 2016, see also TeVCat]. However, only a few hundred HSP blazars are above the sensitivity limits of currently available γ-ray surveys. Significantly enlarging the number of high energy blazars is important to better understand their role within the AGN phenomenon, and should shed light on the cosmological evolution of blazars, which is still a matter of debate.

Arsioli et al. [2015] (Paper I) built a HSP catalog, 1WHSP, based on WISE color-color diagram with the sources inside the (*S*edentary WISE color region)SWCD region, extended from WISE blazar strip [Massaro et al., 2011, D'Abrusco et al., 2012, Massaro et al., 2012] to include all the sources from the Sedentary survey blazars [Giommi et al., 1999, 2005, Piranomonte et al., 2007]. They cross-matched the AllWISE sources [Cutri et al., 2013] in SWCD with different radio and X-ray catalogs using TOPCAT[2], applied spectrum slope criteria, and selected the source with Synchrotron peak $\nu_{peak} > 10^{15}$ Hz [Padovani and Giommi, 1995, Abdo et al., 2010] and Galactic latitude $b >$

[1] http://tevcat.uchicago.edu
[2] http://www.star.bris.ac.uk/ mbt/topcat/

$|20^\circ|$. Note that there are three slope criteria in Paper I, which are radio to IR slope, IR to X-ray slope, and the AllWISE W1 to W3 slope; the criteria are obtained from normalized and rescaled the SEDs of three well-known HSP blazars.

Recently, Chang et al. [2016] (Paper II) assembled a most complete and largest HSP catalog, 2WHSP, an extension of 1WHSP catalog to $b > |20^\circ|$. Similar as Paper I, building the 2WHSP catalog starts from cross-matching three radio catalogs [NVSS, FIRST, and SUMSS: Condon et al., 1998, White et al., 1997, Manch et al., 2003] with AllWISE IR catalog and then with various X-ray catalogs [RASS BSC and FSC, 1SWXRT and deep XRT GRB, 3XMM, XMM slew, Einstein IPC, IPC slew, WGACAT, Chandra, and BMW: Voges et al., 1999, 2000, D'Elia et al., 2013, Puccetti et al., 2011, Rosen et al., 2016, Saxton et al., 2008, Harris et al., 1993, Elvis et al., 1992, White et al., 2000, Evans et al., 2010, Panzera et al., 2003]. However, 2WHSP is not subjected to WISE color-color diagram and the AllWISE W1-W3 slope criterion when selecting the sources. Therefore, the 2WHSP sample will not miss some good HSPs that IR and optical radiation are dominated by host galaxies. We used ASDC SED tool[3] to examine and fit the Synchrotron component with a third degree polynomial to get the Synchrotron peak position (ν_{peak}) and Synchrotron peak flux ($\nu_{peak} f_{\nu_{peak}}$) for each WHSP pre-selection candidate.

The 2WHSP catalog totally includes 1 691 sources with 540 known HSPs, 288 new HSPs, and 814 HSP candidates. The name "WHSP" stands for WISE high Synchrotron peaked blazars since except for one source, 2WHSP J135340.2−663958.0, all the other sources in 2WHSP have WISE counterparts. For each 2WHSP source, we adopted as best coordinates those taken from the WISE catalog. The average ν_{peak} for our catalog is $\langle \log \nu_{peak} \rangle = 16.22 \pm 0.02$ Hz and the average redshift is $\langle z \rangle = 0.331 \pm 0.008$. We have shown that the SWCD region needs to be extended to include HSPs in which the host galaxy is dominant. The 2WHSP radio logN-logS shows that the number of HSP blazars over the whole sky is $> 2,000$ and that HBL make up $\sim 10\%$ of all BL Lacs.

3.2.2 The 1BIGB catalog

The 2WHSP sources has been used as seeds of HE and VHE searches to discover new VHE detections or to find the counterparts of VHE catalogs. So far, 439 of 2WHSP sources have counterparts within the error circles from the 3FGL catalog; there is still a large number of 2WHSP HSPs which does not have γ-ray detections yet. Therefore, Arsioli and Chang [2016] analyzed bright 2WHSP sources using archival Fermi-LAT data integrated over 7.2 years observations, Pass 8 data release. By using the position of 2WHSP

[3] http://tools.asdc.asi.it/SED

sources as seeds for the likelihood analysis, we found 150 previously unreported γ-ray detections.

The 150 new γ-ray sources are named with the acronym 1BIGB (first version of the Brazil ICRANet Gamma-ray Blazar catalog). Clearly, the subsample of 2WHSP blazars that have not yet been detected by Fermi-LAT is a key representative population of faint γ-ray emitters, and we show how the new detections down to TS $>$ 10 level can probe the faint-end of the flux-distribution.

The new detections also unveil a fraction of the γ-ray sky. Our current work enabled us to associate a relevant fraction of the IGRB to a population of faint γ-ray emitters that had been previously unresolved. Moreover, we show the increasing relevance of faint-HSPs for the IGRB composition with respect to energy, specially for E $>$ 10 GeV, reaching 6-8% in the $100 - 200$ GeV band.

Motivated by this first assessment, we plan to perform a complete γ-ray analysis of the 2WHSP sample, down to the lowest fluxes, and probably extend the search to other blazar families with potential to improve the γ-ray description of lower-significance γ-ray blazars, also helping to constrain the origins of the extragalactic diffuse -ray background.

3.2.3 Correlation between HSPs and neutrinos

Padovani et al. [2016] cross-matched the 2WHSP with IceCube neutrino events. Their result suggests that,among the blazar family, HSPs blazars are the most possible counterparts for neutrino. They further reported five neutrino events which have HSPs counterparts. Resconi et al. [2016] have presented evidence of a direct connection between 2FHL HBLs, very high energy neutrinos, and ultra high energy cosmic rays (UHECRs) when cross-matching 2FHL HBL subsample with UHECRs from the Pierre Auger Observatory and the Telescope Array. In a nutshell, HSPs catalogs are important and timely for HE and VHE astronomy.

3.2.4 Temporal study of the spectral energy distribution of blazars

Many of the studies on blazars are focused on their spectral energy distribution (SED). These provide a photographic view of the source state, which in turn gives an overview of the emission energy balance. Despite we can get some limits on models, the approach not able to satisfactorily explain the dynamics of the physical emission processes, because they evolve in time in a complex way, as can be seen by the emission's variability and multi-band correlations. In particular, there is evidence for the existence of delays between

emissions at different frequencies, a feature enot accounted for in traditional SSC models of the SED. To try and get around these problems, other models have been proposed, such as those with contribution from radiation fields external to the jets for the inverse-Compton emission, or models where an emission zone is not homogeneous and multiple emitting blobs are considered to build up simultaneously the SED. However promising, these studies remain incipient and require further analysis. Key to the success of more in-depth studies is the availability of a large amount of multi-band data, for a detailed and combined view of the spectral properties and temporal evolution of the sources.

Usually, when dealing with the temporal evolution of blazar emission, the most commonly used method is to consider strictly simultaneous observations in multi-wavelength campaigns, and try to impose limits on different models. However, as previously mentioned, the emission at different frequencies may be correlated. Correlations between different bands are useful for determining the emission mechanism and constrain emitting region. In addition, if a correlation is discovered between two frequencies, it can be used to predict the emission of sources not yet detected. Some studies have found correlations in flare emission between, for example, radio and gamma rays and between optical and gamma rays. These multi-band correlations, if real, imply a delay in the variation of the emission at different frequencies. It is then clear, in these cases, that strictly simultaneous observations are not exploiting the same state of a source, since the lags are not taken into account. In order to analyze the time evolution of the emission, it is necessary to first analyse the multi-band correlations and to determine the lags between them, and then to collect the data of simultaneous observations, that is, separated by a period of time similar to the lag. This allows for a more rigorous study of emission models and the imposition of limits on their parameters. Although there are codes to calculate correlations and lags, a tool that would automate the whole process, from data selection and lag calculation to the construction of simultaneous SEDs, would be of immense value to the scientific community and could be integrated to the ASDC, making it available in a fast, easy and effective way for everyone. This is one of the technical goals and legacies of this work.

At first we intend to use a specific source, Mkn421, as a prototype for our study. We plan to publish a paper about the analysis of the temporal evolution of this source and its modelling by the end of the first year of research. At the same time, we have a preliminary version of the lags calculation tool and light curve construction already ready to be tested for a greater number of sources and deployment in ASDC.

With this study, we hope to be able to shed some light on the cause of variable emission in blazars. The lags estimation will allow us to determine how

the emission at different frequencies are related and which physical mechanisms may be responsible for such a relationship. The construction of simultaneous SEDs will serve to discriminate between the different emission models already proposed, as well as to find out whether or not there is periodicity in a range of time scales. Today we have a large amount of data at hand, making it possible to create large catalogs of blazars (such as BZCAT and 1WHSP), making statistical studies more rigorous and precise. In order to work with a large number of sources it is necessary that the selection of simultaneous data be, to a great extent, automated. ASDC, being a great integrated platform for data analysis and visualisation, is a perfect option to implement this procedure, making the determination of correlations, lags and the subsequent construction of simultaneous SEDs easier, faster and more accessible to the community at large. The beginning of the implementation of the Brazilian Science Data Center (BSDC) in CBPF, an integrated data platform analogous to ASDC, focusing on collecting data from missions to which Brazil is a partner, will be another opportunity for the implementation of the automated analysis of the time evolution of blazars.

4 Publications

- Barres de Almeida, U.; Giommi, P.; Brandt, C.; Fraga, B. XXX, Proceedings of IWARA, in press.
- Chang, Y.L.; Arsioli, B.; Giommi, P.; Padovani, P. 2WHSP: A multi-frequency selected catalog of VHE gamma-ray blazars and blazar candidates 2016, A&A, in press
- Arsioli, B.; Chang, Y.L. Searching for γ-ray signature in WHSP blazars: Fermi-LAT detection of 150 excess signal in the 0.3-500 GeV band (1BIGB sample) 2016, A&A, in press
- Padovani P., Resconi E., Giommi P., Arsioli B., Chang Y.L.
  Extreme blazars as counterparts of IceCube astrophysical neutrinos
  2016 MNRAS 457, 3582

Bibliography

A.˜A. Abdo, M Ackermann, I Agudo, M Ajello, H.˜D. Aller, M.˜F. Aller, E Angelakis, A.˜A. Arkharov, M Axelsson, U Bach, and Et al.
The Spectral Energy Distribution of Fermi Bright Blazars.
ApJ, 716:30–70, 2010.
doi: 10.1088/0004-637X/716/1/30.

M. Ackermann, M. Ajello, W. B. Atwood, L. Baldini, J. Ballet, G. Barbiellini, D. Bastieri, J. Becerra Gonzalez, R. Bellazzini, E. Bissaldi, R. D. Blandford, E. D. Bloom, R. Bonino, E. Bottacini, T. J. Brandt, J. Bregeon, P. Bruel, R. Buehler, S. Buson, G. A. Caliandro, R. A. Cameron, R. Caputo, M. Caragiulo, P. A. Caraveo, E. Cavazzuti, C. Cecchi, E. Charles, A. Chekhtman, C. C. Cheung, J. Chiang, G. Chiaro, S. Ciprini, J. M. Cohen, J. Cohen-Tanugi, L. R. Cominsky, J. Conrad, A. Cuoco, S. Cutini, F. D'Ammando, A. de Angelis, F. de Palma, R. Desiante, M. Di Mauro, L. Di Venere, A. Domínguez, P. S. Drell, C. Favuzzi, S. J. Fegan, E. C. Ferrara, W. B. Focke, P. Fortin, A. Franckowiak, Y. Fukazawa, S. Funk, A. K. Furniss, P. Fusco, F. Gargano, D. Gasparrini, N. Giglietto, P. Giommi, F. Giordano, M. Giroletti, T. Glanzman, G. Godfrey, I. A. Grenier, M.-H. Grondin, L. Guillemot, S. Guiriec, A. K. Harding, E. Hays, J. W. Hewitt, A. B. Hill, D. Horan, G. Iafrate, Dieter Hartmann, T. Jogler, G. Jóhannesson, A. S. Johnson, T. Kamae, J. Kataoka, J. Knödlseder, M. Kuss, G. La Mura, S. Larsson, L. Latronico, M. Lemoine-Goumard, J. Li, L. Li, F. Longo, F. Loparco, B. Lott, M. N. Lovellette, P. Lubrano, G. M. Madejski, S. Maldera, A. Manfreda, M. Mayer, M. N. Mazziotta, P. F. Michelson, N. Mirabal, W. Mitthumsiri, T. Mizuno, A. A. Moiseev, M. E. Monzani, A. Morselli, I. V. Moskalenko, S. Murgia, E. Nuss, T. Ohsugi, N. Omodei, M. Orienti, E. Orlando, J. F. Ormes, D. Paneque, J. S. Perkins, M. Pesce-Rollins, V. Petrosian, F. Piron, G. Pivato, T. A. Porter, S. Rainò, R. Rando, M. Razzano, S. Razzaque, A. Reimer, O. Reimer, T. Reposeur, R. W. Romani, M. Sánchez-Conde, P. M. Saz Parkinson, J. Schmid, A. Schulz, C. Sgrò, E. J. Siskind, F. Spada, G. Spandre, P. Spinelli, D. J. Suson, H. Tajima, H. Takahashi, M. Takahashi, T. Takahashi, J. B. Thayer, D. J. Thompson, L. Tibaldo, D. F. Torres, G. Tosti, E. Troja, G. Vianello, K. S. Wood, M. Wood, M. Yassine, G. Zaharijas, and S. Zimmer.
2FHL: The Second Catalog of Hard Fermi-LAT Sources.
ApJS, 222:5, 2016.

URL http://arxiv.org/abs/1508.00444.

M. Ajello, D. Gasparrini, M. Sanchez-Conde, G. Zaharijas, M. Gustafsson, J. Cohen-Tanugi, C. D. Dermer, Y. Inoue, D. Hartmann, M. Ackermann, K. Bechtol, A. Franckowiak, A. Reimer, R. W. Romani, and A. W. Strong.
The Origin of the Extragalactic Gamma-Ray Background and Implications for Dark-Matter Annihilation.
ApJ, 800(2):L27, 2015.
doi: 10.1088/2041-8205/800/2/L27.
URL http://arxiv.org/abs/1501.05301http://dx.doi.org/10.1088/2041-8205/800/2/L27.

R. Antonucci.
Unified Models for Active Galactic Nuclei and Quasars.
ARA&A, 31(1):473–521, 1993.
ISSN 00664146.
doi: 10.1146/annurev.astro.31.1.473.

B. Arsioli, B. Fraga, P. Giommi, P. Padovani, and P. M. Marrese.
1WHSP: an IR-based sample of ˜1,000 VHE gamma-ray blazar candidates.
A&A, 579:A34, 2015.
doi: 10.1051/0004-6361/201424148.
URL http://arxiv.org/abs/1504.02801.

Bruno Arsioli and Yu-Ling Chang.
Searching for $/gamma$-ray signature in WHSP blazars: Fermi-LAT detection of 150 excess signal in the 0.3-500 GeV band.
A&A, in press, 2016.

R. Blandford and M. Rees.
Some comments on radiation mechanisms in Lacertids.
In A. M. Wolfe, editor, *Pittsburgh Conf. BL Lac Objects*, pages 341–347, Pittsburgh, 1978. University of Pittsburgh press.

Yu-Ling Chang, Bruno Arsioli, Paolo Giommi, and Paolo Padovani.
2WHSP: A catalog of HE and VHE $/gamma$-ray blazars and blazar candidates.
A&A, in press, 2016.

J.˜J. Condon, W.˜D. Cotton, E.˜W. Greisen, Q.˜F. Yin, R.˜A. Perley, G.˜B. Taylor, and J.˜J. Broderick.
The NRAO VLA Sky Survey.
AJ, 115:1693–1716, 1998.
doi: 10.1086/300337.

R. M. Cutri, E. L. Wright, T. Conrow, J. W. Fowler, P. R. M. Eisenhardt, C. Grillmair, J. D. Kirkpatrick, F. Masci, H. L. McCallon, S. L. Wheelock, S. Fajardo-Acosta, L. Yan, D. Benford, M. Harbut, T. Jarrett, S. Lake, D. Leisawitz, M. E. Ressler, S. A. Stanford, C. W. Tsai, F. Liu, G. Helou, A. Mainzer, D. Gettings, A. Gonzalez, D. Hoffman, K. A. Marsh, D. Padgett, M. F. Skrutskie, R. P. Beck, M. Papin, and M. Wittman.
Explanatory Supplement to the AllWISE Data Release Products.
Technical report, November 2013.

R D'Abrusco, F Massaro, M Ajello, J.˜E. Grindlay, H.˜A. Smith, and G Tosti.
Infrared Colors of the Gamma-Ray-detected Blazars.
ApJ, 748:68, 2012.
doi: 10.1088/0004-637X/748/1/68.

V. D'Elia, M. Perri, S. Puccetti, M. Capalbi, P. Giommi, D. N. Burrows, S. Campana, G. Tagliaferri, G. Cusumano, P. Evans, N. Gehrels, J. Kennea, A. Moretti, J. A. Nousek, J. P. Osborne, P. Romano, and G. Stratta.
The seven year Swift -XRT point source catalog (1SWXRT).
A&A, 551:A142, 2013.
ISSN 0004-6361.
doi: 10.1051/0004-6361/201220863.
URL `http://adsabs.harvard.edu/abs/2013A{&}A...551A.142D`.

M. Di Mauro, F. Donato, G. Lamanna, D. A. Sanchez, and P. D. Serpico.
Diffuse Γ-Ray Emission From Unresolved Bl Lac Objects.
ApJ, 786(2):129, 2014.
ISSN 0004-637X.
doi: 10.1088/0004-637X/786/2/129.
URL `http://adsabs.harvard.edu/abs/2014ApJ...786..129D`.

Martin Elvis, David Plummer, Jonathan Schachter, and G. Fabbiano.
The Einstein Slew Survey.
ApJS, 80:257–303, 1992.
ISSN 0717-6163.
doi: 10.1007/s13398-014-0173-7.2.
URL `http://www.ncbi.nlm.nih.gov/pubmed/15003161http://cid.oxfordjournals.org/lookup/doi/10.1093/cid/cir991http://www.scielo.cl/pdf/udecada/v15n26/art06.pdfhttp://www.scopus.com/inward/record.url?eid=2-s2.0-84861150233{&}partnerID=tZOtx3y1`.

Ian N. Evans, Francis A. Primini, Kenny J. Glotfelty, Craig S. Anderson, Nina R. Bonaventura, Judy C. Chen, John E. Davis, Stephen M. Doe, Janet D. Evans, Giuseppina Fabbiano, Elizabeth C. Galle, Danny G.

Gibbs, John D. Grier, Roger M. Hain, Diane M. Hall, Peter N. Harbo, Xiangqun (Helen) He, John C. Houck, Margarita Karovska, Vinay L. Kashyap, Jennifer Lauer, Michael L. McCollough, Jonathan C. McDowell, Joseph B. Miller, Arik W. Mitschang, Douglas L. Morgan, Amy E. Mossman, Joy S. Nichols, Michael A. Nowak, David A. Plummer, Brian L. Refsdal, Arnold H. Rots, Aneta Siemiginowska, Beth A. Sundheim, Michael S. Tibbetts, David W. Van Stone, Sherry L. Winkelman, and Panagoula Zografou.
THE CHANDRA SOURCE CATALOG.
ApJS, 189(1):37–82, 2010.
ISSN 0067-0049.
doi: 10.1088/0067-0049/189/1/37.
URL `http://stacks.iop.org/0067-0049/189/i=1/a=37?key=crossref.42a9a7044ff77f3df9aa9f5aa3c7d167`.

P Giommi, M T Menna, and P Padovani.
The Sedentary Multi-Frequency Survey . I . arXiv : astro-ph / 9907014v1 1 Jul 1999.
MNRAS, 310:465–475, 1999.

P Giommi, S Piranomonte, M Perri, and P Padovani.
The Sedentary Survey of Extreme High Energy Peaked BL Lacs. II. The Catalog and Spectral Properties.
A&A, 434(1):385–396, 2005.
URL `http://www.aanda.org/articles/aa/pdf/2005/16/aa1789.pdf`.

