Enclosure 1

Statute of ICRANet and Pescara Headquarters

SERIE GENERALE

Spediz. abb. post. 45% - art. 2, comma 20/b
Legge 23-12-1996, n. 662 - Filiale di Roma

Anno 146° — Numero 53

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DELLA REPUBBLICA ITALIANA

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LEGGI ED ALTRI ATTI NORMATIVI

LEGGE 10 febbraio 2005, n. **31.**

Ratifica ed esecuzione dell'Accordo istitutivo del Network internazionale di Centri per l'astrofisica relativistica ICRANET in Pescara, con annesso statuto, fatto a Roma il 19 marzo 2003.

La Camera dei deputati ed il Senato della Repubblica hanno approvato;

IL PRESIDENTE DELLA REPUBBLICA

PROMULGA

la seguente legge:

Art. 1.

Autorizzazione alla ratifica

1. Il Presidente della Repubblica è autorizzato a ratificare l'Accordo istitutivo del Network internazionale di Centri per l'astrofisica relativistica ICRANET in Pescara, con annesso statuto, fatto a Roma il 19 marzo 2003.

Art. 2.

Ordine di esecuzione

1. Piena ed intera esecuzione è data all'Accordo di cui all'articolo 1 a decorrere dalla data della sua entrata in vigore, in conformità a quanto disposto dall'articolo IV dell'Accordo stesso.

Art. 3.

Copertura finanziaria

1. All'onere derivante dall'attuazione della presente legge, valutato in euro 1.550.330 annui a decorrere dal 2004, si provvede mediante corrispondente riduzione dello stanziamento iscritto, ai fini del bilancio triennale 2004-2006, nell'ambito dell'unità previsionale di base di parte corrente «Fondo speciale» dello stato di previsione del Ministero dell'economia e delle finanze per l'anno 2004, allo scopo parzialmente utilizzando l'accantonamento relativo al Ministero degli affari esteri.

2. Il Ministro dell'economia e delle finanze provvede al monitoraggio dell'attuazione del presente articolo, anche ai fini dell'applicazione dell'articolo 11-*ter*, comma 7, della legge 5 agosto 1978, n. 468, e successive modificazioni, e trasmette alle Camere, corredati da apposite relazioni, gli eventuali decreti emanati ai sensi dell'articolo 7, secondo comma, numero 2), della legge n. 468 del 1978.

3. Il Ministro dell'economia e delle finanze è autorizzato ad apportare, con propri decreti, le occorrenti variazioni di bilancio.

Art. 4.

Entrata in vigore

1. La presente legge entra in vigore il giorno successivo a quello della sua pubblicazione nella *Gazzetta Ufficiale*.

La presente legge, munita del sigillo dello Stato, sarà inserita nella Raccolta ufficiale degli atti normativi della Repubblica italiana. È fatto obbligo a chiunque spetti di osservarla e di farla osservare come legge dello Stato.

Data a Roma, addì 10 febbraio 2005

CIAMPI

BERLUSCONI, *Presidente del Consiglio dei Ministri*

FINI, *Ministro degli affari esteri*

Visto, *il Guardasigilli:* CASTELLI

Accordo Istitutivo del Network Internazionale di Centri per l'Astrofisica Relativistica ICRANET in Pescara, Italia

Preambolo

Consapevoli dell'importanza delle ricerche nell'astrofisica relativistica per la comprensione della vita e della evoluzione delle stelle e per la struttura del nostro universo così come per la identificazione delle leggi fondamentali della natura;

Consapevoli che le ricerche in questo campo sono basate necessariamente sulla collaborazione internazionale;

Riconoscendo che lo studio di oggetti celesti ed astrofisici ha delle radici profonde in molte culture;

Considerando il grande interesse popolare in tutte le nazioni per la scoperta di oggetti celesti come le *pulsars*, i *quasars*, i buchi neri;