P Giommi, S Colafrancesco, E Cavazzuti, M Perri, and C Pittori.
Non-thermal Cosmic Backgrounds from Blazars: the contribution to the CMB, X-ray and gamma-ray Backgrounds.
A&A, 445:843–855, 2006.
ISSN 0004-6361.
doi: 10.1051/0004-6361:20053402.
URL `http://arxiv.org/abs/astro-ph/0508034`.

Paolo Giommi and Paolo Padovani.
A simplified view of blazars: contribution to the X-ray and gamma-ray cosmic backgrounds.
MNRAS, 450:2404–2409, 2015.
doi: 10.1093/mnras/stv793.
URL `http://arxiv.org/abs/1504.01978http://dx.doi.org/10.1093/mnras/stv793`.

Paolo Giommi, Sergio Colafrancesco, Paolo Padovani, Dario Gasparrini, Elisabetta Cavazzuti, and Sara Cutini.

The number counts, luminosity functions and evolution of microwave-selected (WMAP) blazars and radio galaxies.
A&A, 508:107–115, 2009.
ISSN 0004-6361.
doi: 10.1051/0004-6361/20078905.
URL http://arxiv.org/abs/0908.0652.

D. E. Harris, W. Forman, I. M. Gioia, J. A. Hale, Jr. Harnden, F. R., C. Jones, T. Karakashian, T. Maccacaro, J. D. McSweeney, and F. A. Primini.
The Einstein Observatory catalog of IPC X ray sources. Volume 1E: Documentation, 1993.

T. Manch, T. Murphy, H. J. Buttery, J. Curran, R. W. Hunstead, B. Piestrzynski, J. G. Robertson, and E. M. Sadler.
SUMSS: A wide-field radio imaging survey of the southern sky - II. The source catalogue.
MNRAS, 342(4):1117–1130, 2003.
ISSN 00358711.
doi: 10.1046/j.1365-8711.2003.06605.x.

Enrico Massaro, Roberto Nesci, and Silvia Piranomonte.
The colours of BL Lac objects: a new approach to their classification.
MNRAS, 422(3):2322–2331, 2012.
ISSN 00358711.
doi: 10.1111/j.1365-2966.2012.20782.x.
URL http://adsabs.harvard.edu/abs/2012MNRAS.422.2322M.

F Massaro, R D'Abrusco, M Ajello, J.˜E. Grindlay, and H.˜A. Smith.
Identification of the Infrared Non-thermal Emission in Blazars.
ApJ, 740:L48, 2011.
doi: 10.1088/2041-8205/740/2/L48.

P. Padovani and P. Giommi.
A simplified view of blazars: the very high energy -ray vision.
MNRAS, 446(1):L41–L45, 2015.
ISSN 1745-3925.
doi: 10.1093/mnrasl/slu164.
URL http://adsabs.harvard.edu/abs/2015MNRAS.446L..41P.

P. Padovani, G. Ghisellini, A. C. Fabian, and A. Celotti.
Radio-loud AGN and the extragalactic gamma-ray background.
MNRAS, 260(2):L21–L24, 1993.
ISSN 0717-6163.
doi: 10.1007/s13398-014-0173-7.2.

URL http://www.ncbi.nlm.nih.gov/pubmed/15003161http://cid.oxfordjournals.org/lookup/doi/10.1093/cid/cir991http://www.scielo.cl/pdf/udecada/v15n26/art06.pdfhttp://www.scopus.com/inward/record.url?eid=2-s2.0-84861150233{&}partnerID=tZOtx3y1.

Paolo Padovani and Paolo Giommi.
The connection between x-ray- and radio-selected BL Lacertae objects.
ApJ, 444:567–581, 1995.

Paolo Padovani, E Resconi, P Giommi, B Arsioli, and Y L Chang.
Extreme blazars as counterparts of IceCube astrophysical neutrinos.
MNRAS, 457:3582–3592, 2016.

M R Panzera, S Campana, S Covino, D Lazzati, R P Mignani, A Moretti, and G Tagliaferri.
Astrophysics The Brera Multi-scale Wavelet ROSAT HRI source catalogue.
Astron. Astrophys., 399:351–364, 2003.
doi: 10.1051/0004-6361.

S. Piranomonte, M. Perri, P. Giommi, H. Landt, and P. Padovani.
The sedentary survey of extreme high-energy peaked BL Lacs.
A&A, 470(2):787–809, 2007.
ISSN 0004-6361.
doi: 10.1051/0004-6361:20077086.
URL http://adsabs.harvard.edu/abs/2007A{&}A...470..787P.

S Puccetti, M Capalbi, P Giommi, M Perri, G Stratta, L Angelini, D.˜N. Burrows, S Campana, G Chincarini, G Cusumano, N Gehrels, A Moretti, J Nousek, J.˜P. Osborne, and G Tagliaferri.
The Swift serendipitous survey in deep XRT GRB fields (SwiftFT). I. The X-ray catalog and number counts.
A&A, 528:A122, 2011.
doi: 10.1051/0004-6361/201015560.

E. Resconi, S. Coenders, P. Padovani, P. Giommi, and L. Caccianiga.
Connecting blazars with ultra high energy cosmic rays and astrophysical neutrinos.
Phys. Review Lett., submitted, 2016.

S. R. Rosen, N. A. Webb, M. G. Watson, J. Ballet, D. Barret, V. Braito, F. J. Carrera, M. T. Ceballos, M. Coriat, R. Della Ceca, G. Denkinson, P. Esquej, S. A. Farrell, M. Freyberg, F. Grisé, P. Guillout, L. Heil, D. Law-Green, G. Lamer, D. Lin, R. Martino, L. Michel, C. Motch, A. Nebot Gomez-Moran, C. G. Page, K. Page, M. Page, M. W. Pakull, J. Pye, A. Read, P. Rodriguez,

M. Sakano, R. Saxton, A. Schwope, A. E. Scott, R. Sturm, I. Traulsen, V. Yershov, and I. Zolotukhin.
The XMM-Newton serendipitous survey. VII. The third XMM-Newton serendipitous source catalogue.
A&A, 590(3):A1, 2016.
URL `http://arxiv.org/abs/1504.07051`.

R. D. Saxton, a. M. Read, P. Esquej, M. J. Freyberg, B. Altieri, and D. Bermejo.
The first XMM-Newton slew survey catalogue: XMMSL1.
A&A, 480(2):611–622, 2008.
ISSN 0004-6361.
doi: 10.1051/0004-6361:20079193.
URL `http://www.aanda.org/10.1051/0004-6361:20079193`.

C Megan Urry and Paolo Padovani.
Unified Schemes for Radio-Loud Active Galactic Nuclei.
PASP, 107:803–845, 1995.

W. Voges, B. Aschenbach, Th. Boller, H. Bräuninger, U. Briel, W. Burkert, K. Dennerl, J. Englhauser, R. Gruber, F. Haberl, G. Hartner, G. Hasinger, M. Kürster, E. Pfeffermann, W. Pietsch, P. Predehl, C. Rosso, J. H. M. M. Schmitt, J. Trümper, and H. U. Zimmermann.
The ROSAT all-sky survey bright source catalogue.
A&A, 349:389–405, 1999.
ISSN 0004-6361.
URL `http://adsabs.harvard.edu/abs/1999A{&}A...349..389V`.

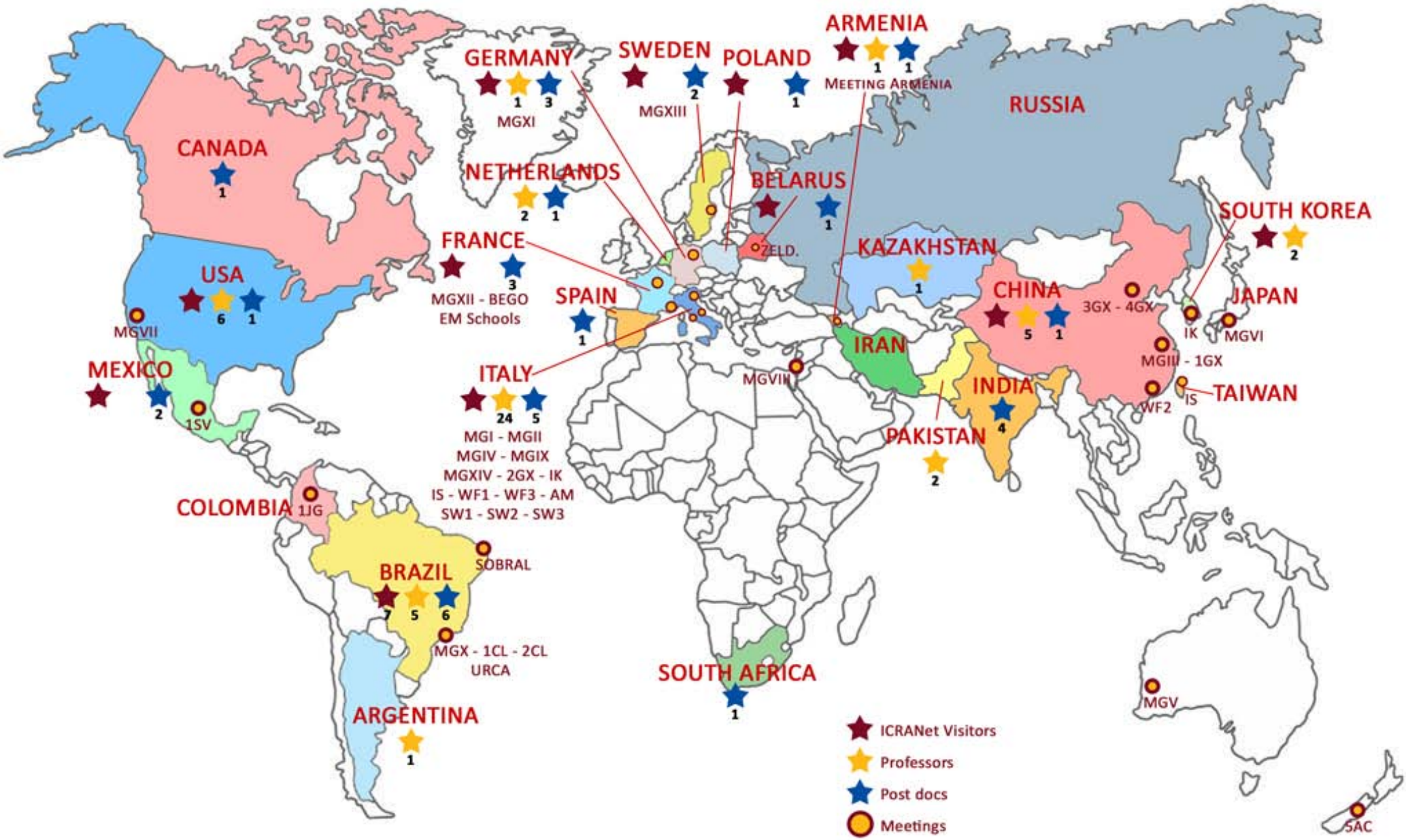
W. Voges, B. Aschenbach, T. Boller, H. Brauninger, U. Briel, W. Burkert, K. Dennerl, J. Englhauser, R. Gruber, F. Haberl, G. Hartner, G. Hasinger, E. Pfeffermann, W. Pietsch, P. Predehl, J. Schmitt, J. Trumper, and U. Zimmermann.
ROSAT all-sky survey faint source catalogue.
In *IAU Circ.*, 2000.

N.E. White, P Giommi, and L. Angelini.
The WGACAT version of the ROSAT PSPC Catalogue, Rev. 1.
VizieR Online Data Cat., 2000.

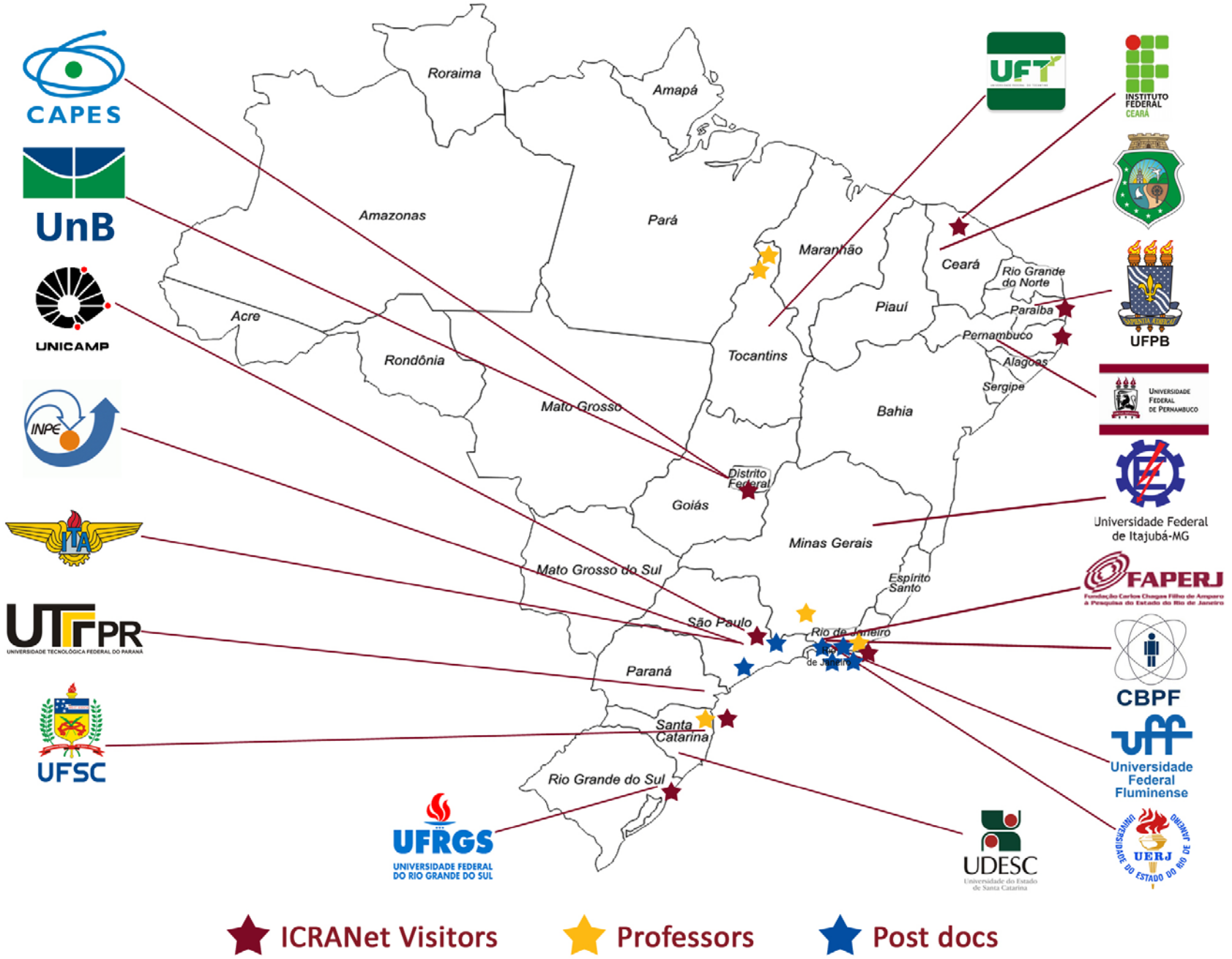
Richard L. White, Robert H. Becker, David J. Helfand, and Michael D. Gregg.
A Catalog of 1.4 GHz Radio Sources from the FIRST Survey.
ApJ, 475(2):479–493, 1997.
ISSN 0004-637X.
doi: 10.1086/303564.

Maps of collaboration agreements of ICRANet

ICRANet International collaboration Agreements



ICRANet Agreements with Brazilian Institutions



ICRANet signed Agreements with Brazilian Institutions

	➢ ICRANet – FAPERJ Agreement (Portuguese – English)
	➢ ICRANet – CBPF Agreement
	➢ ICRANet – ITA Mou, Agreement and Renewal (Portuguese – English)
	➢ ICRANet – UFF Agreement (Portuguese – English)
	➢ Letter of Intent ICRANet – IF-UFRGS ➢ ICRANet – UFRGS Agreement (Portuguese – English)
	➢ MOU ICRANet – INPE
	➢ ICRANet – UnB Agreement (Portuguese – English)
	➢ ICRANet – UNICAMP Agreement (Portuguese – English)
	➢ ICRANet – UFSC Agreement
	➢ ICRANet – UDESC Agreement (Portuguese – English)
	➢ ICRANet – UFPB Agreement
	➢ ICRANet – Government of the State of Ceará Agreement
	➢ MOU ICRANet – IFCE
	➢ ICRANet – UFPE Agreement
	➢ ICRANet – UNIFEI Agreement
	➢ ICRANet –UERJ Agreement
	➢ ICRANet – CAPES Agreement

COOPERATION AGREEMENT

ON

HIGHER EDUCATION, SCIENCE AND RESEARCH

BETWEEN

FUNDAÇÃO CARLOS CHAGAS FILHO DE AMPARO

À PESQUISA DO ESTADO DO RIO DE JANEIRO

(FAPERJ)

AND THE

INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK

(ICRANET)

Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do Rio de Janeiro ("FAPERJ"), whose headquarter is located at Avenida Erasmo Braga, 118/6° andar – Centro, CEP 20020-000 – Rio de Janeiro /RJ, Brazil, in this act represented by its President, Professor Ruy Garcia Marques

and

the *International Center for Relativistic Astrophysics Network* ("ICRANet"), whose headquarters is located at Piazza della Repubblica, 10 – 65122 Pescara, Italy, in this act represented by its Director, Prof. Remo Ruffini,

(Hereinafter collectively referred to as "the Parties" or individually as the "Party"),

Considering the Decree n° 7.552 of August 12th, 2011, that promulgates in Brazil the Agreement that establishes ICRANet and its Statute, signed on September 21st, 2005;

Considering the interest in deepening academic cooperation between scientists from Rio de Janeiro State Institutions and ICRANet, in order to promote the development of science and technology and relativistic astrophysics in particular;

The Parties, agree to establish by mutual agreement and in order to be mutually beneficial this document:

Article 1

OBJECT

The present Agreement intends to provide a legal framework for the establishment of programs and actions that aim to deepen the cooperation between researchers and academics from institutions based in the State of Rio de Janeiro, Brazil, and from ICRANet.

Article 2

OBJECTIVES

The Parties shall promote such cooperation, observing its international obligations and national legislation as well other and their applicable legislation and other valid regulations and agree to develop collaborative activity that may come in the form of:

2.1 Promotion of joint scientific research between investigators from the State of Rio de Janeiro and ICRANet;

2.2 Scholarship programs;

2.3 Organization of seminars, workshops, symposia or other scientific meetings of mutual interest;

2.4 Promote researcher participation in scientific meetings;

2.5 Other forms of cooperation may be determined through mutual consultation.

Article 3

FINANCE

3.1 Each Party will facilitate and fund the mentioned activities through their regular funding programs taking into account any constraints of time, funding and other relevant resources.

3.2 Students and researchers taking part in activities under the scope of this Agreement shall be exempt of ICRANet tuition fees.

3.3 ICRANet and FAPERJ undertake to encourage researchers supported under the scope of this agreement to mention the Parts in any scientific work or paper.

Article 4

REPRESENTATION

4.1 In order to coordinate the activities of this Agreement, FAPERJ and ICRANet will create a Steering Committee of the Program, composed of a principal and an alternate representative from each Party.

4.2 It is the responsibility of the Steering Committee to resolve any technical, and/or administrative questions that may arise during the execution of this Agreement, as well as to oversee its overall functioning, consulting with their respective superiors of each institution, if the need should arise.

Article 5

INTELLECTUAL PROPERTY

5.1 The Parties agree that where the actions taken by virtue of this Agreement result in products of commercial value and industrial and intellectual property rights, these will be governed by the applicable national laws and international conventions in force.

5.2 The Intellectual Property Policy of FAPERJ shall also be observed.

Article 6

VALIDITY

6.1 The present agreement is valid for a period of 5 (five) years, counting from the date of signature.

6.2 FAPERJ shall publish the extract of the present Agreement in Diário Oficial do Estado do Rio de Janeiro no longer than 20 (twenty) working days after the date of its signature.

Article 7

MODIFICATIONS

The conditions established in this Agreement may be modified, by agreement between the Parties and with proper justification.

Article 8

TERMINATION

8.1 Either Party may terminate this Agreement immediately by notice in any of the following circumstances if:

8.1.1 Either Party is in breach of its obligations under this Agreement and following written notice of such breach from the Party not in breach of the Agreement specifying the breach and requiring it to be remedied, the other Party fails to remedy the breach within a period of thirty (30) calendar days. This clause is valid so far as the breach may be remedied but nothing in this clause is intended to require a Party to serve notice of any breach before taking action in respect of it;

8.1.2 Either Party engages in any conduct prejudicial to the reputation of the other Party or its marketing and promotion generally;

8.1.3 For reasons of public interest.

8.2 Either Party may terminate this Agreement for no cause on giving the other Party not less than 60 (sixty) days notice in writing.

8.3 Any such termination should not affect projects and scholarships already underway, except when both Parties jointly agree otherwise.

8.4 The parties shall not be responsible for non-fulfilment of commitments, in case of force majeure.

Article 9

CONTROVERSIES, OMISSION OR CONFLICT

9.1 Issues not explicitly covered in text of this Agreement shall be resolved by the Parties.

9.2 In case of any controversy derived from the application or interpretation of this Agreement, the parties agree to exhaust all measures necessary to remedy the conflict by amicable agreement.

9.3 Should the controversy persist, it is hereby agreed that the courts of the City of Rio de Janeiro will have jurisdiction to solve any legal dispute related to the present memorandum, to the exclusion of all other jurisdictions.

This Agreement is completed in English and Portuguese, with both versions being equally authentic; in the case of any discrepancy between the two versions, the Portuguese version shall prevail.

This Agreement is hereby signed in two (2) copies in each language, with one (1) copy remaining in the possession of each Party.

Rome, Italy, 12.08 *2013*

For Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do Rio de Janeiro (FAPERJ)
Ruy Garcia Marques
President

For International Center for Relativistic Astrophysics Network (ICRANet)
Remo Ruffini
Director

ACCORD ON SCIENTIFIC COOPERATION THAT IS ESTABLISHED BETWEEN THE UNION, BY ITS UNIT OF RESEARCH THE BRAZILIAN CENTER OF RESEARCH IN PHYSICS – CBPF AND INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK – ICRANET – ITALIA FOR SCIENTIFIC RESEARCH

The UNION, through the Brazilian Center for Research in Physics – CBPF, a Research unit part of the basic structure of the Ministry of Science, Technology and Innovation – MCTI, registered in the CNPJ under number 04.044.443/0001-35, located at 150 Rua Dr. Xavier Sigaud, Urca, Rio de Janeiro – RJ, fromhereon referred simply as CBPF, here represented by its director, Ronald Cintra Shellard, Brazilian, married, registered in the CPF under number 521.531.858-15 with identification number 3.918.678 issued by SSP/SP with residence in the city of Rio de Janeiro, RJ, appointed by ordinance number 1.643 published in the Union Official Daily in Dec 8, 2015 using the powers that have been granted to him by the ordinance number 407 by the honorable Minister of State of Science Technology and Innovation, published in the Union Official Daily on Jun 30, 2006, and the International Center for Relativistic Astrophysics Network - ICRANet, located at Piazza della Repubblica, 10 - 65122 Pescara, Italy, from hereon referred simplyto as ICRANet, here represented by the Director, Remo Ruffini, living in Pescara - Italy, in accordancewith Law number 8.666/93 and in the terms of Process CBPF number 01206.000178/2010-97, agreeto the present accord, under the following terms:

Clause 1

Activities

The activities to be developed within the scope of the present cooperation Agreement will consist of joint actions including:

I. the institutional exchange of graduate and post-graduate students, researchers and faculty members;
II. the development of teaching and/or research activities, related to the areas In which CBPF and ICRANet act;
III. the organization of seminars, conferences, workshops or short courses in those areas;
IV. the support of technical-scientific and cultural events and activities open to the public;
V. the development of opportunities to form university teachers and researchers, by means ofspecialized advanced high-level courses;
VI. the organization of training and recycling courses, and the development of inter-institutionalresearch areas associated to local graduate programs;
VII. joint publications;

VIII. public conferences and other actions aiming at the popularization of science;
IX. exchange of information concerning teaching and research activities in each institution.

Clause 2

Addenda

The implementation of the activities envisaged by the contracting parties will be specified by means of Additional Terms to the present cooperation agreement. These will be signed by the contractingparties at the time of defining common projects, areas of research or education, or any other activitiesof mutual interest.

The Addenda must include; a research project with time schedule, human and material resources andindividuals responsible for the planned activities.

Clause 3

Commitments

I. Both Institutions must adopt, as a general principle and to the extent of their budgetary possibilities, the financing of academic actions carried out by this agreement. The party which sends professors/technicians may cover transport expenses. The party which receives may cover living expenses. To finance such expenses, participants must apply to granting agencies and other national or international institutions.

Students, professors, researchers and administrative staff taking part in exchange activities must have health insurance valid during those activities.

II. The CBPF will provide initially physical space and infrastructure for the establishment of ICRANet in Brazil. For this, the CBPF will grant office space for the installation of the Secretary, visiting scientists of ICRANet, stockroom and dead files, seminars and lectures and for the Scientific Coordinator of ICRANet in Brazil.

Clause 4

Academic Products

When activities originating from the present instrument of cooperation result in products, improvements or innovations subject to rights, both parties will establish, according to proper regulatory legislation and by means of specific instruments, the conditions that will regulate property rights, in accordance with the law and proportionately to the contribution of each institution.

Clause 5

Executors

The activities developed within the scope of this Cooperation Agreement will be carried out by members of both parties, appointed by each institution, according to the nature of the activities in each case, the parties being allowed to rely upon the support of external organizations.

An operational Standing Committee composed by two members of each of the signing Institutions will be nominated by the time of the signature of the present Agreement. The Committee will meet at least once a year to draw plans for the joint events. The meeting can occur by electronic means (such as e-conference).

Clause 6

Duration

The present instrument will be valid for 5 (five) years, starting from the date of its signature. The agreement is renewed by a statement of interest by the Director of CBPF and the Director of ICRANet, before the expiration of validity of this agreement.

Clause 7

Cancellation

This present cooperation Agreement may be canceled by any of the parties, by means of notification at least 60 (sixty) days in advance - which may be waived if both parties come to a consensual agreement - being advisable, however, to see that ongoing activities are maintained.

This instrument will be automatically extinguished if any circumstances foreseen in legislations ruling either one or both parties prevent the observance of its validity.

Clause 8

Publication

The CBPF will provide the publication of this agreement in the Diário Oficial da União, as well as any adjustment which will be agreed by both parties. This will be done no longer than 20 days after thesignature of this agreement.

Clause 9

Jurisdiction

The parties consent to the jurisdiction of an appropriate court located in the City of Rio de Janeiro for any controversy or claim arising out o for relation to this Cooperation Agreement.

And as proof so they have freely agreed upon, the parties sign this Instrument in 4 (four) copies, 2 (two) in Portuguese and two (2) in English, all authentic and identical in form and content in thepresence of undersigned witnesses, and signed for each other to produce legal effects.

_____, _____ /_____/ _____

For CBPF:

Prof. Ronald Cintra Shellard

Diretor

For ICRANet:

Prof. Remo Ruffini

Director

Witnesses:

Name

Name

ICRANet

International Center for Relativistic Astrophysics Network

Instituto Tecnológico de Aeronáutica - ITA

ADDENDUM No. 01/14 TO THE PROTOCOL OF COOPERATION THAT AMONG THEMSELVES CELEBRATE THE INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK AND THE UNION, THROUGH THE COMMAND OF THE AIRFORCE VIA THE GENERAL COMMAND OF AEROSPACE TECHNOLOGY, REPRESENTED BY THE TECHNOLOGICAL INSTITUTE OF AERONAUTICS, TAKING BY OBJECTIVE TO EXTEND ITS TIME PERIOD, IN THE TERMS PURSUANT AS FOLLOW:

CLAUSE ONE - THE RENEWAL

According the seventh clause, is hereby extended for the term of 36 months starting from 04.12.2014, the Cooperation Protocol between UNION, THROUGH THE COMMAND OF THE AIRFORCE VIA THE GENERAL COMMAND OF AEROSPACE TECHNOLOGY, REPRESENTED BY THE TECHNOLOGICAL INSTITUTE OF AERONAUTICS - ITA and INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK - ICRANet without prejudice to the amicable termination or unilateral denouncement of the agreement properly notified in writing, at least with an advance of sixty (60) days. In another hypothesis, the programs or activities in progress will not suffer interruption.

SECOND CLAUSE - RATIFICATION

Remain in force the other clauses of the Cooperation Protocol, hereby expressly ratified by the parties.

For ITA

Rector
Dr. Carlos Américo Pacheco
Brazil, April, 2014

For ICRANet

Director
Dr. Remo Ruffini
Brazil, April, 2014

ICRANet

International Center for Relativistic Astrophysics Network

Instituto Tecnológico de Aeronáutica

COOPERATION PROTOCOL BETWEEN
INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS AND
INSTITUTO TECNOLÓGICO DE AERONÁUTICA

The International Center for Relativistic Astrophysics Network, hereafter referred as ICRANet, represented by its Director, Dr. Remo Ruffini, and the Instituto Tecnológico de Aeronáutica, hereafter referred to as ITA, subordinate to the Department of Aerospace Science and Technology of the Command of Aeronautics of Brazil, represented by its rector Dr. Reginaldo dos Santos.

CONSIDERING

The formal collaboration agreement between the Brazilian government and ICRANet signed on the 21st of September 2005, and approved by Legislative Decree nr 292 (Diário Oficial da União, nr 205 – out 24th, 2007)

AGREE to establish the present cooperation agreement in accordance with the following clauses:

FIRST:

The present protocol has as its main objective to promote the development and diffusion of scientific and technological research on Cosmology, Gravitation and Relativistic Astrophysics between the International Center for Relativistic Astrophysics Network-ICRANet and the Instituto Tecnológico de Aeronáutica - ITA.

SECOND:

The activities to be developed within the scope of the present cooperation protocol will consist of joint actions including one or more of the following items:

I – the institutional exchange of graduate and/or post-graduate students, researchers and faculty members;

II – the development of teaching and/or research activities, related to the areas in which ITA and ICRANet act;

III – the organization of seminars, conferences, workshops or short courses in those areas;

IV – the support of technical-scientific and cultural events and activities open to the public;

V – the development of opportunities to form university teachers and researchers, by means of specialized advanced high-level courses;

VI – the organization of training and recycling courses, and the development of inter-institutional research areas associated to local graduate programs;

VII – joint publications;

VIII – public conferences and other actions aiming at the popularization of science;

IX – exchange of information concerning teaching and research activities in each institution.

THIRD:

The implementation of the activities envisaged by the contracting parties will be specified by means of Work Plans relative to the present cooperation protocol. These will be signed by the contracting parties at the time of definition of common projects, areas of research or education, or any other activities of mutual interest.

The Work Plan must include: a detailed research project with time schedule, human and material resources, individuals responsible for the planned activities and the financial responsibility of each partner.

FOURTH:

Both Institutions must adopt, as a general principle and to the extent of their budgetary possibilities, the financing of academic actions carried out by this protocol. The visiting party may cover transport expenses of their professors and technicians. The hosting party may cover their living expenses. To finance such expenses, participants must apply to granting agencies and other national or international institutions.

Students, professors, researchers and administrative staff taking part in exchange activities must have health insurance valid during those activities paid by the visiting part.

FIFTH:

When activities originating from the present instrument of cooperation result in products, improvements or innovations subject to rights, both parties will establish, according to proper regulatory legislation and by means of specific instruments, the conditions that will regulate property rights, in accordance with the law and proportionately to the contribution of each institution.

SIXTH:

The activities developed within the scope of this Cooperation protocol will be carried out by members of both parties, appointed by each institution, according to the nature of the activities in each project, the parties being allowed to rely upon the support of external organizations.

An overall coordinator will be appointed for each of the signing Institutions in order to monitor the implementation and progress of programs and projects related to the present protocol, and to draw plans for the joint events.

On the part of the ITA:

Prof. Dr. Manuel M.B. Malheiro de Oliveira
Divisão de Ciências Fundamentais
tel:+55-12-3947-6884
fax:+55-12-3947-5850
e-mail: malheiro@ita.br

On the part of ICRANet:

PROF. REMO RUFFINI

tel: +39 085-23054201 / 06-6991434
fax: +39 085-4219252
e-mail: ruffini@icra.it

The coordinators will meet at least once a year or by electronic means (such as e-conference), or through visits to partner institutions.

SEVENTH:

The present instrument will be valid for 3 (three) years, starting from the date of its signature. It may be extended automatically for another three years through an exchange of letters between the signatories.

EIGHTH:

This present cooperation protocol may be canceled by any of the parties, by means of notification at least 60 (sixty) days in advance – which may be waived if both parties come to a consensual agreement – being advisable, however, to attempt to ensure that ongoing activities are maintained.

NINTH:

Any necessary modification to the present cooperation protocol must be stated in Additional Terms that will be negotiated between the parties, without prejudice to ongoing activities.

TENTH:

For purposes of this protocol, the parties establish their addresses as: I.C.R.A. Network Coordinating Center - Piazza della Repubblica, 10, 65122 Pescara, Italia e o Instituto Tecnológico da Aeronáutica – ITA Praça Marechal do Ar Eduardo Gomes, 50 12228-900 São José dos Campos – SP Brasil, through which the correspondence held between the parties with respect to the interpretation and enforcement of this protocol should be formalized.

All terms having been agreed upon, the representatives of the parties signed the present instrument, with 2 (two) copies of the same document to ensure legal effect.

São José dos Campos, of April 2011.

For ITA

Dr. Reginaldo DOS SANTOS
Rector

For ICRA

Dr. Remo Ruffini
Director

Version du 11/04/2011

ICRANet

International Center for Relativistic Astrophysics Network

UNIVERSIDADE FEDERAL FLUMINENSE

ACADEMIC COOPERATION AGREEMENT

between

UNIVERSIDADE FEDERAL FLUMINENSE
(Niterói/RJ - Brasil)

and

INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK
ICRANet
(Pescara – Italy)

Universidade Federal Fluminense, hereafter referred to by the initials **UFF**, located at Rua Miguel de Frias, 9 - Icaraí, Niterói/RJ, Brazil, represented by **Rector Prof. Roberto de Souza Salles**, CPF/MF n. 434.300.237-34, reappointed by Presidential Decree on November 11th, 2010, published in DOU N°. 213 on November 08th, 2010, and between the **International Center For Relativistic Astrophysics Network (ICRANet)** hereafter referred to by **ICRANet** located at Piazza della Repubblica, n. 10, Pescara (PE) Italy, represented by **Director Prof. Remo Ruffini** linked by common academic and cultural interests, sign the present Academic Cooperation Agreement based on Brazilian Federal Law n. 8.666/93 and subsequent legislation, observing the following articles:

ARTICLE 1 – OBJECT

The present Agreement aims at developing exchange program and cooperation in all academic areas offered by both universities. The exchange program may include:

a) Undergraduate and graduate students;

b) Professors, researchers and graduate technical administrative personnel;

c) Research collaborations.

ARTICLE 2 – THE EXCHANGE PROGRAM

2.1 – The student exchange term will last one or two semesters and any term extension may be agreed by the partners.

2.2 – The exchange term for professors, researchers and technical administrative personnel will be set according to each situation and shall be of mutual interest.

2.3 – Exchange program candidates must have knowledge of the language in which classes will be taught.

2.4 – The applications shall be submitted by the home Institution of the candidates.

2.5 – Students will be assessed by the host University faculty according to current rules.

2.6 – Recognizing credits for the disciplines will be responsibility of each home Institution.

2.7 – In order to have applications considered by the host Institutions, candidates must submit all the documents required at the time. The required documents and instructions shall be part of the information made available to interested candidates at each Institution.

2.8 – Exchange students will remain registered at their home Institution, where they will pay all charges, including montlhly fees, and will be granted exemption from paying regular charges and montlhly fees at the host Institution.

ARTICLE 3 – OBLIGATIONS

3.1 – Accommodation, transportation, and personal expenses are the responsibility of the students, technical administrative personnel, professors and researchers. Each Institution shall assist visiting students as much as possible with housing arrangements.

3.2 – It is mandatory for students, professors, researchers and technical administrative personnel while taking part in exchange activities to have their own international health insurance valid during the duration of such activities and to be responsible for such expenses.

ARTICLE 4 – FINANCIAL RESOURCES

Both Universities will endeavor to obtain resources from their own institution or from financing agencies to fund such activities.

ARTICLE 5 – COORDINATION

5.1 – In order to implement and achieve the goals of the present Agreement, UFF and ICRANet shall appoint each one a person from their staff to coordinate the development and management of joint activities. These persons will be the contact agents through whom each institution may submit proposals for activities that shall be established.

5.2 – The coordinators will be equally responsible for the evaluation of activities under this Agreement and wil act according to the established practices in each Institution.

ARTICLE 6 –DURATION AND TERMINATION

6.2 – This Agreement shall take effect on the date the last signature is appended hereto and shall be valid for 60 (sixty) months thereafter. It may be enlarged and amended by a proper document signed by both parts. After the expiration date, a new Agreement may be signed with identical objectives if both parts agree.

6.2 – Either Institution may terminate this Agreement by giving the other part a notice in writing by the interested partner, which shall take effect in 90 (ninety) days after the notice reception.

6.3 – The termination of the Agreement shall not interrupt any activity in progress.

ARTICLE 7 – THE COMPETENT COURT OF JUSTICE

The Federal Court of Justice, Niterói/RJ Section, shall have the competence to decide questions concerning this agreement that may not be settled by both parts if the litigation occurs in Brazil, according to art. 109, I of the Constitution of the Federal Republic of Brazil, or such competence shall be delegated to the court in the partner university country where the litigation takes place.

The competent authorities bear witness to the approval of the above articles, as representatives of **Universidade Federal Fluminense** and **ICRANet** by setting their signatures in 2 (two) bilingual copies of this agreement, in Portuguese and English, with equal content.

ROBERTO DE SOUZA SALLES
PRESIDENT
UNIVERSIDADE FEDERAL FLUMINENSE

DATE:

PROF. REMO RUFFINI
DIRETOR
ICRANET

DATE: 30/06/14

COOPERATION PROTOCOL

between the

INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK (ICRANet)

and the

FEDERAL UNIVERSITY OF RIO GRANDE DO SUL (UFRGS)

through the

PHYSICS INSTITUTE OF UFRGS (IFUFRGS)

The **ICRANet**, represented by its Director, **PROF. DR. REMO RUFFINI** and **UFRGS**, represented by its Rector, **PROF. DR. CARLOS ALEXANDRE NETTO**:

CONSIDERING

The formal agreement of the Federative Republic of Brazil being a Member of ICRANet, signed by the President of the Federative Republic of Brazil, **LUIZ INACIO LULA DA SILVA**, on September 21, 2005, approved by the Legislative Decree No. 292 of the Brazilian National Congress (Official Gazette of Union No. 205, page 3 of October 24, 2007) and finalized by President **DILMA ROUSSEFF** in August 12, 2011 (see document "DECRETO No 7.552 - Pres. Dilma Roussef".pdf hereby annexed).

AGREE to establish this **COOPERATION PROTOCOL** which is governed by the following clauses:

FIRST:

The main objectives of this **COOPERATION PROTOCOL** are to promote the development and dissemination of scientific and technological research in the fields of

COSMOLOGY, **GRAVITATION** and **RELATIVISTIC ASTROPHYSICS** between **ICRANet** and several institutions under the coordination of the **UFRGS**, through the **IFUFRGS**.

Henceforth we will refer in this document to **ICRANet-UFRGS** to designate the institutions which participate in this present **COOPERATION PROTOCOL**.

SECOND:

The activities to be undertaken under this **COOPERATION PROTOCOL** will consist of joint actions involving one or more of the following items:

I – The institutional exchange of graduate or post-graduate students, researchers and faculty members of **ICRANet** and **UFRGS**;

II – The development of teaching and/or research activities related to the areas of expertise and interest of **ICRANet** and **UFRGS**;

III – The organization of symposia, seminars, conferences and short courses on topics and areas of expertise and interest of **ICRANet** and **UFRGS**;

IV – The promotion and support of technical-scientific and cultural events and activities open to the public;

V – The development of opportunities to form university teachers and researchers, by means of specialized advanced high-level courses in areas of interest and expertise of **ICRANet** and **UFRGS**;

VI –The organization of training and recycling courses and activities as well as the developing of inter-institutional research areas associated to local graduate programs;

VII –The promotion of joint publications;

VIII – Implementation of socially oriented activities through the academic extension;

IX – Exchange of information concerning teaching and research activities in both institutions signatory of this **COOPERATION PROTOCOL**.