Sottolineando l'importanza per lo sviluppo di molte tecnologie e tecniche usate e connesse con le ricerche in astrofisica relativistica quali le tecnologie ottiche, radio, spaziali e di telecomunicazione;

Premesso che le parti al presente Accordo desiderano istituire un Network internazionale di Centri per l'astrofisica relativistica, nel seguito indicato con il nome di ICRANET, quale organizzazione internazionale indipendente, dotata di propria gestione, di uno *status* internazionale, nonché di poteri, privilegi, immunità appropriati, come pure di altre condizioni necessarie al suo efficace funzionamento, perché possa conseguire i suoi obiettivi;

Considerando che il Governo italiano è disposto ad iniziare la negoziazione di un Accordo di sede per l'ICRANET;

Le Parti firmatarie hanno concordato quanto segue:

Art. I.

Istituzione

Con il presente strumento si istituisce una Organizzazione internazionale indipendente denominata ICRANET la quale agirà in conformità con lo Statuto allegato al presente Accordo, che è parte integrante di esso e che potrà essere, qualora necessario, emendato in conformità con l'art. 16 dello stesso.

Art. II.

Firma, ratifica, accettazione, approvazione, adesione

Il presente Accordo sarà aperto alla firma degli Stati e delle Organizzazioni internazionali presso il Governo della Repubblica italiana. Esso rimarrà aperto alla firma per un periodo di due anni dal 2003, a meno che tale periodo non venga prorogato dal Depositario prima della sua scadenza, su richiesta del Comitato di Direzione dell'ICRANET;

il Governo della Repubblica italiana sarà Depositario del presente Accordo;

i firmatari si impegnano ad essere vincolati dal presente Accordo in conformità con le proprie leggi, regolamenti e procedure;

il consenso di uno Stato o di una Organizzazione internazionale ad essere vincolato dal presente Accordo non costituirà alcun obbligo a fornire un supporto finanziario all'ICRANET; quest'ultimo potrà ricevere contributi volontari dagli Stati o dalle Organizzazioni internazionali;

successivamente alla scadenza del periodo specificato al comma 1, il presente Accordo rimarrà aperto all'adesione di ogni Stato e di ogni Organizzazione internazionale, subordinatamente all'approvazione del Comitato di Direzione dell'ICRANET a maggioranza semplice;

il relativo strumento di adesione sarà depositato presso il Governo della Repubblica italiana.

Art. III.

Parti contraenti

Una volta costituita l'ICRANET potranno associarsi ad essa Università e Centri di Ricerca.

Art. IV.

Entrata in vigore

Il presente Accordo e lo Statuto allegato entreranno in vigore alla data in cui sarà depositato il terzo strumento di ratifica o di accettazione formale da parte di uno Stato o di una Organizzazione internazionale;

per ciascuno Stato o Organizzazione internazionale che depositerà lo strumento di adesione o di accettazione formale dopo l'entrata in vigore del presente Accordo, il presente Accordo entrerà in vigore alla data del suddetto deposito.

Art. V.

Durata

Qualsiasi parte contraente può denunciare il presente Accordo mediante atto scritto inviato al Depositario. Tale denuncia diverrà effettiva tre mesi dopo la data in cui tale strumento è stato ricevuto.

Art. VI.

Soluzione delle controversie

Ogni controversia tra le Parti relativa alla interpretazione o alla attuazione del presente Accordo, sarà risolta per via diplomatica.

Art. VII.

Testo autentico

Il testo autentico del presente Accordo, compreso lo Statuto in allegato, è in lingua italiana ed inglese.

In fede di che i sottoscritti Plenipotenziari, a tal fine debitamente autorizzati dai loro rispettivi Governi o Organizzazioni internazionali, hanno firmato il presente Accordo in un unico originale in lingua italiana e inglese, facendo i testi egualmente fede.

Fatto a Roma il 19 marzo 2003
Per la Santa Sede

Fatto a Roma il 19 marzo 2003
Per il Governo della Repubblica italiana

Fatto a Roma il 12 giugno 2003
Per la Repubblica d'Armenia

STATUTO ICRANET

Art. 1.

Status

L'ICRANET, quale Organizzazione internazionale, svolge esclusivamente attività di ricerca scientifica e di formazione;

l'ICRANET ha *status* internazionale e gode di quelle capacità giuridiche che potranno essere necessarie per l'esercizio delle sue funzioni ed il conseguimento dei suoi scopi.

Art. 2.

Sede

La sede dell'ICRANET è ubicata in Italia a Pescara. L'ICRANET può aprire Centri di ricerca in altri Paesi, qualora ciò sia necessario per il conseguimento dei suoi scopi, definiti nel successivo art. 3.

Art. 3.

Scopi ed attività

L'ICRANET promuove la cooperazione scientifica internazionale ed effettua ricerche nell'astrofisica relativistica. Coordina anche ricerche internazionali teoriche, sperimentali ed osservative facendo uso di strumentazioni nello spazio, sulla terra e sotterranee.

Le sue attività consistono in:

a) sviluppo della ricerca scientifica;

b) insegnamenti a livello di dottorato di ricerca e postdottorale;

c) programmi di formazione scientifica sia a breve che a lungo periodo;

d) organizzazione di seminari e convegni internazionali;

e) sviluppo di programmi di scambio fra scienziati e personale associato;

f) sviluppo di nuovi livelli di comunicazione elettronica fra i centri di ricerca;

g) creazione di banche dati integrate per tutti gli oggetti celesti in tutte le possibili lunghezze d'onda;

h) sviluppo di nuove tecniche di comunicazione;

i) cooperazione e partecipazione in organizzazioni scientifiche internazionali;

j) cooperazione scientifica e trasferimento tecnologico verso le industrie;

k) ogni altra attività connessa agli scopi istituzionali.

Le aree scientifiche di attività includono la cosmologia, l'astrofisica delle alte energie, la fisica teorica e la fisica matematica;

l'ICRANET svolge attività di coordinamento con le università ed i Centri di ricerca internazionali associati al Network che operano in varie aree geografiche. Tale collaborazione consentirà di attuare i progetti di ricerca e di formazione per i giovani ricercatori. In particolare ciascun Centro mette a disposizione dei ricercatori le attrezzature già disponibili nelle rispettive sedi. Queste attrezzature sono spesso di notevole valore economico e scientifico e sono indispensabili per il raggiungimento degli obiettivi dei programmi di ricerca dell'ICRANET;

l'ICRANET incoraggia la mobilità degli scienziati fra i Centri con l'intesa che ciascun Centro coprirà le spese di viaggio dei propri ricercatori mentre le spese locali saranno coperte dalla istituzione ospitante;

l'ICRANET attribuisce borse di studio per giovani scienziati sia a livello pre-dottorato di ricerca che postdottorale nell'ambito di speciali programmi di insegnamento;

l'ICRANET mette a disposizione delle istituzioni scientifiche e degli Stati membri che desiderino cooperare nel settore della astrofisica relativistica, le proprie competenze.

Art. 4.

Organizzazione

La struttura organizzativa dell'ICRANET consiste di:

a) un Comitato di direzione;

b) un direttore;

c) un Comitato scientifico.

Art. 5.

Comitato di direzione

Il Comitato di direzione è composto dai seguenti membri:

a) un rappresentante per ogni Stato ed ogni Organizzazione internazionale membro dell'ICRANET;

b) un rappresentante aggiunto per ogni altro Stato o Organizzazione internazionale che contribuisca finanziariamente alle attività dell'ICRANET;

c) un rappresentante per ogni Università e per ogni Centro di ricerca associato all'ICRANET;

d) un rappresentante per ogni altra istituzione che contribuisca alle attività dell'ICRANET accettata su decisione del Comitato di direzione;

e) un rappresentante del Ministero dell'economia e delle finanze del Governo italiano ed un rappresentante del sindaco di Pescara, tenuto conto del contributo nazionale e dell'apporto relativo al costituendo accordo di sede. In relazione alle successive adesioni all'Accordo viene prevista la partecipazione di un ulteriore rappresentante per ogni Stato od Organizzazione internazionale che contribuiscono al bilancio annuale dell'ICRANET;

f) un rappresentante per l'Università di Stanford, l'Università dell'Arizona, la Specola Vaticana e l'ICRA quali membri fondatori.