THIRD:

The implementation of the activities envisaged by the contracting parties will be specified by means of Work Plans relative to this **COOPERATION PROTOCOL**, to be signed by the contracting parties at the time of definition of common projects, areas of research and education, or any other activities of mutual interest.

FOURTH:

The institutions signatories of this **COOPERATION PROTOCOL** shall adopt, as a general principle, and to the extent of their budgetary possibilities, the financing of academic actions carried out by this instrument. In the specific case of exchange of

professional between the signatory institutions, the visiting institution shall endeavor efforts to cover transportation expenses of their students, professors and technicians while the hosting institution may cover their living expenses. To finance such expenses, participants must apply to granting agencies and other national or international institutions.

FIFTH:

When activities originating from this instrument of cooperation result in products, improvements or innovations, subject to rights, both parties will establish - according to the law and to proper regulatory legislation, by means of specific instruments and proportionally to the contribution of each institution - the conditions that will regulate property rights.

SIXTH:

The activities developed within the scope of this **COOPERATION PROTOCOL** will be carried by members of both parties, appointed by each institution, according to the nature of the activities in each project, the parties being allowed to rely upon the support of external organizations.

An overall coordinator will be appointed for each of the signing Institutions in order to monitor and supervise the implementation and progress of programs and projects related to the present **COOPERATION PROTOCOL** and to establish plans for the future of this cooperation.

The coordinators will meet at least once a year or by electronic means (such as e-conference), or through visits to partner institutions.

SEVENTH:

This instrument will be valid for 5 (five) years from the date of signing and may be extended by Addendum, preserved its object.

EIGHTH:

This present **COOPERATION PROTOCOL** may be canceled by either of the parties, by means of a notification at least 60 (sixty) days in advance – which may be waived if both parties come to a consensual agreement – being advisable, however, to attempt to ensure that ongoing activities are maintained.

NINTH:

Any necessary modification to the present **COOPERATION PROTOCOL** must be stated in Additional Terms that will be negotiated between the parties, without prejudice to ongoing activities.

In particular this instrument of cooperation could be extended to other partnerships, through the express agreement of the parties through an Additional Term.

TENTH:

For purposes of this **COOPERATION PROTOCOL** the parties establish their addresses as: **ICRANet Coordinating Center**: Piazza della Repubblica, 10, 65122 Pescara, Italy; **PHYSICS INSTITUT - UFRGS**: Avenida Bento Gonçalves 9500 - PO Box 15051 - CEP 91501-970 - Porto Alegre, RS, Brazil, through which the correspondence held between with respect to the interpretation and enforcement of this **COOPERATION PROTOCOL** should be formalized.

All terms having been agreed upon, the representatives of the parties signed the present instrument, with 4 (four) copies of the same document to ensure legal effect.

Porto Alegre, APRIL, 15TH 2014

PROF. DR. CARLOS ALEXANDRE NETTO
PRESIDENT **UFRGS**

PROF. DR. REMO RUFFINI
DIRECTOR **ICRANet**

PROFA.DRA. MARCIA BARBOSA
DIRECTOR **IFUFRGS**

PROF. DR. CESAR A. ZEN VASCONCELLOS
ADJUNCT PROFESSOR **ICRANet**

PROF. DR. KEPLER DE SOUZA OLIVEIRA FILHO
ASTRONOMY DEPARTMENT
IFUFRGS

MEMORANDUM OF UNDERSTANDING (MOU)

between the

INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS

and the

INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK

for

SCIENTIFIC COOPERATION IN RELATIVISTIC ASTROPHYSICS

1. PARTIES

The Ministry of Science, Technology and Innovation ("MCTI"), through the INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS ("INPE"), established in the city of São José dos Campos, São Paulo, Brazil, in this act represented by its Director, Dr. LEONEL FERNANDO PERONDI, and the INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK ("ICRANet"), in this act represented by its Director, Dr. REMO RUFFINI, as the result of negotiation and understanding, have approved the following provisions aiming at a commitment to future scientific cooperation in the field of Relativistic Astrophysics.

2. BACKGROUND

INPE is an internationally recognized organization for its relevant activities in space sciences, technology and applications. INPE is involved in the study of Relativistic Astrophysics through its Astrophysics Division and also has a graduate program in astrophysics.

ICRANet is a leading international theoretical centre in the field of Relativistic Astrophysics and controls an international PhD program in Relativistic Astrophysics – IRAP, which is part of the Erasmus Mundus Programme of the European Commission.

3. PURPOSE

The purpose of this MoU is to formally establish a commitment to future cooperation between INPE and ICRANet to conduct joint research and educational activities in the field of Relativistic Astrophysics.

4. SCOPE OF ACTIVITIES

The Parties have identified areas of mutual interest for cooperation, which include but

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are not restricted to:

1. Institutional exchange of under-graduate and post-graduate students, researchers and faculty members;
2. Development of educational and/or research activities related to the areas in which INPE and ICRANet act;
3. Organization of seminars, conferences, workshops and/or short courses in those areas;
4. Support to technical-scientific and cultural events and activities open to the public, as well as to other initiatives aiming at the popularization of science;
5. Development of opportunities to train university teachers and researchers through specialized, advanced high-level courses;
6. Promotion of joint scientific publications;
7. Use by INPE's researchers and graduate students of the facilities, software and scientific data available at the ICRANet's Brazilian Scientific Data Center (BSDC) located at the "Centro Brasileiro de Pesquisas Físicas" (CBPF) in Rio de Janeiro, RJ, Brazil;
8. Exchange of information concerning educational and research activities in each institution.

5. SENSITIVE INFORMATION

5.1 For the purposes of this MoU, "Sensitive Information" means all and any knowledge, know-how, technical information, intellectual property, business or commercial information owned or controlled by one Party, including but not limited to specifications, drawings, circuit diagrams, tapes, discs and other computer-readable media and documents, which are disclosed by that Party ("The Disclosing Party") to the other Party ("the Receiving Party") for use in developing future cooperations under this MOU or any other future activity in relation to this MOU.

5.2 The Receiving Party shall, during the term of the commitment to future scientific cooperation of this MoU, and for a period of 5 years thereafter, keep the "Sensitive Information' secret and confidential and shall not disclose it to any third party, save for its employees, consultants and contractors, and then only on a need to know basis, to whom disclosure is necessary for the implementation of the activities/projects developed under this MoU and who will be bound by at least the same obligations of secrecy as contained in this MoU.

5.3 The Receiving Party shall incur no obligation under clause 5.1 with respect to "Sensitive Information" which:

5.3.1 is known to the Receiving Party before the effective date of this MoU, and not impressed already with any obligation of secrecy to the Disclosing Party; or

5.3.2 is or becomes publicly known without the involvement of the Receiving

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INPE GAT

Party; or

5.3.3 is obtained by the Receiving Party from a third party in circumstances where the Receiving Party has no reason to believe that there has been a breach of an obligation of secrecy owed to the Disclosing Party; or

5.3.4 is independently developed by the Receiving Party; or

5.3.5 is approved for release in writing by an authorized representative of the Disclosing Party; or

5.3.6 is specifically required to be disclosed by force of law or pursuant to an order of a competent Court of Law.

6. VALIDITY

This MoU shall enter into force upon signature by both parties and shall remain in force for five (5) years unless terminated earlier by either party upon sixty (60) days of written notice to the other party. Each party may propose to the other amendments to this MoU in writing. Such amendments shall be established by mutual written agreement of the Parties.

7. RESOLUTION OF DISAGREEMENTS

Should disagreement arise on the interpretation of the provisions of this MOU, which cannot be resolved at the operating level, the area(s) of disagreement should be stated in writing by each Party and submitted to the designated representatives of both Parties, as indicated in item 9, for consideration and resolution.

8. MATTERS OF UNDERSTANDING

8.1 This MoU does not create rights or obligations in terms of international law.

8.2 The scientific results obtained as a consequence of future scientific cooperations developed under the scope of this MoU will be published or presented in appropriate conferences with the approval of and due recognition from both parties.

9. DESIGNATED REPRESENTATIVES

Each Party hereby designates one representative as the main point of contact for all matters related to this MoU.

For ICRANet: Dr. Remo Ruffini - Director

For INPE: Dr. João Braga – Senior Researcher – Astrophysics Division/Atmospheric and Space Sciences Department

10. SIGNATURE

This MoU will be signed in two (2) originals: each of them in the Portuguese and English languages.

INPE GAT

For the:

INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS (INPE)

Dr. LEONEL FERNANDO PERONDI Date 14th MARCH 2013

DIRECTOR

For the:

INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK (ICRANet)

Dr. REMO RUFFINI Date 14th March 2013

DIRECTOR

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Universidade de Brasília

ICRANet

COOPERATION PROTOCOL

between the

INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK (ICRANet)

and the

UNIVERSITY OF BRASÍLIA (UnB)

The ICRANet, represented by its Director, Prof. Remo Ruffini, and the University of Brasilia, represented by its Deputy Rector, Prof. Sônia Nair Báo.

considering

The formal agreement of the Federative Republic of Brazil being a Member of ICRANet, signed by the President of the Federative Republic of Brazil, Luiz Inacio Lula Da Silva, on September 21, 2005, approved by the Legislative Decree No. 292 of the Brazilian National Congress (Official Gazette of Union No. 205, page 3 of October 24, 2007) and finalized by President Dilma Rousseff in August 12, 2011 (see document "Decreto No 7.552 - Pres. Dilma Roussef".pdf hereby annexed).

agree

to establish this Cooperation Protocol which is governed by the following clauses:

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ICRANet

FIRST:
The main objectives of this Cooperation Protocol are to promote the development and dissemination of scientific and technological research in the fields of cosmology, gravitation and relativistic astrophysics between ICRANet and several institutions under the coordination of the UnB.

Henceforth we will refer in this document to ICRANet-UnB to designate the institutions which participate in this present Cooperation Protocol.

SECOND:
The activities to be undertaken under this Cooperation Protocol will consist of joint actions involving one or more of the following items:

I – The institutional exchange of graduate or post-graduate students, researchers and faculty members of ICRANet and UnB

II – The development of teaching and/or research activities related to the areas of expertise and interest of ICRANet and UnB

III – The organization of symposia, seminars, conferences and short courses on topics and areas of expertise and interest of ICRANet and UnB

IV – The promotion and support of technical-scientific and cultural events and activities open to the public

V – The development of opportunities to form university teachers and researchers, by means of specialized advanced high-level courses in areas of interest and expertise of ICRANet and UnB

VI –The organization of training and recycling courses and activities as well as the developing of inter-institutional research areas associated to local graduate programs

VII –The promotion of joint publications

VIII – Implementation of socially oriented activities through the academic extension

IX – Exchange of information concerning teaching and research activities in both institutions signatory of this Cooperation Protocol.

THIRD:
The implementation of the activities envisaged by the contracting parties will be specified by means of Work Plans relative to this Cooperation Protocol, to be signed by the contracting parties at the time of definition of common projects, areas of research and education, or any other activities of mutual interest.

Universidade de Brasília

ICRANet

FOURTH:
The institutions signatories of this Cooperation Protocol shall adopt, as a general principle, and to the extent of their budgetary possibilities, the financing of academic actions carried out by this instrument. In the specific case of exchange of professional between the signatory institutions, the visiting institution shall endeavor efforts to cover transportation expenses of their students, professors and technicians while the hosting institution may cover their living expenses. To finance such expenses, participants must apply to granting agencies and other national or international institutions.

Students, professors, researchers and administrative staff taking part in exchange activities must have health insurance valid during those activities paid by the visiting part.

FIFTH:
When activities originating from this instrument of cooperation result in products, improvements or innovations, subject to rights, both parties will establish - according to the law and to proper regulatory legislation, by means of specific instruments and proportionally to the contribution of each institution - the conditions that will regulate property rights.

SIXTH:
The activities developed within the scope of this Cooperation Protocol will be carried by members of both parties, appointed by each institution, according to the nature of the activities in each project, the parties being allowed to rely upon the support of external organizations.

An overall coordinator will be appointed for each of the signing Institutions in order to monitor and supervise the implementation and progress of programs and projects related to the present Cooperation Protocol and to establish plans for the future of this cooperation.

The coordinators will meet at least once a year or by electronic means (such as e-conference), or through visits to partner institutions.

SEVENTH:
This present instrument will be valid for 5 (five) years, starting from the date of its signature.

EIGHT:
This present Cooperation Protocol may be canceled by either of the parties, by means of a notification at least 60 (sixty) days in advance – which may be waived if both parties come to a consensual agreement – being advisable, however, to attempt to ensure that ongoing activities are maintained.

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ICRANet

NINTH:

Any necessary modification to the present Cooperation Protocol must be stated in Additional Terms that will be negotiated between the parties, without prejudice to ongoing activities.

In particular this instrument of cooperation could be extended to other partnerships, through the express agreement of the parties through an Additional Term.

TENTH:

For purposes of this Cooperation Protocol the parties establish their addresses as:
ICRANet: ICRANet Coordinating Center: Piazza della Repubblica, 10, 65122 Pescara, Italy
UnB: Campus Universitário Darcy Ribeiro, Asa Norte, CEP 70910- 900, Brasília/DF, Brasil.
through which the correspondence held between with respect to the interpretation and enforcement of this Cooperation Protocol should be formalized.

All terms having been agreed upon, the representatives of the parties signed the present instrument, in 4 (four) copies of the same document, two in Portuguese and two in English, with equal content to ensure legal effect.

Brasilia, 4 September 2015

PROFA. DRA. SÔNIA NAIR BÁO
Deputy Rector

PROF. DR. REMO RUFFINI
Director of ICRANet

Witnesses

Institute of Physics (IF)
José Felippe Beaklini Filho
Director

International Cooperation Office (INT)
Eiiti Sato
Director

UNICAMP

ICRANet

INTERNATIONAL ACADEMIC COOPERATION AGREEMENT

The **Universidade Estadual de Campinas ("Unicamp")**, located at Rua da Reitoria, 121, Cidade Universitária "Zeferino Vaz", Barão Geraldo, Campinas, São Paulo, Brazil, herein represented by its Rector José Tadeu Jorge, and the **International Center for Relativistic Astrophysics Network**, Piazza della Repubblica, 10, 65122 Pescara , Italy, herein represented by its Director Prof. Remo Ruffini, collectively referred to as "Parties", or as the context permits "Party", hereby agree on the terms of this cooperation agreement ("Agreement").

CLAUSE 1 – PURPOSE

The purpose of this Agreement is to foster academic cooperation by means of common research projects and/or the exchange of teaching staff/researchers, graduate and undergraduate students, with mutual recognition of the courses taken at any of the Parties, and members of the technical-administrative staff of each institution.

CLAUSE 2 – GOALS AND FORMS OF COOPERATION

2.1. Teaching staff/researchers exchange

2.1.1. Visiting Faculty Members/Researchers shall take part in conference, teaching and/or research activities, under stays which shall not exceed the extent of one academic year (two semesters).

2.1.2. Health insurance and repatriation coverage must be arranged by the faculty member/researcher in his/her home country.

2.1.3. Salaries shall be paid by the Home Institution.

2.2. Student Exchange

2.2.1. Students shall be pre-selected by their Home Institution based on their academic excellence. The Host Institution shall be responsible for the final acceptance.

2.2.2. Students accepted by the Host Institution will be considered exchange students and shall be subject to all the rules and regulations of the Host Institution, complying with them in the same manner as regular students thereof.

2.2.3. Students participating in the exchange program shall be encouraged to acquire knowledge of the language of the country of the Host Institution country, at a level compatible with the activities they are expected to carry out.

2.2.4. Each student shall follow a course of studies previously agreed between both institutions.

2.2.5. The student's stay shall not exceed one academic year, except in the case of double degree programs.

Universidade Estadual de Campinas - Instituto de Física "Gleb Wataghin" - Departamento de Raios Cósmicos e Cronologia
CEP 13083-970 - Campinas – SP - Brasil
Fone: +55 19 3521-5314 / 5522
e-mail: secdrcc@ifi.unicamp.br

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2.2.6. Undergraduate double degree programs and/ co-supervision of theses and/or dissertations shall be the object of an addendum or a separate Agreement.

2.2.7. Health insurance and repatriation coverage must be arranged by the student in his/her home country before his/her arrival at the Host Institution.

2.3. Members of the technical-administrative staff

2.3.1. For the purpose of encouraging the exchange of experience and knowledge in fields of common interests, the institutions may select members of their technical-administrative staff to take part in the exchange program.

2.3.2. Health insurance and repatriation coverage must be arranged by the staff member in his/her home country.

2.3.3. Salaries shall be paid by the Home Institution.

2.3.4. The activities conducted during the exchange period should be consistent with the activities of the professional in their Home Institution and, at the end of the exchange, a report should be submitted to both institutions.

CLAUSE 3 – FINANCIAL RESPONSABILITY

3.1. Faculty members/researchers involved in exchange programs hereunder shall not pay fees to the Host Institution. The remaining expenses (travel, accommodation and the like) shall be borne by the faculty member/researcher, who may seek funding from external agencies.

3.2. Students involved in exchange programs hereunder shall pay academic fees, if any, at their Home Institution. Remaining expenses (travel, accommodations and the like) shall be borne by the student. This Agreement shall not imply any obligation of the Parties to provide financial support.

3.3. In the event of technical-administrative staff exchange, the expenses shall be borne by the Home Institution, subject to the availability of funds for such purpose.

CLAUSE 4 – OBLIGATIONS OF THE PARTIES

4.1. The Parties shall attempt to achieve reciprocity under the activities covered by this Agreement.

4.2. At the completion of a student stay, the Host Institution shall forward an official document specifying the activities carried out by the students and his/her performance to the Home Institution´s appropriate office.

4.3. The Home Institution shall acknowledge the academic results obtained by the student and the respective credits and/or hours at the Host Institution, based on the work program previously agreed or between the institutions.

4.4. The Host Institution shall provide, whenever possible, adequate research conditions and facilities for the development of the work of visiting faculty members/researchers.

4.5. The Host Institution shall offer working conditions for the development of the activities of members of the technical-administrative staff.

CLAUSE 5 – INTELLECTUAL PROPERTY

5.1 All data, technical and commercial information, technologies, software, procedures and routines of the Parties and/or third parties, but under their responsibility, prior to the execution of this Agreement, disclosed to the other Party in order to support the performance of the services provided in this Agreement, will remain under the exclusive property of its holder.

5.2 All results, privileged or not, new patents, methodologies, technical innovation, products or processes and know-how obtained in virtue of the joint development, shall be co-owned by **Unicamp** and **ICRANet** with each party owning 50% (fifty percent) of the subject property.

5.3 During the term of this Agreement, **Unicamp** and **ICRANet** mutually undertake to transmit between them any and all information or improvement introduced by the research team of the project developer.

5.4 The applications for patents in Brazil shall be performed by **Unicamp** with all expenses borne by **Unicamp.**

5.5 The applications for patents in Italy shall be performed by **ICRANet** with all expenses borne by **ICRANet.**

5.6 **Unicamp** and **ICRANet** shall collaborate to respond to eventual requests of privileges issued by the INPI (or similar agency abroad), providing all necessary information, as well as the signing by its employees, agents, technicians and researchers of any document that may be necessary, such as proxies, authorizations, statements, forms, etc.

CLAUSE 6 – GENERAL PROVISIONS

6.1. The tolerance by any of the Parties to the breach of any clause or condition of this Agreement shall be understood as an act of mere liberality, and never be construed as renewal, modification, waiver or loss of the right to request the accomplishment of the respective obligation.

6.2. This Agreement and all documents and information provided by one Party to the other Party under, or in connection with the negotiation of this Agreement or any subsequent contractual undertakings shall be treated as confidential ("the Confidential Information"). The Confidential Information shall not be used except for the purposes for which it was made

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available and the Confidential Information shall not be disclosed to any other person without the prior written consent of the disclosing Party.