Il Comitato di direzione elegge un presidente fra i suoi membri per un periodo di tre anni, rinnovabile;

il direttore è il segretario esecutivo del Comitato di direzione;

il Comitato di direzione si riunisce in sessione ordinaria una volta l'anno; si riunisce in sessione straordinaria su richiesta del presidente, o per propria iniziativa se richiesto da almeno la metà dei suoi membri;

la maggioranza dei membri costituisce il *quorum* per la riunione del Comitato di direzione;

il Comitato di direzione adotta il proprio regolamento.

Art. 6.

Funzioni del Comitato di direzione

Le funzioni del Comitato di direzione sono:

i) eleggere il direttore dell'ICRANET;

ii) formulare, sentito il Comitato scientifico, le linee guida per le attività dell'ICRANET, tenendo conto degli obiettivi indicati nell'art. 3;

iii) esaminare:

a) il livello annuale del bilancio;

b) il livello dei rispettivi contributi;

c) i piani finanziari;

d) l'uso dei fondi disponibili per l'operatività dell'ICRANET;

iv) considerare le proposte del direttore per i programmi, i piani di lavoro, i piani finanziari, le proposte per il bilancio ed il personale dell'ICRANET e prendere le decisioni conseguenti;

v) adottare, previa approvazione dei rispettivi contribuenti, gli aumenti di bilancio a loro carico, basati sulle necessità delle attività scientifiche dell'ICRANET;

vi) considerare il rapporto annuale ed altri rapporti del direttore sulle attività dell'ICRANET;

vii) nominare un revisore dei conti esterno ed approvare il piano annuale di revisione dei conti;

viii) redigere ed approvare il regolamento del personale in linea con quanto previsto da altri organismi nell'ambito del sistema delle Nazioni Unite.

Art. 7.

Votazioni del Comitato di direzione

Le votazioni del Comitato di direzione sono regolate come segue:

i) ciascun membro del Comitato di direzione esprime un voto;

ii) le decisioni del Comitato di direzione sono adottate dalla maggioranza dei membri presenti e votanti, salvo quanto specificato nel presente Statuto all'art. 8.

Art. 8.

Nomina del direttore

La nomina del direttore per un periodo che non eccede cinque anni, rinnovabile, viene decisa da una maggioranza di due terzi dei componenti del Comitato di direzione. In caso di mancato raggiungimento del *quorum*, nel corso di due adunanze successive, la decisione viene adottata a maggioranza dei presenti. Per il primo periodo di cinque anni il presidente dell'ICRANET sarà il direttore.

Art. 9.

Funzioni e poteri del direttore

Il direttore è il capo accademico ed amministrativo dell'ICRANET. In tali capacità il direttore:

a) amministra l'ICRANET;

b) prepara le proposte per le attività generali ed i piani di lavoro dell'ICRANET che verranno sottoposti al Comitato di direzione per l'approvazione;

c) prepara i piani finanziari e le proposte di bilancio dell'ICRANET da sottoporre al Comitato di direzione per l'approvazione;

d) sovrintende all'attuazione dei piani di lavoro dell'ICRANET ed effettua i pagamenti secondo le linee guida generali e le decisioni specifiche adottate dal Comitato di direzione;

e) il direttore è il rappresentante legale dell'ICRANET. Egli firma tutti gli atti, i contratti, gli accordi, i trattati ed altri documenti legali necessari ai fini di una ordinaria gestione dell'ICRANET. Il Comitato può stabilire la misura in cui tali poteri possono essere delegati dal direttore. I contratti, gli accordi ed i trattati che interessano la gestione, gli obiettivi, l'ubicazione, l'ampliamento o lo scioglimento dell'ICRANET, ovvero questioni importanti relative ai rapporti con il Paese ospite, saranno sottoposti all'approvazione del Comitato di direzione.

Il direttore assume tutte le funzioni e poteri previsti dal presente Accordo, in particolare:

a) recluta ed amministra il personale necessario allo svolgimento delle attività dell'ICRANET;

b) richiede annualmente una verifica delle scritture finanziarie da parte di un revisore esterno di cui all'art. 6 *(vi)*.

Art. 10.

Il Comitato scientifico

È costituito un Comitato scientifico composto da un rappresentante per ogni Stato, Organizzazione internazionale, Università o Centro di ricerca membro dell'ICRANET;

il Comitato scientifico elegge, a maggioranza semplice, il presidente fra i suoi membri per un periodo di tre anni rinnovabile.

Art. 11.

Funzioni del Comitato scientifico

Il Comitato scientifico assiste l'ICRANET nelle attività programmate avendo la dovuta attenzione ai maggiori sviluppi accademici, scientifici, educativi e culturali nel mondo, rilevanti ai fini dei suoi obiettivi;

il Comitato scientifico assicura il coordinamento delle attività scientifiche dell'ICRANET e fa raccomandazioni al direttore sulla ulteriore crescita dell'ICRANET e su specifiche direzioni di ricerca;

il Comitato di direzione ed il direttore possono rivolgersi al Comitato scientifico per pareri;

il Comitato scientifico adotta il proprio regolamento e si riunisce di norma una volta l'anno.

Art. 12.

Segreteria

La segreteria dell'ICRANET dispone del personale necessario al suo buon funzionamento; i membri della segreteria sono reclutati dal direttore come da art. 9 (comma 2, *a*);

il criterio principale per l'assunzione del personale e per la determinazione delle condizioni di impiego è quello di garantire i massimi livelli di qualità ed efficienza;

i parametri salariali, l'assicurazione, gli schemi pensionistici ed ogni altra condizione di impiego saranno stabiliti da un apposito regolamento del personale come da art. 6 *(viii)*.

Art. 13.

Finanze

L'ICRANET è finanziato con mezzi come contributi volontari e donazioni, spese di iscrizione ai corsi ed ai seminari, proventi derivanti da programmi speciali di formazione o da attività di assistenza tecnica, redditi da pubblicazioni, interessi provenienti da Trust, dotazioni o conti bancari;

le parti del presente accordo non sono tenute a fornire all'Istituto qualsivoglia sostegno finanziario oltre ai loro contributi volontari;

le operazioni finanziarie dell'ICRANET sono regolamentate da norme finanziarie adottate dal Comitato di direzione in conformità con i principi delle Nazioni Unite;

il bilancio dell'ICRANET è approvato annualmente dal Comitato di direzione;

il Governo italiano contribuisce al bilancio dell'ICRANET nella forma seguente: con inizio dalla data di entrata in vigore del presente Accordo, il contributo finanziario per ciascun anno sarà di € 1.549.370 e potrà essere aumentato secondo le modalità previste dall'art. 6 del presente Statuto;

ogni contributo che l'ICRANET potrà ricevere da Stati, da Organizzazioni internazionali o Organizzazioni non governative, da Università e Centri di ricerca e dal pagamento di servizi resi sarà parte del bilancio;

il bilancio copre il costo del personale, i costi operativi e le spese per l'attuazione dei programmi;

la Municipalità di Pescara ha messo a disposizione per le attività dell'ICRANET una sede in Pescara.

Art. 14.

Rapporti con altre organizzazioni

Al fine di conseguire i suoi obiettivi l'ICRANET può stipulare accordi di collaborazione con organizzazioni, fondazioni ed agenzie internazionali, nazionali o regionali;

i Centri di ricerca che desiderino partecipare alle attività dell'ICRANET, previste da questo accordo, invieranno al direttore una notifica in tal senso.