6.3. The Parties authorize to perform any type of publication in a scientific journal or conference and exhibition in classes of any kind and the publication of dissertations and doctoral theses resulting from their collaboration.

6.4. Any modification in the terms of this Agreement shall be established by way of an Addendum signed by both Parties.

CLAUSE 7 – TERM AND TERMINATION

7.1. This Agreement shall be effective for an indeterminate period, as from the date it is signed by the representatives of both Parties.

7.2. Either Party will be entitled at any time at its absolute discretion to terminate the agreement by giving written notice 6 (six) months beforehand to the other. Such termination will not adversely affect any exchange in effect prior to the effective date of the termination.

CLAUSE 8 – SETTLEMENT OF DISPUTES

In order to settle any doubts that may arise under the performance or in the implementation of this Agreement, the Parties shall exert their best efforts to arrive at a solution by mutual consent. In the event such consent is found to be impossible, the Parties shall jointly appoint a third party natural person to act as mediator.

In witness whereof, the Parties here to execute this Agreement in 2 (two) counterparts of equal content and form on the date written below.

Date: / /

24 FEV 2016

On behalf of the

Unicamp

Prof. José Tadeu Jorge, Rector

Alvaro Penteado Crósta
Universidade Estadual de Campinas
Reitor em Exercício

On behalf of the

ICRANet

Prof. Remo Ruffini, Director

Universidade Estadual de Campinas - Instituto de Física "Gleb Wataghin" - Departamento de Raios Cósmicos e Cronologia
CEP 13083-970 - Campinas – SP - Brasil
Fone: +55 19 3521-5314 / 5522
e-mail: secdrcc@ifi.unicamp.br

ICRANet

COOPERATION AGREEMENT

BETWEEN

UNIVERSIDADE FEDERAL DE SANTA CATARINA (UFSC), BRAZIL

AND

INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK (ICRANET), ITALY

Universidade Federal de Santa Catarina (UFSC), special regime autarchy, under the Ministry of Education (Law No. 3,849 of December 18, 1960 - Decree No. 64,824 of July 15, 1969) located at Campus Universitário Reitor João David Ferreira Lima, Florianópolis, Santa Catarina, Brazil, and **International Center for Relativistic Astrophysics Network (ICRANet)**, set by the Statute signed on march 19th 2003 and approved by the Italian Parliament on February 10th 2005, published in the Gazzetta Ufficiale n. 53, on March 5th 2005, located at Piazza della Repubblica, 10, Pescara (PE), Italia, represented by its Rector, Professor Roselane Neckel and its Director, Professor Remo Ruffini, express that the objective of this agreement is the development of collaborative activities between the above mentioned universities, with the intention of expanding their academic relationship and stimulating the exchange of knowledge in the field of Relativistic Astrophysics. Therefore, both institutions decide to enter into agreement according to the following terms:

SECTION I – JOINT ACTIVITIES

The institutions involved in this Agreement intend to provide the means necessary for the joint implementation of the following activities:

1. Exchange of undergraduate and graduate students, faculty, researchers and administrative staff;
2. Projects and research activities;
3. Collaboration and participation in seminars, lectures, symposia and academic meetings;

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4. Special academic programs of short duration;
5. Programs of undergraduate and graduate level, including doctorates;
6. Double degree agreements;
7. Co-tutelage contracts

Specific, written agreements must be in place prior to activities described in Points 1, 2, 4, and 5. The mentioned written agreements must describe both the terms and agreements at issue and must be signed by representatives of both institutions.

SECTION II – COORDINATORS

Each university may designate a local coordinator for this Agreement, who will be responsible for organizing the related activities, evaluating the fulfillment of the work scheme and, when possible, seeking adequate funding. In case it is necessary to substitute the coordinator the other party must be notified in writing.
The ICRANet designates Professor Jorge Armando Rueda Hernández as the Coordinator of this Agreement.
The UFSC designates Professor Débora Peres Menezes as the Coordinator of this Agreement.

SECTION III – INTELECTUAL PROPERTY RIGHTS

1. The intellectual property rights in which the inventors or authors are the individuals in the exchange program will be owned by the Universities involved.
2. The Universities must inform one another in the occurrence of results that are protectable by the Intellectual Property Rights in which any of the authors or inventors belong to another University.
3. The Universities must comply with the conditions of secrecy established in their national legislation, as well as in the international agreements, with special regard to Article 39 of the Agreement on Aspects of Intellectual Property Rights Related to Trade, by the World Trade Organization.

SECTION IV – RESOURCES

1. The host Institution is not obliged to fund the activities of cooperation. However, when necessary, the institution may seek financial assistance through development agencies or other funding sources. The host institution shall also provide administrative support in order to ensure that the activities under this Agreement meet the expectations of both institutions.
2. Students, faculty, researchers and administrative staff in exchange shall not pay fees at the host institution, with exception of fees for extension activities, extracurricular courses or any other non-regular activities in the Host Institution. The fees of the home Institution, if any, shall be paid according to its policies and regulations.

SECTION V – CIVIL RESPONSIBILITY

The host Institutions shall not be held accountable for any damage caused by students, faculty, researchers and administrative staff of the partner Institutions, not even for accidents, illness, disability, death or funeral repatriation.

SECTION VI – TERM AND EXTENSION

The present Agreement will have validity for 05 (five) years starting from the date of the last signature. Validity may be extended before the expiration date, by means of written communication by both parties, preferably at least 60 (sixty) days before termination. The expiration date shall not affect activities in progress.

SECTION VII – ALTERATIONS

This Agreement may be altered during its term via written consent of both parts, in the form of an Addendum or other legal document.

SECTION VIII – TERMINATION

The present Agreement may be terminated by either institution, by reason of breach of the terms mentioned above. However, the termination shall be accomplished through written notice 06 (six) months in advance. Termination shall not affect the activities in progress.

SECTION IX – JURISDICTION

Issues not contemplated by this Agreement or disputes that may arise in its execution shall be reviewed by the representatives of the institutions, or by representatives delegated by them.

This Agreement will be signed in counterparts of identical form and content. Each institution must have an original in Portuguese and one original in English.

Florianópolis, 05 / 08 / 2014

Professor Roselane Neckel
Director of UFSC

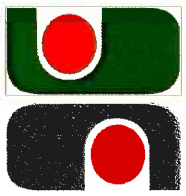
Profª. Roselane Neckel
Universidade Federal de Santa Catarina
Reitora

26 / 08 / 2014

Professor Remo Ruffini
Director of ICRANet

Ministério da Educação
Universidade Federal de Santa Catarina

ICRANet



UDESC
UNIVERSIDADE
DO ESTADO DE
SANTA CATARINA

COOPERATION AGREEMENT N°_____/_____ .

COOPERATION AGREEMENT BETWEEN THE FUNDAÇÃO UNIVERSIDADE DO ESTADO DE SANTA CATARINA AND THE INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK.

The Fundação Universidade do Estado de Santa Catarina, in this act represented by its Rector, Professor Marcus Tomasi, and the International Center for Relativistic Astrophysics Network (ICRANet), in this act represented by its Director Prof. Remo Ruffini, wanting to express the wish of establishing academic scientific and technical cooperation programs, decide to subscribe the following COOPERATION AGREEMENT.

CONSIDERING

1) The common interest of jointly maintaining, exploring and developing scientific academic and technical activities.

2) The mutual convenience of promoting actions of interchange of staff and students that assist to the scientific advancement and the strengthening of its specialized human resources.

3) The wish that the programs and investigation projects yield an effective complementation for the advance and development of both Institutions.

AGREE

FIRST - To give in a mutual way scientific and cultural support to the interchange of teaching personnel and of students, according to annual programs previously established.

SECOND - To study and develop joint investigation projects, in such a way to achieve an effective improvement of human and material resources as well as of information.

THIRD - To develop cooperation forms and actions in other areas of mutual interest, such as, Congresses promotion, technical cooperation activities, technology transference, etc.

FOURTH - Each side is in accordance that each specific activity to be developed, should be defined and detailed in terms of its objectives, mechanisms, time and resources, through complementary acts which as soon as they are approved will be part of this AGREEMENT, in condition of Annex.

FIFTH - To the realization of staff and students interchange programs, and to the development of investigation and technical cooperation, projects the parts will seek through national and international entities, in a joint or independent way, the necessary financial resources.

SIXTH - In all communications and publications pertinent to programs originating from this AGREEMENT, both signing Institutions will be mentioned.

SEVENTH - For the coordination of the actions that may present itself in this Agreement, we appoint on the part of the UDESC, Prof. Rafael Camargo Rodrigues de Lima, Environmental Engineering/CAV, and on the part of ICRANet, Prof. Remo Ruffini.

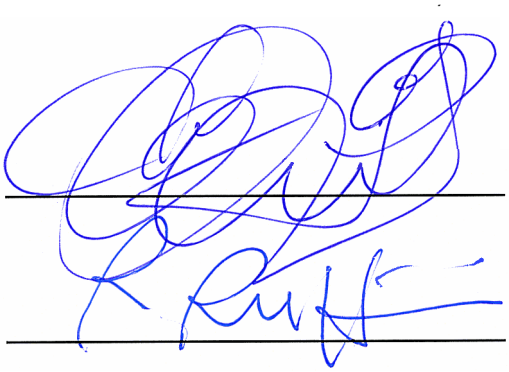
EIGHTH - This Agreement will be enforced at the moment of the date of its signature and its duration will be of 5 years, with an automatic renovation for the same period, unless one of the parts expresses his wish of amendment or cessation. In such case they will be advised in writing with a precedence of not less than three months.

NINTH - This Agreement extends to 4 copies 2 in Portuguese and 2 in English versions that have the same juridical validity, each part keeping two.

Having read this AGREEMENT and understanding the context and reach of each of the clauses it is signed by:

9, 04 /__ /2016.

UDESC
Prof. Marcus Tomasi, Rector



ICRANet
Prof. Remo Ruffini, Director

Witnesses:

1) _____ (CESAR ZEN)

2) _____ (Rafael de Lima)

CONVÊNIO DE COOPERAÇÃO

ENTRE

A UNIVERSIDADE FEDERAL DA PARAÍBA

E

ICRANET

O presente Convênio tem por finalidade regular as ações destinadas a estreitar as relações de cooperação acadêmica entre a Universidade Federal da Paraíba e o *International Center for Relativistic Astrophysics Network* (ICRANet), organização internacional sediada na Itália, obedecendo às seguintes cláusulas:

Cláusula 1
Das Atividades

As atividades a serem desenvolvidas no âmbito do presente Convênio de cooperação consistirão de ações conjuntas envolvendo:

I – intercâmbio institucional de docentes, pesquisadores, discentes de graduação e de pós-graduação;
II – desenvolvimento de atividades de ensino e/ou pesquisa relacionadas às áreas de atuação da UFPB e do ICRANet;
III – organização de simpósios, conferências, cursos de curta duração nas áreas de pesquisa;
IV – promoção de atividades e eventos técnico-científicos e culturais abertos à população em geral;
V – oferta de oportunidade de formação de docentes e pesquisadores, mediante criação de cursos especializados de alto nível;
VI – oferta de cursos de treinamento e reciclagem, bem como o incentivo à abertura de linhas de pesquisa interinstitucional associadas a programas locais de pós-graduação;

COOPERATION AGREEMENT

BETWEEN

UNIVERSIDADE FEDERAL DA PARAÍBA

AND

ICRANET

The present Agreement has as its main objective to regulate activities aimed at strengthening academic cooperation between the Universidade Federal da Paraíba and the *International Center for Relativistic Astrophysics Network* (ICRANet), international organization based in Italy, in accordance with the following clauses:

Clause 1
Activities

The activities to be developed within the scope of the present cooperation Agreement will consist of joint actions including:

I – the institutional exchange of faculty members, researchers, undergraduate and post-graduate students;
II – the development of teaching and/or research activities, related to the areas in which UFPB and ICRANet act ;
III – the organization of seminars, conferences, short courses in those areas;
IV – the support of technical-scientific and cultural events and activities open to the public;
V – the development of opportunities to form university teachers and researchers, by means of specialized advanced high-level courses;
VI – the organization of training and recycling courses, and the development of inter-institutional research areas associated to local graduate programs;

VII – promoção de publicações conjuntas;
VIII – conferências e outras ações abertas ao público objetivando a popularização da ciência;
IX – intercâmbio de informações pertinentes ao ensino e à pesquisa, em cada instituição.

VII – joint publications;
VIII – public conferences and other actions aiming at the popularization of science;
IX – exchange of information concerning teaching and research activities in each institution.

Cláusula 2
Dos Termos Aditivos

A implementação das atividades abrangidas será determinada em **Termos Aditivos** ao presente instrumento, a serem firmados pelas partes, na medida em que sejam identificados projetos, linhas de pesquisa ou extensão e outras atividades de mútuo interesse.

Nos termos Aditivos deverão constar: projeto de pesquisa com plano de trabalho e cronograma, recursos humanos e materiais envolvidos, coordenadores responsáveis pelo acompanhamento das atividades.

Clause 2
Addenda

The implementation of the activities will be specified by means of **Additional Terms** to the present cooperation Agreement. These will be signed by the parties at the time of defining projects, research areas or education, or other activities of mutual interest.

The Addenda must include: a research project with time schedule, human and material resources and individuals responsible for the planned activities.

Cláusula 3
Dos Compromissos

Ambas instituições deverão adotar, como princípio geral, dentro de suas possibilidades orçamentárias, o financiamento das ações acadêmicas derivadas deste Convênio. A parte que envia docentes/técnicos poderá cobrir os custos de transporte. A parte que recebe poderá cobrir os gastos de estadia. Os docentes deverão buscar financiamento junto às agências de fomento, instituições nacionais e/ou internacionais.

Parágrafo-único: é da responsabilidade dos estudantes, do pessoal técnico-administrativo, dos professores e dos pesquisadores, exercendo atividades de intercâmbio, obter seguro saúde válido para o período das atividades previstas neste convênio.

Clause 3
Commitments

Both institutions must adopt, as a general principle within their respective budget constraints, the financing of the academic activities derived form this Agreement. The party that sends faculty members or technicians can cover their transportation costs. The party that receives them can cover their living expenses. The faculty members must seek funding from support agencies, national and/or international institutions.

Sole paragraph: It is responsability of the students, the technical and administrative staff, the professors and the researchers, involved in exchange activities obtains health insurance valid for the period of their activities.

Cláusula 4
Dos Produtos Acadêmicos

Clause 4
Academic Products

Quando da execução das atividades decorrentes do presente instrumento de cooperação resultarem produtos, processos ou conexos, aperfeiçoamentos ou inovações passíveis de privilégios, de acordo com a legislação que regule uma ou ambas as partes, estas estabelecerão, em instrumento próprio, as condições que regularão os direitos de propriedade que serão requeridos na forma da lei pelas duas partes, conjuntamente, na proporção de suas contribuição para sua consecução.

When activities originating from the present instrument of cooperation result in products, improvements or innovations subject to rights, according to proper regulatory legislation ruling either one or both parties, both parties will establish by means of a specific instruments, the conditons that will regulate property rights, in accordance with the law and proportionally to the contribution of each institution.

Clásula 5
Executores

As atividades realizadas na esfera deste Convênio de Cooperação serão executadas pelos componentes organizacionais de ambas as partes a serem designados, conforme a natureza das ações a se desenvolverem em cada caso, podendo contar com o apoio de outros organismos externos.
Um Comitê Operacional Permanente, composto por dois membros de cada uma das instituições envolvidas, será nomeado no Primeiro Termo Aditivo do presente Acordo. O Comitê se reunirá, pelo menos uma vez por ano, para traçar planos para os eventos conjuntos e colaborações. A reunião poderá ocorrer através de meios eletrônicos (tais como vídeo-conferência).

Clause 5
Executors

The activities developed within the scope of this Cooperation Agreement will be carried out by members of both parties, appointed by each institution, according to the nature of the activities in each case, the parties being allowed to rely upon the support of external organization.
An Operational Standing Committee, composed by two members of each of the signing institutions, will be nominated in the First Addendum of this Agreement. The Committee will meet, at least once a year, to draw plans for the joint events and collaborations. The meeting can occur by electronic means (such as e-conference).

Clásula 6
Do Prazo

O presente instrumento terá validade de 5 (cinco) anos a partir da data de sua assinatura.

Clause 6
Duration

The present instrument will be valid for 5 (five) years, form the date of its signature.

Clásula 7
Da Denúncia

Este instrumento de cooperação poderá ser denunciado por qualquer uma das partes, mediante notificação apresentada com antecedência mínima de 60 (sessenta) dias –

Clause 7
Cancellation

The present cooperation Agreement may be canceled by any of the parties, by means of notification presented at least 60 (sixty) days in advance – which may be waived if both

que será dispensada, havendo consenso entre ambas, devendo-se ponderar sobre a salvaguarda de atividades que por ventura estiverem em andamento.

Parágrafo-único: Este instrumento tornar-se-á automaticamente extinto na hipótese de se darem quaisquer circunstâncias impedidoras de sua validade prevista em legislação que regule uma ou ambas as partes.

Cláusula 8
Do Foro

Fica eleito o foro da cidade de João Pessoa para dirimir eventuais questões decorrentes da execução deste convênio.

E, por estarem assim acordados, os representantes das partes assinam o presente instrumento, em duas vias do mesmo documento para garantir efeito jurídico.

Data: 08 / NOV / 2012

UFPB

Rômulo Soares Polari
Reitor da UFPB

parties come to a consensual agreement, being advisable, however, to see that ongoing activities be maintained.

Sole paragraph: This instrument will be automatically extinguished if any circumstances foreseen in legislations ruling either one or both parties prevent the observance of its validity.

Clause 8
Jurisdiction

The parties consent to the jurisdiction of an appropriate court located in the city of João Pessoa for any controversy or claim arising out of this Agreement.

All terms having been agreed upon, the representatives of the parties signed the present instrument, with two copies of the same document to ensure legal effect.

Date: 29 / 11 / 2012

ICRANet

Professor Remo Ruffini

Scientific Cooperation Program Signed between the International Center for Relativistic Astrophysics Network and the Government of the State of Ceará

By this instrument, the signatories agree to extend to the system of Science and Technology and Higher Education of the State of Ceará, represented by the Secretaria da Ciência, Tecnologia e Ensino Superior, the benefits of the International Agreement signed between Brazil and the International Center for Relativistic Astrophysics Network (ICRANet) in September 21, 2005 and ratified by the National Congress in October 24, 2007, as follows:

First: The Universidade Estadual do Ceará (State University of Ceará) - UECE, with its main campus in Fortaleza, shall be contemplated with the aim to consolidate the Fundamental Physics and Astrophysics Group, with a later expansion to Cosmology and other possible developments;

Second: The Universidade Estadual do Vale do Acaraú (State University of the Acaraú Valley) – UVA, with its main campus in the city of Sobral, shall be contemplated with the aim of upgrading its teaching and research in the field of Physics, as well as creating a program of scientific education and outreach in the areas of Fundamental Physics, Astrophysics, Cosmology and Astronomy;

Third: ICRANet's participation will comprehend mainly the training of personnel with the required qualification at the level of doctorate and post-doctorate, the permanent scientific exchange, and all the facilitation within its powers, directly and/or via the Instituto de Cosmologia, Relatividade e Astrofísica, ICRABrasil/CBPF (Institute of Cosmology, Relativity and Astrophysics/ CBPF);

This Agreement is open to the participation of other institutions of the State of Ceará, in particular to the Department of Physics of the Federal University of Ceará (UFC) based upon addedum to this document;

Fourth: Actions and activities issuing from this Act shall be the object of adendum approved by the parties.

Fifth: The Fundação de Apoio ao Desenvolvimento Científico e Tecnológico do Ceará – FUNCAP shall participate of programs to implement this Agreement pursuant to its work policies, criteria and priorities.

On this the 26th Day of May, 2009, in Fortaleza, Ceará, at the Centro Dragão do Mar de Arte e Cultura.