Art. 15.

Diritti, privilegi ed immunità

Un accordo di sede tra il Governo della Repubblica italiana e l'ICRANET sarà stipulato al fine di definire i privilegi e le immunità dell'istituenda Organizzazione internazionale.

Art. 16.

Emendamenti

Emendamenti potranno essere apportati al presente Statuto all'unanimità dagli Stati o Organizzazioni internazionali Parti del presente Accordo. Detti emendamenti entreranno in vigore sei mesi dopo la loro approvazione.

Art. 17.

Scioglimento

L'ICRANET può essere sciolto da una maggioranza di tre quarti dei componenti del Comitato di direzione qualora sia stato accertato che gli scopi dell'ICRANET non siano stati raggiunti;

in caso di scioglimento, i beni dell'ICRANET situati nel Paese ospite o in altri Paesi saranno ceduti a tali Paesi per essere utilizzati per scopi analoghi o ceduti ad istituzioni che hanno finalità analoghe a quelle dell'ICRANET nei rispettivi Paesi, previo accordo tra il Governo di quei Paesi ed il Comitato di direzione.

Art. 18.

Norme finali

Nel caso di chiusura dell'ICRANET non vi sarà alcun costo per le Parti contraenti dell'Accordo.

LAVORI PREPARATORI

Senato della Repubblica (atto n. 2796):

Presentato dal Ministro degli affari esteri (FRATTINI) il 27 febbraio 2004;

Assegnato alla 3ª commissione (Affari esteri), in sede referente, il 25 marzo 2004 con pareri delle commissioni 1ª, 5ª, 7ª, 8ª, e 10ª;

Esaminato dalla 3ª commissione il 20 aprile 2004 e l'11 maggio 2004;

Relazione scritta annunciata il 13 maggio 2004 (atto n. 2796-A relatore sen. Provera);

Esaminato in aula ed approvato il 16 giugno 2004.

Camera dei deputati (atto n. 5070):

Assegnato alla III commissione (Affari esteri), in sede referente, il 22 giugno 2004, con pareri delle commissioni I, V, VII;

Esaminato dalla III commissione il 15 e 29 luglio 2004; il 24 settembre 2004;

Relazione scritta annunciata il 24 settembre 2004 (atto n. 5070-A relatore on. Pacini);

Esaminato in aula il 24 gennaio 2005 ed approvato il 27 gennaio 2005.

05G0050

SERIE GENERALE

Spediz. abb. post. 45% - art. 2, comma 20/b
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GAZZETTA UFFICIALE

DELLA REPUBBLICA ITALIANA

PARTE PRIMA **Roma - Venerdì, 11 marzo 2005** SI PUBBLICA TUTTI I GIORNI NON FESTIVI

DIREZIONE E REDAZIONE PRESSO IL MINISTERO DELLA GIUSTIZIA - UFFICIO PUBBLICAZIONE LEGGI E DECRETI - VIA ARENULA 70 - 00100 ROMA
AMMINISTRAZIONE PRESSO L'ISTITUTO POLIGRAFICO E ZECCA DELLO STATO - LIBRERIA DELLO STATO - PIAZZA G. VERDI 10 - 00100 ROMA - CENTRALINO 06 85081

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RETTIFICHE

AVVERTENZA. — L'**avviso di rettifica** dà notizia dell'avvenuta correzione di errori materiali contenuti nell'originale o nella copia del provvedimento inviato per la pubblicazione alla *Gazzetta Ufficiale.* L'**errata-corrige** rimedia, invece, ad errori verificatisi nella stampa del provvedimento sulla *Gazzetta Ufficiale.* I relativi comunicati sono pubblicati ai sensi dell'art. 8 del decreto del Presidente della Repubblica 28 dicembre 1985, n. 1092, e degli articoli 14, 15 e 18 del decreto del Presidente della Repubblica 14 marzo 1986, n. 217.