CID GOMES
State Governor of Ceará, Brazil

REMO RUFFINNI
Director General of ICRANet

René Barreira
State Secretary of Science, Technology and Highter Education

José Monserrat Filho
Representative of Brazil Minister of Science and Technology

Francisco de Assis M. Araripe
President of UECE

Antonio Colaço Martins
President of UVA

Ricardo Galvão
Director of CBPF

Tarcísio Pequeno
President of Funcap

Selo de Autenticidade
FUNDO ESPECIAL PARA O REGISTRO CIVIL
AUTENTICAÇÃO
03 DI 749468

CLÁUDIO MARTINS
Rua Barão do Rio Branco, 470
Válido somente com o Selo de Autenticidade

ESTA FOTOCÓPIA CONFERE COM O ORIGINAL. DOU FÉ.
FORT
20 JUL. 2009
EM TESTEMUNHO DA VERDADE
CLÁUDIO MARTINS
Tabelião

[illegible] LOPES DA SILVA
Escrevente Autorizado

Mário Novello

Coordinator of ICRABrasil

F. J. Amaral Vieira

Secretary General of ICRANet for South América

Gil Aquino de Farias

Pro-Rector for Research and

Graduate Studies Federal University

PROTOCOLO DE COOPERAÇÃO FIRMADO ENTRE A REDE INTERNACIONAL DE CENTROS DE ASTROFÍSICA (ICRANET) E O GOVERNO DO ESTADO DO CEARÁ

Pelo presente, concordam os signatários quanto a que devem ser estendidos ao sistema de Ciência, Tecnologia e Ensino Superior do Estado do Ceará, os benefícios do Acordo Internacional celebrado entre o Brasil e a International Center for Relativistic Astrophysics Network, ICRANet, em 21 de setembro de 2006 e ratificado pelo Congresso Nacional em 2007, da forma que se segue: Primeiro: A **UNIVERSIDADE ESTADUAL DO CEARÁ, (UECE)** sediada em Fortaleza, será contemplada com o objetivo de **consolidar seu Grupo de Física Fundamental e de Astrofísica**, com expansão para Cosmologia, mediante o apoio ao desenvolvimento de pesquisa científica original e formativa do que devera decorrer a criação de um curso local de pós-graduação, assim como de outros desenvolvimentos possíveis. Segundo: A **UNIVERSIDADE ESTADUAL VALE DO ACARAÚ, (UVA)**, sediada em Sobral, será contemplada objetivando o **melhoramento do ensino e da pesquisa na área de física**, assim como a criação de um programa de educação e divulgação científica nas áreas de astrofísica, cosmologia e astronomia; § único: Este acordo está aberto à participação de outras instituições científicas do Estado Ceará, em particular ao Departamento de Física da Universidade Federal do Ceará (UFC) mediante termo aditivo a este documento; Terceiro: A participação da ICRANet compreenderá principalmente a formação de pessoal com qualificação requerida no nível de doutorado e pós-doutorado, o intercâmbio científico permanente, e a concessão de todas as facilidades que estiverem ao alcance da mesma, diretamente e ou através do Instituto de Cosmologia, relatividade e Astrofísica CBPF; Quarto: As ações e atividades decorrentes deste Protocolo serão objeto de projetos específicos a serem elaborados e aprovados pela partes. Quinto: A Fundação de Apoio ao Desenvolvimento Científico e Tecnológico do Ceará (FUNCAP) participará dos programas de implementação deste Acordo conforme as normas a que está sujeita e seus critérios e prioridades de trabalho. Aos 26 dias do mês de maio do ano de dois mil e nove, em Fortaleza, Ceará, no Centro Dragão do Mar de Arte e Cultura. Signatários: CID GOMES - Governador do Estado, REMO RUFFINNI - Diretor Geral da ICRANet; René Barreira - Coordenador do ICABrasil; José Monserrat Filho - Coordenador do ICRABrasi Representante do Ministro da C&T, Francisco de Assis M. Araripe - Reitor da UECE, Antonio Colaço Martins - Reitor da UVA, Ricardo Galvão - Diretor do CBPF; Tarcísio Pequeno -Presidente da Funcap; Mário Novello - Coordenador do ICRABrasil;F. J. Amaral Vieira - Secretário Geral da ICRANet para América do Sul; GIL Aquino de Farias - Pró-Reitor de Pesquisa e Pós-Graduação da UFC. SECRETARAIA DA CIÊNCIAM, TECNOLOGIA E EDUCAÇÃO SUPERIOR, em Fortaleza, 17 de julho de 2009.

Rene Teixeira Barreira
SECRETÁRIO DA CIÊNCIA, TECNOLOGIA
E EDUCAÇÃO SUPERIOR

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SECRETARIA DA CULTURA

PORTARIA Nº164/2009 - O SECRETÁRIO DA CULTURA, no uso de suas atribuições legais e de acordo com o inciso III, do art.20, do Decreto nº29.704, de 08 de Abril de 2009, RESOLVE **DESLIGAR**, o estagiário **FRANCISCO LEVI JUCÁ SALES**, da área de História, da Secretaria da Cultura, a partir de 30/06/2009. SECRETARIA DA CULTURA, em Fortaleza, 08 de julho de 2009.

Francisco Auto Filho
SECRETÁRIO DA CULTURA
Registre-se e publique-se

*** *** ***

INEXIGIBILIDADE DE LICITAÇÃO Nº16/2009
ADENDO

O SECRETÁRIO DA CULTURA DO ESTADO DO CEARÁ, no uso de suas atribuições legais, RESOLVE **acrescer no Instrumento da Inexigibilidade de Licitação nº16/2009**, publicada no Diário Oficial de 15 de Abril de 2009, a **seguinte dotação orçamentária** 2700010.13 391 134.10624 08 44905200.00.0.00 Fortaleza, 23 de julho de 2009

Ana Lúcia Carneiro Bezerra
ASSESSORA JURÍDICA

*** *** ***

TERMO DE COOPERAÇÃO FINANCEIRA Nº32/2009

Espécie: TERMO DE COOPERAÇÃO FINANCEIRA QUE ENTRE SI CELEBRAM O ESTADO DO CEARA ATRAVES DA SECRETARIA DA CULTURA - SECULT E O(A) SR(A). **JARILEIDE FEITOZA NEVES**. Objeto: Constitui objeto do presente Termo a **concessão de apoio financeiro**, que o Estado do Ceara presta ao Selecionado, através do Fundo Estadual de Cultura - FEC, para execução do Projeto "CIRCO NEVES" da Categoria CIRCO, devidamente aprovado no V Edital de Incentivo às Artes no Ceará, publicado no Diário Oficial do Estado nº048, em 13 de março de 2009. Vigência: a partir da data de assinatura deste Instrumento e terá duração até 01 de março de 2010 Valor global de R$18.750,00 (dezoito mil, setecentos e cinquenta reais), sendo R$15.000,00 (quinze mil reais) oriundos dos recursos financeiros do Fundo Estadual de Cultura – FEC, na dotação orçamentaria nº27200004.13.392 110.20363.01 33904800.70.0.00 e R$3.750,00 (três mil, setecentos e cinquenta reais) oferecidos como contrapartida do SELECIONADO. A liberação dos recursos ocorrera em parcela única. Foro: Fortaleza - CE Data da assinatura, 31 de julho de 2009 Assinantes: FRANCISCO AUTO FILHO - Secretário da Cultura e JARILEIDE FEITOZA NEVES - Selecionadota) SECRETARIA DA CULTURA DO ESTADO DO CEARÁ, em Fortaleza, 05 de agosto de 2009

Ana Lúcia Carneiro Bezerra
ASSESSORA JURÍDICA

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SECRETARIA DO DESENVOLVIMENTO AGRÁRIO

PORTARIA Nº721/2009 - O SECRETÁRIO ADJUNTO DO DESENVOLVIMENTO AGRÁRIO DO ESTADO DO CEARÁ, no uso de suas atribuições legais, RESOLVE AUTORIZAR o servidor **JOSÉ LIMA CASTRO JUNIOR**, ocupante do cargo de Coordenador do Desenvolvimento Agrario, matricula nº407880-1-8, desta Secretaria do Desenvolvimento Agrário, a **viajar** as cidades de Sobral, no período de 15/07 à 16/07/2009 a fim de Participar de reunião com representações da Sociedade Civil e Poder Público no sentido da elaboração da Minuta da Lei Estadual de Terras, concedendo-lhe 1,5 (uma) diária e meia, no valor unitário de R$67,63 (Sessenta e sete reais e sessenta e três centavos), totalizando R$101,44 (Cento e um reais e quarenta e quatro centavos), de acordo com o artigo 1º; alínea b do §1º do art 3º; art 9º do Decreto nº26.478, de 21 de dezembro de 2001, classe III do anexo único do Decreto nº29.357 de 11 de julho de 2008, devendo a despesa correr à conta da dotação orçamentária da Coordenadoria de Planejamento e Gestão PA 25029 PF 2108032008. SECRETÁRIA DO DESENVOLVIMENTO AGRARIO, em Fortaleza, 14 de julho de 2009

Antonio Rodrigues de Amorim
SECRETÁRIO ADJUNTO DO DESENVOLVIMENTO AGRARIO
Registre-se e publique-se.

*** *** ***

PORTARIA Nº736/2009 - O SECRETÁRIO ADJUNTO DO DESENVOLVIMENTO AGRÁRIO DE ESTADO DO CEARÁ, no uso de suas atribuições legais, RESOLVE AUTORIZAR o servidor **JOSÉ LIMA CASTRO JUNIOR**, ocupante do cargo de Coordenador do Desenvolvimento Agrário, matricula nº407.880-1-8, desta Secretaria do Desenvolvimento Agrário, a **viajar** às cidades de Crato, no período de 20/07 à 22/07/2009 a fim de Participar de reunião com representantes da Sociedade Civil e Poder Público no sentido da elaboração da Minuta da Lei Estadual de Terras, concedendo-lhe 2,5 (duas) diárias e meia, no valor unitário de R$67,63 (Sessenta e sete reais e sessenta e três centavos), totalizando R$169,07 (Cento e sessenta e nove reais e sete centavos), de acordo com o artigo 1º, alínea b do §1º do art 3º, art 9º do Decreto nº26.478, de 21 de dezembro de 2001, classe III do anexo único do Decreto nº29.357 de 11 de julho de 2008, devendo a despesa correr à conta da dotação orçamentária da Coordenadoria de Planejamento e Gestão PA 25029 PF 2108032008. SECRETARIA DO DESENVOLVIMENTO AGRÁRIO, em Fortaleza, 20 de julho de 2009

Antonio Rodrigues de Amorim
SECRETÁRIO ADJUNTO DO DESENVOLVIMENTO AGRÁRIO
Registre-se e publique-se.

*** *** ***

PORTARIA Nº739/2009 - O SECRETÁRIO ADJUNTO DO DESENVOLVIMENTO AGRÁRIO DO ESTADO DO CEARÁ, no uso de suas atribuições legais, RESOLVE AUTORIZAR o servidor **JOSÉ LIMA CASTRO JUNIOR**, ocupante do cargo de Coordenador do Desenvolvimento Agrário, matricula nº407.880-1-8, desta Secretaria do Desenvolvimento Agrário, a **viajar** às cidades de Caninde, no período de 23/07 à 24/07/2009 a fim de Participar de reunião com representações da Sociedade Civil e Poder Público no sentido da elaboração da Minuta da Lei Estadual de Terras, concedendo-lhe 1,5 (uma) diária e meia, no valor unitário de R$67,63 (Sessenta e sete reais e sessenta e três centavos), totalizando R$101,44 (Cento e um reais e quarenta e quatro centavos),

IFCE
INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DO CEARÁ

MEMORANDO DE ENTENDIMENTO

firmado entre a

INTERNATIONAL CENTER FOR RELATIVISTSIC ASTROPHYSICS NETWORK (ICRANet)

e o

INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DO CEARÁ (IFCE)

O ***INTERNATIONAL CENTER FOR RELATIVISTSIC ASTROPHYSICS NETWORK***, doravante denominado **ICRANet**, neste ato representado pelo seu Diretor, **Prof. REMO RUFFINI** e o **INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DO CEARÁ,** doravante denominado **IFCE**, representado neste ato pelo seu Mag. Reitor, **Prof. VIRGÍLIO AUGUSTO SALES ARARIPE**:

CONSIDERANDO

O acordo formal da República Federativa do Brasil como membro da ICRANet, assinado pelo Presidente da República Federativa do Brasil, LUIZ INÁCIO LULA DA SILVA, em 21 de setembro de 2005, aprovado pelo Decreto Legislativo nº 292 do Congresso Nacional (Diário Oficial da União nº 205, página 3, de 24 de outubro de 2007) e finalizado pela presidente DILMA ROUSSEFF em 12 de agosto de 2011 (Decreto nº 7.552, de 12 de agosto de 2011) e o Acordo de Cooperação entre o ICRANet e o Governo do Estado do Ceará assinado em agosto de 2009.

Acordam celebrar o presente Memorando de Entendimento que se regerá pelas seguintes cláusulas em cujo texto, nos referiremos à ICRANet e ao IFCE para designar as partes nele envolvidas:

ICRANet
INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK

MEMORANDUM OF UNDERSTANDING

established between the

INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK (ICRANet)

and the

INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DO CEARÁ (IFCE)

The **INTERNATIONAL CENTER FOR RELATIVISTSIC ASTROPHYSICS NETWORK**, hereinafter **ICRANet**, herein represented by its Director, **Prof. REMO RUFFINI** and the ***INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DO CEARÁ***, hereinafter **IFCE**, represented herein by its Mag. Rector, **Prof. VIRGÍLIO AUGUSTO SALES ARARIPE**:

PREAMBLE

The formal agreement of the Federative Republic of Brazil as a Member of ICRANet, signed by the President of the Federative Republic of Brazil, LUIZ INÁCIO LULA DA SILVA, on September 21st, 2005, approved by the Legislative Decree No. 292 from the Brazilian National Congress (Union Official Gazette No. 205, page 3 issued on October 24th, 2007), and finalized by President DILMA ROUSSEFF on August 12th, 2011 (DECREE No 7.552 published August 12th, 2011), and the Cooperation Protocol between ICRANet and the Government of the State of Ceará signed in August, 2009.

The Parties agree to sign this Memorandum of Understanding, which shall be governed by the following clauses, in which we will refer to ICRANet and IFCE in order to designate the Parties involved herein:

IFCE
INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA
DO CEARÁ

ICRANet
INTERNATIONAL CENTER FOR
RELATIVISTIC ASTROPHYSICS NETWORK

CLÁUSULA PRIMEIRA:
Os principais objetivos deste Memorando de Entendimento são promover o desenvolvimento e a difusão da pesquisa científica e tecnológica nos campos da astrofísica relativística entre a ICRANet e o IFCE incluindo os seus vários campi universitários.

CLÁUSULA SEGUNDA:

As atividades a serem desenvolvidas no âmbito do presente Memorando de Entendimento consistirão de ações conjuntas envolvendo um ou mais dos seguintes itens:

I. Divulgação da ciência no campo da astrofísica relativística tendo como pressupostos a educação, a comunicação e ampliação do alcance destas ações para assegurar que todos os estudantes possam beneficiar-se da proposta;

II. Organização de atividades educacionais e de comunicação direcionadas à divulgação dos resultados das pesquisas realizadas no âmbito da ICRANet;

III. Organização de atividades de outras naturezas que tenham como objetivo uma ampla divulgação das atividades científicas bem como a participação dos alunos de todos os níveis de educação, dos educadores e de toda a comunidade tecnológica, trazendo à tona questões importantes para a sociedade brasileira e promover um amplo debate sobre estas questões;

IV. Divulgação da ciência no campo da astrofísica relativística, incluindo diversas mídias eletrônicas, disponibilizando material didático sem nenhum custo para as escolas do Ceará, incluindo atividades interdisciplinares;

FIRST CLAUSE:
The main objectives of this Memorandum of Understanding are to promote the development and dissemination of scientific and technological research in the fields of relativistic astrophysics between ICRANet and IFCE including its several academic campuses.

SECOND CLAUSE:

The activities to be undertaken under the scope of this Memorandum of Understanding shall consist of joint actions involving one or more of the following items:

I. Publicize science in the field of relativistic astrophysics by having as assumptions: education, communication, and expansion of the range of those actions in order to ensure that all students can benefit from such proposal;

II. Organization of education and communication activities aimed at disseminating the results of all research carried out within ICRANet;

III. Organization of other activities which aim to accomplish a broad publication of scientific activities as well as to stimulate the participation of students from all educational levels, educators, and the whole technological community, in a way that will effectively contribute with relevant educational aspects, bringing up important matters for the Brazilian society and promoting a wide debate about those issues;

IV. Dissemination of science in the field of relativistic astrophysics by including several kinds of electronic media, and providing educational material free of charge to schools in Ceará as well as adding interdisciplinary activities;

IFCE
INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA
DO CEARÁ

ICRANet
INTERNATIONAL CENTER FOR
RELATIVISTIC ASTROPHYSICS NETWORK

V. Organização de workshops, entrevistas e palestras, elaboração de textos de divulgação, relatórios e outras atividades que proporcionem o contato direto de membros da ICRANet com o público;

VI. Trocas de conhecimentos entre pesquisadores e educadores pertencentes às partes;

VII. Apoio da ICRANet ao IFCE objetivando o desenvolvimento técnico-científico do grupo de astrofísica;

VIII. Realização conjunta de pesquisas e publicação de artigos científicos em revistas internacionais;

IX. Intercâmbio de publicações, manuais e livros técnicos e didáticos.

CLÁUSULA TERCEIRA:
O escopo, as finalidades e a abrangência dos projetos, das linhas de pesquisa, das atividades de pesquisa, ensino e extensão bem como de outras atividades não explicitamente considerados no presente instrumento, mas que sejam de interesse mútuo das instituições signatárias do presente Memorando de Entendimento serão consubstanciadas em Planos de Trabalho, a serem firmados pelas partes;

CLÁUSULA QUARTA:
As instituições signatárias do presente Memorando de Entendimento deverão adotar, como princípio geral, dentro de suas possibilidades orçamentárias, a busca do financiamento das ações derivadas deste instrumento. No caso específico de intercâmbio de profissionais entre as instituições signatárias, a parte visitante envidará esforços para cobrir custos de transporte de discentes, e/ou docentes e/ou técnicos enquanto que a parte que recepcionará os visitantes envidará esforços para cobrir os custos de estada dos visitantes. Os participantes e as instituições signatárias poderão buscar

V. Organization of workshops, interviews and lectures, writing texts, reports, and other activities that shall enable the direct contact of ICRANet members with the public;

VI. Exchange of knowledge among researchers and educators from both Parties;

VII. ICRANet shall support IFCE by having the technical and scientific development of the astrophysics group as a goal;

VIII. Carry out joint research and publication of scientific articles in international journals;

IX. Exchange of publications, manuals, and technical textbooks

THIRD CLAUSE:
The scope, purpose, and range of projects; research lines; research, academic, and extramural activities; as well as other actions not explicitly considered in this instrument, but which are of mutual interest of the signatory institutions of this Memorandum of Understanding shall be submitted through Work Plans, to be signed by the Parties;

FOURTH CLAUSE:
The signatory institutions of this Memorandum of Understanding shall adopt, as a general principle, within their budgetary possibilities, the search for financing actions derived from this instrument. In the specific case of the exchange of professionals between the signatory institutions, the visiting Party shall endeavor all efforts to cover the transportation costs of students, and/or professors and/or administrative staff, while the hosting Party shall endeavor all efforts to pay for the visitors' accommodation costs. The participants and the signatory institutions may seek financing from national and international funding agencies

financiamentos junto às agências de fomento, nacionais ou internacionais, para a execução dos projetos referentes a este Memorando de Entendimento.

CLÁUSULA QUINTA:
Discentes, docentes, pesquisadores e pessoal administrativo que participam no programa de intercâmbio deverão ter seguro-saúde válido, pago pela parte emissora.

CLÁUSULA SEXTA:
Quando da execução das atividades decorrentes do presente instrumento de cooperação resultarem produtos, processos ou conexos, aperfeiçoamentos ou inovações, as partes estabelecerão em instrumento específico os direitos de propriedade correspondentes na forma da Lei.

CLÁUSULA SÉTIMA:
As atividades a serem executadas no âmbito deste Memorando de Entendimento serão realizadas por componentes das instituições signatárias, designados por cada uma das partes de acordo com natureza das atividades de pesquisa a serem realizadas, sendo permitido que as partes signatárias possam contar com apoio externo de diferente natureza.

CLÁUSULA OITAVA:
Cada uma das instituições signatárias designará um Coordenador Geral para acompanhar, coordenar e supervisionar a execução e a evolução dos programas ou projetos relacionados com este Memorando de Entendimento bem como estabelecer planos para o futuro da presente cooperação. Os Coordenadores Gerais das duas instituições se reunirão presencialmente pelo menos uma vez ao ano podendo realizar encontros sistemáticos por meio de conferência eletrônica.

CLÁUSULA NONA:
O presente instrumento terá validade por 03 (três) anos, a partir da data de sua assinatura, podendo ser prorrogado automaticamente por mais 03 (três) anos, necessitando para isto apenas a concordância, por meio de troca de correspondência, entre as instituições signatárias do presente instrumento.

in order to implement the projects related to this Memorandum of Understanding.

FIFTH CLAUSE:
Students, professors, researchers and administrative staff participating in exchange activities must have a valid health insurance, to be paid by the visiting Party, during the activities aforementioned.

SIXTH CLAUSE:
When the activities rising from this cooperation instrument result in products, processes or connections, improvements or innovations, the Parties shall establish the property rights in a specific instrument as set forth in the Law.

SEVENTH CLAUSE:
The activities to be implemented under this Memorandum of Understanding shall be performed by members of the signatory institutions, designated by each Party according to the nature of the research activities to be undertaken, and by allowing the parties to rely on external support from different nature.

EIGHTH CLAUSE:
Each of the signatory institutions shall appoint a Coordinator General to monitor, coordinate, and supervise the execution and development of the programs or projects related to this Memorandum of Understanding as well as to establish plans for the future of this cooperation. The Coordinators General from the two institutions shall meet in person at least once a year and may hold systematic meetings through electronic conference.

NINTH CLAUSE:
This instrument shall be valid for three (03) years from the date of its signing, and it may be extended automatically for another three (03) years, being mutually agreed through the exchange of correspondence between the signatory institutions hereof.

IFCE
INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA
DO CEARÁ

ICRANet
INTERNATIONAL CENTER FOR
RELATIVISTIC ASTROPHYSICS NETWORK

CLÁUSULA DÉCIMA:
Este instrumento poderá ser cancelado por qualquer uma das partes mediante notificação apresentada com antecedência mínima de 60 (sessenta) dias. Este prazo de antecedência poderá ser dispensado, havendo consenso entre as partes, devendo-se ponderar sobre a salvaguarda de atividades que por ventura estiverem sendo realizadas.

CLÁUSULA DÉCIMA PRIMEIRA:
Quaisquer modificações que se façam necessárias no escopo do presente Memorando de Entendimento serão objeto de um Termo Aditivo, sem prejuízo dos projetos conjuntos em curso. Em particular, este instrumento de cooperação poderá ser estendido a outras parcerias, por meio da concordância expressa das partes originalmente signatárias, por meio de Termo Aditivo.

Para efeitos do presente Memorando de Entendimento, as partes estabelecem como seu domicílios por meio dos quais deverão ser formalizadas as correspondências mantidas entre elas no que tange à interpretação e execução do presente Memorando de Entendimento a saber:

ICRANet: Centro de Coordenação: Piazza dela Repubblica, 10, 65122 Pescara, Itália;

IFCE: Av. Rui Barbosa, 2847 - Joaquim Távora, CEP: 60115-222 – Fortaleza/Ceará, Brasil.

E por estarem de comum acordo, assinam o presente instrumento, em duas vias, uma em inglês e outra em português, de igual teor e forma e para um só efeito.

Fortaleza, Ceará, Brasil, em 22 de abril de 2015.

PROF. VIRGÍLIO AUGUSTO SALES ARARIPE

REITOR DO IFCE

TENTH CLAUSE:
This instrument may be terminated by either party upon notification within at least 60 (sixty) days. This period of notice may be waived, if there is an agreement between the Parties, and by considering the safeguard of the activities that are probably being carried out.

ELEVENTH CLAUSE:
Any modifications that may be necessary under the scope of this Memorandum of Understanding shall be subject to an Addendum without any prejudice to the ongoing joint projects. In particular, this instrument of cooperation may be extended to other partnerships, through the express agreement of the original signatory Parties through an Addendum.

For the purposes of this Memorandum of Understanding, the Parties establish their headquarters, through which formal correspondence between the Parties shall be addressed to regarding the interpretation and execution of this Memorandum of Understanding as follows:

ICRANet: Centro de Coordenação: Piazza dela Repubblica, 10, 65122 Pescara, Itália;

IFCE: Av. Rui Barbosa, 2847 - Joaquim Távora, CEP: 60115-222 – Fortaleza/Ceará, Brasil.

All terms having been agreed upon, the representatives from both Parties sign the two copies of this instrument in English and Portuguese, of equal content and form and for one sole purpose.

Fortaleza, Ceará, Brazil, on April 22, 2015.

PROF. REMO RUFFINI

DIRECTOR ICRANet

COOPERATION PROTOCOL BETWEEN THE INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS (ICRA) AND THE UNIVERSIDADE FEDERAL DE PERNAMBUCO (UFPE)

The **International Center for Relativistic Astrophysics-ICRA**, represented by its Director, Prof. Dr. Remo Ruffini and the **Universidade Federal de Pernambuco**, represented by its Rector, Prof. Dr. Anísio Brasileiro de Freitas Dourado:

CONSIDERING

The formal Collaboration Agreement establishing the International Network of Relativistic Astrophysics Centers - ICRANET, signed by the President of the Federative Republic of Brazil, Luiz Inacio Lula Da Silva, on September 21, 2005, and approved by the Legislative Decree No. 292 of the Brazilian National Congress (Official Gazette of Union No. 205, page 3 of October 24, 2007):

AGREE

to establish this Cooperation Protocol which is governed by the following clauses:

FIRST:

The main objectives of this Cooperation Protocol are, in general, to promote the development and dissemination of scientific and technological research in the fields of Cosmology, Gravitation and Relativistic Astrophysics between the International Center For Network Relativistic Astrophysics - ICRANET, which brings together several institutions under the coordination of the International Center For Relativistic Astrophysics - ICRA and the Universidade Federal de Pernambuco-UFPE, through the Departments of Mathematics, Physics and Nuclear Energy, under the auspices of the Collaboration Agreement establishing the International Network of Relativistic Astrophysics Centers - ICRANET, signed by the President of the Federative Republic of Brazil. Henceforth we will refer in this document to ICRANET, UFPE and the Departments of Mathematics, Physics and Nuclear Energy to designate the institutions which participate in this present Cooperation Protocol.

SECOND:

The activities to be undertaken under this Cooperation Protocol will consist of joint actions involving one or more of the following items:

I – The institutional exchange of graduate or post-graduate students, researchers and faculty members;

II – The development of teaching and/or research activities related to the areas of expertise and interest of the Departments of Mathematics, Physics and Nuclear Energy of UFPE and ICRANET;

III – The organization of symposia, seminars, conferences and short courses on topics and areas of expertise and interest of the Departments of Mathematics, Physics and Nuclear Energy of UFPE and ICRANET;

IV – The promotion and support of technical-scientific and cultural events and activities open to the public;

V – The development of opportunities to form university teachers and researchers, by means of specialized advanced high-level course in areas of interest and expertise of Departments of Mathematics, Physics and Nuclear Energy of UFPE and ICRANET;

VI – The organization of training and recycling courses and activities as well as the developing of inter-institutional research areas associated to local graduate programs;

VII – The promotion of joint publications;

VIII – The promotion of public conferences and other actions aiming dissemination of science;

IX - Exchange of information concerning teaching and research activities in both institutions signatory of this Cooperation Protocol.

THIRD:

The implementation of the activities envisaged by the contracting parties will be specified by means of Work Plans relative to this Cooperation Protocol, to be signed by the contracting parties at the time of definition of common projects, areas of research and education, or any other activities of mutual interest.

FOURTH:

The institutions signatories of this Cooperation Protocol shall adopt, as a general principle, and to the extent of their budgetary possibilities, the financing of academic actions carried out by this instrument. In the specific case of exchange of professional between the signatory institutions, the visiting institution shall endeavor efforts to cover transportation expenses of their students, professors and technicians while the hosting institution may cover their living expenses. To finance such expenses, participants must apply to granting agencies and other national or international institutions.

Students, professors, researchers and administrative staff taking part in exchange activities must have health insurance valid during those activities paid by the visiting part.

FIFTH:

When activities originating from this instrument of cooperation result in products, improvements or innovations, subject to rights, both parties will establish, --- according to the law and to proper regulatory legislation, by means of specific instruments and proportionally to the contribution of each institution ---, the conditions that will regulate property rights.

SIXTH:

The activities developed within the scope of this Cooperation Protocol will be carried by members of both parties, appointed by each institution, according to the nature of the activities in each project, the parties being allowed to rely upon the support of external organizations.
An overall coordinator will be appointed for each of the signing Institutions in order to monitor and supervise the implementation and progress of programs and projects related to the present Cooperation Protocol and to establish plans for the future of this cooperation.
The coordinators will meet at least once a year or by electronic means (such as e-conference), or through visits to partner institutions.

SEVENTH:

This present instrument will be valid for 3 (three) years, starting from the date of its signature. It can be extended for another 3 (three) years through the formalization of an Additive Term proceded by prior permission of the competent authorities of both institutions.

EIGHTH:

This present Cooperation Protocol may be canceled by either of the parties, by means of a notification at least 60 (sixty) days in advance--- which may be waived if both parties come to a consensual agreement ---, being advisable, however, to attempt to ensure that ongoing activities are maintained.

NINTH:

Any necessary modification to the present Cooperation Protocol must be stated in Additional Terms that will be negotiated between the parties, without prejudice to ongoing activities.
In particular this instrument of cooperation could be extended to other partnerships, through the express agreement of the parties through an Additional Term.

FARH.

TENTH:

For purposes of this Cooperation Protocol the parties establish their addresses as: I.C.R.A. NETWORK COORDINATING CENTER: Piazza della Repubblica, 10, 65122 Pescara, Italy;
Universidade Federal de Pernambuco, Av. Professor Moraes Rego, N. 1235, Cidade Universitária, Recife-PE, CEP: 50670-901, Brasil, through which the correspondence held between with respect to the interpretation and enforcement of this Cooperation Protocol should be formalized.
All terms having been agreed upon, the representatives of the parties signed the present instrument, with 4 (four) copies, 2 (two) copies in English and 2 (two) copies in Portuguese, of the same document to ensure legal effect.

Universidade Federal de Pernambuco
Prof. Dr. Anísio Brasileiro de Freitas Dourado
Rector
Date: 29/08/14

International Center for Relativistic Astrophysics
Prof. Dr. Remo Ruffini
Director
Date: 29/08/14

on behalf of:
Prof. Dr. César A. Z. Vasconcellos
International Committee-ICRA

Departamento de Matemática da UFPE
Prof. Airton Castro
Head of the Department

Departamento de Física da UFPE
Prof. Antônio Azevedo da Costa
Head of the Department

Departamento de Energia Nuclear da UFPE
Prof. José Araújo dos Santos Jr.
Head of the Department

PROTOCOLO DE INTENÇÕES

ENTRE

UNIVERSIDADE FEDERAL DE ITAJUBÁ

E

ICRANET

O presente documento tem por finalidade regular as ações destinadas a estreitar as relações de cooperação acadêmica entre a Universidade Federal de Itajubá (UNIFEI) e o *International Center for Relativistic Astrophysics* (ICRANet), organização internacional sediada na Itália, obedecendo às seguintes cláusulas:

Cláusula 1
Das Atividades

As atividades a serem desenvolvidas no âmbito do presente Protocolo de Intenções de cooperação consistirão de ações conjuntas envolvendo:

I – intercâmbio institucional de docentes, discentes de graduação e de pós-graduação;
II – desenvolvimento de atividades de ensino e/ou pesquisa, relacionadas às áreas de atuação da UNIFEI e do ICRANet;
III – organização de simpósios, conferências ou cursos de curta duração nas áreas de pesquisa;
IV – promoção de atividades e eventos técnico-científicos e culturais abertos à população em geral;
V – oferta de oportunidade de formação de docentes e pesquisadores, mediante criação de cursos especializados de alto nível;
VI – oferta de cursos de treinamento e reciclagem, bem como o incentivo à

LETTER OF INTENT

BETWEEN

UNIVERSIDADE FEDERAL DE ITAJUBÁ

AND

ICRANET

The present Agreement has as its main objective to regulate activities aimed at strengthening academic cooperation between the *Universidade Federal de Itajubá* (UNIFEI) and the International Center for Relativistic Astrophysics (ICRANet), international organization based in Italy, in accordance with the following clauses:

Clause 1
Activities

The activities to be developed within the scope of the present cooperation Agreement will consist of joint actions including:

I – the institutional exchange of graduate and post-graduate students, researchers and faculty members;
II – the development of teaching and/or research activities, related to the areas in which UNIFEI and ICRANet act;
III – the organization of seminars, conferences, workshops or short courses in those areas;
IV – the support of technical-scientific and cultural events and activities open to the public;
V – the development of opportunities to form university teachers and researchers, by means of specialized advanced high-level courses;
VI – the organization of training and recycling courses, and the development of inter-institutional research areas associated

abertura de linhas de pesquisa interinstitucionais associadas a programas locais de pós-graduação;
VII – promoção de publicações conjuntas;
VIII – promoção de atividades de cunho social, mediante oferta de atividades de extensão;
IX – intercâmbio de informações pertinentes ao ensino e à pesquisa, em cada instituição.

to local graduate programs;
VII – joint publications;
VIII – public conferences and other actions aiming at the popularization of science;
IX – exchange of information concerning teaching and research activities in each institution.

Cláusula 2
Dos Termos Aditivos

A implementação das atividades abrangidas será determinada em Termos Aditivos ao presente instrumento, a serem firmados pelas partes, na medida em que sejam identificados projetos, linhas de pesquisa ou extensão e outras atividades de mútuo interesse.
Nos Termos Aditivos deverão constar: projeto de pesquisa com plano de trabalho e cronograma, recursos humanos e materiais envolvidos, coordenadores responsáveis pelo acompanhamento das atividades.

Clause 2
Addenda

The implementation of the activities envisaged by the contracting parties will be specified by means of Additional Terms to the present cooperation agreement. These will be signed by the contracting parties at the time of defining common projects, areas of research or education, or any other activities of mutual interest.
The Addenda must include: a research project with time schedule, human and material resources and individuals responsible for the planned activities.

Cláusula 3
Dos Compromissos

As Instituições deverão adotar, como princípio geral, dentro de suas possibilidades orçamentárias, o financiamento das ações acadêmicas derivadas deste convênio. A parte que envia docentes/ técnicos poderá cobrir os custos de transporte. A parte que recebe poderá cobrir os gastos de estadia. Os docentes deverão buscar financiamento junto às agências de fomento, instituições nacionais e/ou internacionais

Parágrafo único: É da responsabilidade dos estudantes, do pessoal técnico-administrativo, dos professores e dos pesquisadores, exercendo atividades de intercâmbio, obter seguro saúde válido para o período das atividades previstas neste convênio.

Clause 3
Commitments

Both Institutions must adopt, as a general principle and to the extent of their budgetary possibilities, the financing of academic actions carried out by this agreement. The party which sends professors/technicians may cover transport expenses. The party which receives may cover living expenses. To finance such expenses, participants must apply to granting agencies and other national or international institutions.

Sole paragraph: It is responsibility of the students, the technical and administrative staff, the professors and the researchers, involved in exchange activities to obtain health insurance valid for the period of their activities.

Cláusula 4
Dos Produtos Acadêmicos

Quando da execução das atividades decorrentes do presente instrumento de cooperação resultarem produtos, processos ou conexos, aperfeiçoamentos ou inovações passíveis de privilégio, de acordo com a legislação que regule uma ou ambas as partes, estas estabelecerão, em instrumento próprio, as condições que regularão os direitos de propriedade que serão requeridos na forma da lei pelas duas partes, conjuntamente, na proporção de sua contribuição para sua consecução.

Clause 4
Academic Products

When activities originating from the present instrument of cooperation result in products, improvements or innovations subject to rights, both parties will establish, according to proper regulatory legislation and by means of specific instruments, the conditions that will regulate property rights, in accordance with the law and proportionately to the contribution of each institution.

Cláusula 5
Executores

As atividades realizadas na esfera deste Convênio de Cooperação serão executadas pelos componentes organizacionais de ambas as partes a serem designados, conforme a natureza das ações a se desenvolverem em cada caso, podendo contar com o apoio de outros organismos externos.
Um Comitê Operacional Permanente composto por dois membros de cada uma das instituições signatárias será nomeado no Primeiro Termo Aditivo do presente acordo. O Comitê se reunirá pelo menos uma vez ao ano para traçar planos de eventos em conjunto. A reunião pode ocorrer por meios eletrônicos (tais como video conferência).

Clause 5
Executors

The activities developed within the scope of this Cooperation Agreement will be carried out by members of both parties, appointed by each institution, according to the nature of the activities in each case, the parties being allowed to rely upon the support of external organizations.
An operational Standing Committee composed by two members of each of the signing Institutions will be nominated in the First Addendum of this Agreement. The Committee will meet at least once a year to draw plans for the joint events. The meeting can occur by electronic means (such as video conference).

Cláusula 6
Do Prazo

O presente instrumento terá validade de 5 (cinco) anos, a partir da data de sua assinatura.

Clause 6
Duration

The present instrument will be valid for 5 (five) years, starting from the date of its signature.

Cláusula 7
Da Denúncia

Este instrumento de cooperação poderá

Clause 7
Cancellation

This present cooperation Agreement may

ser denunciado por qualquer uma das partes, mediante notificação apresentada com antecedência mínima de 60 (sessenta dias) – que será dispensada, havendo consenso entre ambas, devendo-se ponderar sobre a salvaguarda de atividades que por ventura estiverem em andamento.

Parágrafo Único: Este instrumento tornar-se-á, automaticamente, extinto na hipótese de se darem quaisquer circunstâncias impedidoras de sua validade previstas em legislação que regule uma ou ambas as partes.

be canceled by any of the parties, by means of notification at least 60 (sixty) days in advance – which may be waived if both parties come to a consensual agreement – being advisable, however, to see that ongoing activities are maintained.

Sole paragraph: This instrument will be automatically extinguished if any circumstances foreseen in legislations ruling either one or both parties prevent the observance of its validity.

Cláusula 8
Do Foro

Fica eleito o foro da Justiça Federal, Seção Judiciária de Minas Gerais, Subseção de Pouso Alegre, para dirimir as questões decorrentes da execução deste convênio.

Clause 8
Jurisdiction

The parties consent to the jurisdiction of an appropriate court located in the City of Pouso Alegre, MG, Brazil, for any controversy or claim arising out of this Agreement.

E, por estarem assim acordados, os representantes das partes assinam o presente instrumento, em duas vias do mesmo documento para garantir efeito jurídico.

All terms having been agreed upon, the representatives of the parties signed the present instrument, with 2 (two) copies of the same document to ensure legal effect.

Data 20 / 9 / 2013

UNIFEI

Date 20 / 9 / 2013

ICRANet

ICRANet

ACORDO DE COOPERAÇÃO

ENTRE

A UNIVERSIDADE DO ESTADO DO RIO DE JANEIRO, BRASIL

E

ICRANET

COOPERATION AGREEMENT

BETWEEN

THE UNIVERSIDADE DO ESTADO DO RIO DE JANEIRO, BRAZIL

AND

ICRANET

A **Universidade do Estado do Rio de Janeiro**, estabelecida na Rua São Francisco Xavier, 524, cidade do Rio de Janeiro, doravante denominada **UERJ**, representada por seu Magnífico Reitor, Professor Ricardo Vieiralves de Castro e a **Rede Internacional de Centros de Astrofísica Relativística (ICRANet)**, constituída e representada na forma determinada pela **Lei n. 31 de 10 de Fevereiro de 2005**, doravante denominada **ICRANet**, localizada em **Piazza della Repubblica, 10, Pescara (PE), Italia**, representada por seu Diretor, Professor Remo Ruffini, resolvem celebrar o presente Acordo de Cooperação Acadêmica tendo como finalidade regular as relações de cooperação acadêmica entre as partes, delineadas no acordo formal de estabelecimento da República Federativa do Brasil como membro do ICRANet, firmado pelo seu Presidente, Luiz Inácio Lula da Silva, em 21 de setembro de 2005,

The **Universidade do Estado do Rio de Janeiro**, located at São Francisco Xavier Street, #524, city of Rio de Janeiro, hereafter referred to as **UERJ**, represented by its Honorable President, Professor Ricardo Castro Vieiralves, and the International Center for Relativistic Astrophysics Network **(ICRANet)**, established and represented in the form determined by the **Law n. 31, February, 10, 2005**, hereafter referred to as **ICRANet**, located at **Piazza della Repubblica, 10, Pescara (PE), Italia**, represented by its Director, Professor Remo Ruffini, sign this Cooperation Agreement to regulate the activities intended to establish a closer academic cooperation between the parties, delineated with the aim of the entrance of Brazil as a member of ICRANet (formal Agreement signed by President Luiz Inácio Lula da Silva on September 21 2005, approved by the Legislative Decree n. 292 of the Brazilian National Congress (Official

aprovado pelo Decreto Legislativo do Congresso Nacional n. 292 (Diário Oficial da União n. 205, página 3, de 24 de outubro de 2007) e finalizado pela Presidente Dilma Rousseff em 12 de agosto de 2011, obedecendo às seguintes cláusulas:

Gazette of Union n. 205, page 3 of October 24, 2007) and finalized by President Dilma Rousseff in August 12, 2011) in accordance with the following clauses:

Cláusula 1
Das Atividades

As atividades a serem desenvolvidas no âmbito do presente acordo de cooperação consistirão de ações conjuntas envolvendo:

I – intercâmbio institucional de docentes, discentes de graduação e de pós-graduação;
II - desenvolvimento de atividades de ensino e/ou pesquisa, relacionadas às áreas de atuação da **UERJ** e da **ICRANet**;
III – organização de simpósios, conferências, cursos de curta duração em áreas de pesquisa;
IV – promoção de atividades e eventos técnico-científicos e culturais abertos à população em geral;
V – oferta de oportunidade de formação de docentes e pesquisadores, mediante criação de cursos especializados de alto nível;
VI – oferta de cursos de treinamento e reciclagem, bem como o incentivo à abertura de linhas de pesquisa interinstitucional associadas a programas locais de pós-graduação;
VII – promoção de publicações conjuntas;
VIII - intercâmbio de informações pertinentes ao ensino e à pesquisa, em cada instituição.

Clause 1
Activities

The activities to be developed within the scope of the present Cooperation Agreement will consist of joint actions involving:

I – institutional exchange between the teaching staff and students at the undergraduate and postgraduate levels;
II – development of teaching and/or research activities related to the areas of actuation of **UERJ** and of **ICRANet;**
III – organization of symposia, conferences and short-duration courses in research areas;
IV – promotion of technical, scientific and cultural activities open to the wide public;
V – provision of opportunities for training teachers and researchers by creating high-level specialized courses;
VI – provision of training and refresher courses, as well as fostering the opening of inter-institutional lines of research associated with local postgraduate programs;
VII – promotion of joint publications;
VIII – exchange of information related to the teaching and research activity at each institution.

Cláusula 2
Dos Compromissos

As Instituições deverão adotar, como princípio geral, a busca do financiamento das ações acadêmicas derivadas deste acordo junto às agências de fomento nacionais ou internacionais, anexado documento comprobatório das agências, quando houver.

Caso esteja prevista aplicação de recursos financeiros pelas partes, um plano detalhado de aplicação de recursos deverá ser obrigatoriamente anexado a este Acordo. E no caso de captação de recursos junto a agências de fomento serão elaboradas planilhas de valores que também deverão ser anexadas ao Acordo.

É da responsabilidade dos estudantes, do pessoal técnico-administrativo, dos professores e dos pesquisadores, exercendo atividades de intercâmbio, obter seguro saúde, válido para o período das atividades previstas neste acordo.

Clause 2
Commitments

The institutions, as a general principle, should seek funding for support from Brazilian and international agencies for academic actions arising from this agreement.

When the parties apply for financial resources, a detailed document must be attached to this Agreement. In case of receiving financial resources from governmental funding agencies, budget tables must be prepared and attached to this Agreement.

It is responsibility of the students, the technical and administrative staff, the professors and the researchers, involved in exchange activities, to obtain health insurance, valid for the period of their activities.

Cláusula 3
Dos Produtos Acadêmicos

Quando da execução das atividades decorrentes do presente instrumento de cooperação resultarem produtos, processos ou conexos, aperfeiçoamentos ou inovações passíveis de privilégio, de acordo com a legislação que regule uma ou ambas as Partes, estas estabelecerão, em instrumento próprio, as condições que regularão os direitos de propriedade que serão requeridos na forma da lei pelas duas Partes, conjuntamente, na proporção de sua contribuição para sua consecução.

Clause 3
Academic Products

When the activities arising from the performance of the present instrument result in products, processes or the like, improvements or innovations that are eligible for privilege, according to the legislation that regulates one or both parties, they shall establish in a separate instrument the conditions that will regulate the property rights, the parties will apply for in the legally stipulated form, to be shared jointly in proportion to the contribution of each in the achievement.

ICRANet

Cláusula 4
Executores

As atividades realizadas na esfera deste Acordo de Cooperação serão executadas pelos componentes organizacionais de ambas as partes, a serem designados conforme a natureza das ações a se desenvolverem em cada caso, podendo contar com o apoio de outros organismos externos.

Clause 4
Executors

The activities to be accomplished within the scope of this Cooperation Agreement will be carried out by organizational members of both parties, appointed by each institution according to the nature of the activities to be developed in each case, and can call on outside entities as well.

Cláusula 5
Da vigência

Este acordo entra em vigor a partir da última data de assinatura caso as datas sejam diferentes nos dois países, permanecendo em vigor até que uma das instituições signatárias denuncie sua vigência no mínimo seis meses antes da data de sua efetiva rescisão, limitada a sessenta meses de acordo com o art. 57. II da Lei 8.666/93.

Parágrafo Único: Em caráter excepcional, devidamente justificado e mediante autorização da autoridade superior, o prazo de que trata esta cláusula poderá ser prorrogada por até doze meses.

Clause 5
Validity

This agreement shall enter into force from the date of last signature, if the dates are different in the two countries, and remains in effect until one of the signatory institutions withdraws its validity at least six months before the effective date of its termination, limited to sixty months according to art. 57. II of Law 8.666/93.

Sole Paragraph: In exceptional cases, duly justified and subject to approval of the higher authority, the time limit referred to in this article may be extended for up to twelve months.

Cláusula 6
Da Denúncia

Este Acordo permanecerá com vigor até que uma das instituições signatárias denuncie sua vigência no mínimo seis meses antes da data de sua efetiva rescisão. Em nenhum caso essa denúncia afetará as atividades que se encontrem em andamento antes da data efetiva de rescisão.

Clause 6
Cancellation

This Agreement will remain effective until one of the signatory institutions withdraws its validity at least six months before the date of termination. In no case this termination affects the ongoing activities before the effective date of termination.

Parágrafo Único: Este instrumento tornar-se-á, automaticamente, extinto na hipótese de se darem quaisquer circunstâncias impedidoras de sua validade previstas em legislação que regule uma ou ambas as partes.

Sole Paragraph: This instrument will be automatically extinguished if any circumstances foreseen in legislations ruling either one or both parties prevent the observance of its validity.

Cláusula 7
Revisão do Acordo

Para modificar o presente Acordo será firmado um Termo Aditivo por ambas as partes.

Clause 7
Review

To amend this Agreement, an Addendum will be signed by both parties.

Cláusula 8
Foro

Para dirimir as controvérsias resultantes deste Acordo e que não tenham podido ser resolvidas por negociações amigáveis, fica eleito o foro da Comarca do Rio de Janeiro, nos termos da legislação dos países dos convenentes.

Clause 8
Forum

To settle any disputes arising under this Agreement and which could not be resolved by friendly negotiations, the court of the District of Rio de Janeiro is elected under the laws of the countries of the agreeing parties.

Cláusula 9
Da Publicação

A UERJ providenciará a publicação resumida do respectivo instrumento no Diário Oficial do Estado do Rio de Janeiro até o 5º (quinto) dia útil do mês seguinte ao de sua assinatura, para ocorrer no prazo de vinte dias daquela data, qualquer que seja o seu valor, ainda que sem ônus, nos termos da legislação brasileira.

Clause 9
Ratification

UERJ shall provide a short publication of the instrument in the *Diário Oficial do Estado do Rio de Janeiro* [Official Gazette of the State of Rio de Janeiro] until the 5th (fifth) business day of the month following its signature, to occur within twenty days of that date, whatever its value, albeit without charge, under the Brazilian law.

ICRANet

Cláusula 10
Da Auditoria

O presente instrumento ficará arquivado na UERJ, à disposição das equipes de inspeção do Tribunal de Contas do Estado do Rio de Janeiro, como determina o Artigo 1º, parágrafo 2º da Deliberação nº 191, de 11 de julho de 1995.

Clause 10
Auditing

The present Agreement will be filed at UERJ, at the disposal of inspection teams from the State Audit Court of Rio de Janeiro, as determined by Article 1, §2, of Deliberation #191, of July 11th, 1995.

Cláusula 11
Da Homologação

Este instrumento de cooperação deverá ser submetido à homologação do Conselho de Curadores da UERJ, nos termos do Artigo 3º - inciso VI do Provimento nº 3, de 24 de julho de 1992.

Clause 11
Jurisdiction

This cooperation instrument shall be submitted to the approval of the Board of Trustees of UERJ, under the terms of Article 3, subparagraph VI, of Provision #3, of July 24th, 1992.

E, por estarem assim acordados, os representantes das partes assinam o presente instrumento, em duas vias de igual teor e forma

All terms having been agreed upon, the representatives of the parties signed the present instrument, with 2 (two) copies of the same document to ensure legal effect.

Data 29 / 05 / 2014

Reitor da UERJ:

Professor Ricardo Vieiralves de Castro

Testemunha: Regina Lúcia Monteiro Henriques
Sub-Reitoria Extensão e Cultura
Matr. 5802-4 / ID. 0002554466

Nome: Cristina Russi G. Furtado
Cargo: Diretora DCI / SR2 / UERJ
Matr. 33264-3

Date 29 / 05 / 2014

Diretor do ICRANet:

Professor Remo Ruffini

Witness:
Name: MANUEL MALHEIRO
Post: PROFESSOR ASSOCIADO DO ITA

Procuradoria Geral da UERJ

Cooperation agreement between The Brazilian Federal Agency for Support and Evaluation of Graduate Education (CAPES) and the International Center for Relativistic Astrophysics Network (ICRANet) referring to full doctorate program, visitors program, sabbatical program, and post-doctoral internships, aiming at cientific cooperation in relativistic astrophysics and cosmology.

The **Brazilian Federal Agency for Support and Evaluation of Graduate Education**, hereinafter referred to as "CAPES", a Federal Public Foundation, set by law n. 8.405 of January 9th 1992, thereafter modified by law n. 11.502 of July 11th 2007 and ruled by the Statute approved by Decree n. 7.692/2012, registered in CNPJ n. 00.889.834/0001-08, located at SBN Quadra 02 Bloco L Lote 6, 2° Andar , 70040-020, Brasilia - DF, herein represented by its President, Jorge Almeida Guimarães, RG 5579770-2 issued by SSP/SP and CPF in the 048563847-91, resident and domiciled in Distrito Federal;

The International Center for Relativistic Astrophysics Network (ICRANet), international organization that dedicates itself to educational activities and cientific research, set by the Statute signed on March 19th 2003, and approved by the Italian Parliament on February 10th 2005, published in the Gazetta Ufficiale n. 53, on March 5th 2005, located in the Piazza della Repubblica, 10, Pescara, Italy, represented by REMO RUFFINI, passport number YA4230027, Director General of ICRANet, according to the ordinance of September 12th 2005, who is dully authorized to perform the activities described in this agreement.

Taking into account the agreement between CAPES and ICRANet;

Keeping the spirit of the CAPES-ICRANet program, based on cientific cooperation in relativistic astrophysics, CAPES and ICRANet agree on adopting further provisions to promote the exchange of students, researchers, and professors, as well as to develop educational activities and research related to astrophysics.

The Parties agree to establish, by mutual agreement and in order to be mutually beneficial, this document:

ARTICLE 1: OBJECT

This agreement has as its main objective to implement the ICRANet program, referred to as "CAPES-ICRANet" in this agreement, with respect to the coordination, inclusion, and formation of students and researches in the research centers associated to ICRANet.

The present agreement refers to the senior cientific researchers of Asian and European ICRANet centers, which will visit Brazilian universities and research centers; Brazilian students aiming at doing their full doctorate abroad, and professors. The visit of Brazilian scholars to ICRANet research centers (post-doctorate) is also encompassed by this agreement.

The present agreement establishes the following programs:

a) IRAP PhD CAPES-ICRANet Program,
   (i) each year five fellowships for Brazilian students will be granted. Each fellowship will last for three years with the final PhD degree jointly delivered by the academic institutions participating in the program.

b) CAPES-ICRANet Visitors Program,
   (i) a visitor program for senior scientists from ICRANet centers in Asia, Europe, and the United States to Brazilian universities and research centers. This program is specially directed to senior scientists who have given fundamental worldwide recognized contributions to the field of relativistic astrophysics and cosmology. During their stay in Brazil, scientists will visit universities and research centers associated with ICRANET. Each visitor can spend up to three years in Brazil and each year up to three months. Five positions will be available each year and the applications are opened during the entire year.

c) CAPES-ICRANet Sabbatical Program:
   (i) a program to promote sabbatical periods in ICRANet centers for university professors and research scientists from Brazil has been established. During their stay in the ICRANet centers, the scientists will be able to visit the universities and research centers associated to the IRAP PhD Program. Sabbatical addressing both theoretical research and observational activities in ICRANet related centers are welcome. Particularly encouraged are research activities synergic with the IRAP PhD Program through the interaction with IRAP graduate students and Faculty Professors. Each year five positions are established, each one of the duration of one year.

d) CAPES-ICRANet Postdoctoral Program:
   (ii) up to nine two-year postdoctoral positions will be opened every year. The winners will perform the research in any of the ICRANet seats and in institutions with signed collaboration agreements with ICRANet and/or associated scientists to ICRANet.

ARTIGO 2: OBLIGATIONS OF THE PARTIES

In order to safeguard the implementation of the CAPES-ICRANet cooperation agreement, the parties agree to fulfil the following obligations:

I OBLIGATIONS OF CAPES:

a) Publicize CAPES-ICRANet in Brazil;

b) Select the elegible candidates;

c) Allocate financial resources to pay:

(i) monthly stipend;

(ii) health insurance;

(iii) settling-in allowance;

(iv) travel allowance or the acquisition of a roundtrip plane ticket;

(v) Operating expenses allowance, exclusively provided to PhD students and paid directly to the recipient of the fellowship.

II ICRANet OBLIGATIONS:

a) Publicize CAPES-ICRANet;

b) To all Brazilians that have been granted CAPES-ICRANet fellowships:

i) Waive of entrance fees;

ii) Grant access to laboratories and other facilities of ICRANet centers;

iii) Give orientation and support to fellows and researches.

ARTICLE 3: WORK PLAN

The work plan, approved by the parties before the signing of the agreement, is an integrant part of the present document. The parties agree to strictly follow the schedule laid down in the work plan. Any change in the work plan must be approved by the parties beforehand. The first work plan can be

found in Annex n. 1.

ARTICLE 4: STEERING COMMITTEE

The steering committee is constituted by 4 (four) members: two representatives of ICRANet and two representatives of CAPES. The committee will guarantee the fulfillment of the obligations of the parties and it will meet at least once a year in the most suitable manner, which may include technical visits.

ARTICLE 5: VALIDITY

This agreement shall come into force from the date of signature and it will be effective for five years. The agreement can be automatically renewed for another five-year term, provided that the parties agree on the renewal before the agreement expires.

ARTICLE 6: TERMINATION

This agreement may be terminated by any of the parties, provided that one party formally notifies the other via registered letter at least 60 (sixty) days before the termination is to come into effect. The termination of the agreement shall not affect projects and scholarships already implemented or other obligations taken during the term of the agreement.

ARTICLE 7: FORCE MAJEURE

The parties shall not be responsible for the partial or total non-fulfillment of commitments in case of force majeure.

ARTICLE 8: FINAL PROVISIONS

Issues not explicitly covered in the text of this agreement shall be amicably solved by the parties.

The following attachments are an integrant part of this agreement:

Annex 1 – Work Plan

Annex 2 – Financial detailing of the CAPES-ICRANet cooperation program

Annex 3 - List of research centers that are part of ICRANet.

Executed by the parties on August 27th of 2013, written in Portuguese and English, in two original copies, and duly signed on behalf of the two Parties, in Brasilia, on the August 27th of 2013

Jorge Almeida Guimarães

President of CAPES, designated by ministerial decree n. 122 of the Interior Ministry, published in the DOU on February 9th 2004

Remo Ruffini

General Director of the International Center for Relativistic Astrophysics Network - ICRANet

Witnesses:

_____

_____

ANNEX I

CAPES-ICRANet Work Plan 2013

I – OBJECT

The goal of this agreement is to strenghten the existing cooperation program between CAPES and ICRANet, referred to in this document as "CAPES-ICRANet", with respect to coordination, inclusion, and formation of students and researchers in the research centers associated with ICRANet, which are indicated in the Annex n. 3.

The present agreement refers to senior research cientists of ICRANet in Asia and Europe, which will visit Brazilian universities and research centers; Brazilian students aiming at doing their PhD abroad and university professors; and the visit of Brazilian researchers in ICRANet research centers (post doctorate).

II – OBJECTIVES

This agreement aims at fostering research on relativistic astrophysics and cosmology between Brazil and the academic centers in Member States of ICRANet. Up to 24 fellowships will be granted in the 2013 calendar year.

III SCHEDULE OF EXECUTION OF THE WORK PLAN

CAPES-ICRANet	
Activities	*Deadlines*
Selection of students and researches to take part in the program.	Applications are due the entire year in the website of ICRANet. The link shall be broadly publicized in the website of CAPES.
Notification to CAPES concerning the fellows and researchers, which have their projects recommended.	During the entire calendar year.
Implementation of fellowships by CAPES.	Up to 60 days after the notification of the approval.

V – VALIDITY AND TERMINATION

Start	***End***
Date of signature of the agreement.	Five years after the signature of the agreement, which can be renewed for another five-year term.

ANNEX II

FINANCIAL DETAILING[1]

	Programa CAPES-ICRANet										
		Places per year	Duration (years)	Months	Health insurance	Settling-in allowance	Travel allowance	Operating expenses	Monthly Stipend	Subtotal/ year	Total cost per student
1	Full doctorate	5	3	12	€ 1.080,00	€ 1.300,00	€ 2.606,18	€ 189,33	€ 1.300,00	€ 19.586,18	€ 57.762,06
2	Visitors from Europe to Brazil[2]	5	3	1 a 3	X	X	€ 3.055,30	X	€ 4.749,47	€ 17.303,71	€ 42.814,24
3	Senior Internship from Brazil to ICRANet Asia and Europe	5	1	1 a 5	€ 450,00	€ 2.300,00	€ 2.606,18	X	€ 2.300,00	€ 16.856,18	€ 16.856,18
4	Post doctorate form Europe to Brazil	5	2	12 a 24	X	X	€ 2.606,18	X	€ 2.412,13	€ 31.551,74	€ 55.618,10
5	Post doctorate from Brazil to Europe	4	2	12 a 24	€ 1.080,00	€ 2.100,00	€ 2.606,18	X	€ 2.100,00	€ 30.986,18	€ 57.266,18

Acccording to the chart above, the total cost of the Program is € 1.094.317,62, for up to 24 students

[1] The values have been converted to euros in order to allow a total sum .

[2] Modalities 2 and 4 will be paid in Brazilian reais according to the exchange rate of the day the money is transferred.

ANNEX III

LIST OF RESEARCH CENTERS THAT ARE PART OF ICRANET.

The following scientific institutions participate in CAPES-INCRANet cooperation program:

1. **Pescara Coordinating Center: I.C.R.A. Network Coordinating Center**
2. **ICRANet Rome**
3. **Villa Ratti, Nice**
4. **ICRANet Brazil: Urca, Rio de Janeiro**
5. **ICRANet Armenia**