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Nell'Accordo Istitutivo del Network Internazionale di Centri per l'Astrofisica Relativistica ICRANET in Pescara, Italia, ratificato con la legge citata in epigrafe, pubblicato nella sopraindicata *Gazzetta Ufficiale*, alla pag. 6, seconda colonna, all'art. 8 (Nomina del direttore), al penultimo e ultimo rigo, dove è scritto: «... adottata a maggioranza dei presenti. Per il primo periodo di cinque anni il presidente dell'*ICRANET* sarà il direttore.», leggasi: «... adottata a maggioranza *semplice* dei presenti. Per il primo periodo di cinque anni il presidente dell'*ICRA* sarà il direttore.».

05A02364

AUGUSTA IANNINI, *direttore* FRANCESCO NOCITA, *redattore*

(G501058/1) Roma, 2005 - Istituto Poligrafico e Zecca dello Stato S.p.A. - S.

SERIE GENERALE

Spediz. abb. post. 45% - art. 2, comma 20/b Legge 23-12-1996, n. 662 - Filiale di Roma

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DELLA REPUBBLICA ITALIANA

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4ª Serie speciale: *Concorsi ed esami (pubblicata il martedì e il venerdì)*
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La **Gazzetta Ufficiale, Parte Seconda,** "Foglio delle inserzioni", *è pubblicata il martedì, il giovedì e il sabato*

AVVISO ALLE AMMINISTRAZIONI

Al fine di ottimizzare la procedura per l'inserimento degli atti nella *Gazzetta Ufficiale* telematica, le Amministrazioni sono pregate di inviare, contemporaneamente e parallelamente alla trasmissione su carta, come da norma, anche copia telematica dei medesimi (in formato word) al seguente indirizzo di posta elettronica: gazzettaufficiale@giustizia.it, curando che nella nota cartacea di trasmissione siano chiaramente riportati gli estremi dell'invio telematico (mittente, oggetto e data).

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Ratifica ed esecuzione dell'Accordo di sede tra il Governo della Repubblica italiana e il Network internazionale di centri per l'astrofisica relativistica in Pescara - ICRANET, fatto a Roma il 14 gennaio 2008. *(10G0106)* . . . . . *Pag.* 1

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PROVVEDIMENTO 18 maggio 2010.

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LEGGI ED ALTRI ATTI NORMATIVI

LEGGE 13 maggio 2010, n. **83.**

Ratifica ed esecuzione dell'Accordo di sede tra il Governo della Repubblica italiana e il Network internazionale di centri per l'astrofisica relativistica in Pescara - ICRANET, fatto a Roma il 14 gennaio 2008.

La Camera dei deputati ed il Senato della Repubblica hanno approvato;

IL PRESIDENTE DELLA REPUBBLICA

PROMULGA

la seguente legge:

Art. 1.

Autorizzazione alla ratifica

1. Il Presidente della Repubblica è autorizzato a ratificare l'Accordo di sede tra il Governo della Repubblica italiana e il Network internazionale di centri per l'astrofisica relativistica in Pescara - ICRANET, fatto a Roma il 14 gennaio 2008.

Art. 2.

Ordine di esecuzione

1. Piena ed intera esecuzione è data all'Accordo di cui all'articolo 1, a decorrere dalla data della sua entrata in vigore, in conformità a quanto disposto dall'articolo 16 dell'Accordo stesso.

Art. 3.

Copertura finanziaria

1. Agli oneri derivanti dall'attuazione della presente legge, pari a euro 440.000 annui a decorrere dall'anno 2010, si provvede mediante corrispondente riduzione dell'autorizzazione di spesa di cui all'articolo 3, comma 1, della legge 4 giugno 1997, n. 170.

2. Il Ministro dell'economia e delle finanze è autorizzato ad apportare, con propri decreti, le occorrenti variazioni di bilancio.

La presente legge, munita del sigillo dello Stato, sarà inserita nella Raccolta ufficiale degli atti normativi della Repubblica italiana. È fatto obbligo a chiunque spetti di osservarla e di farla osservare come legge dello Stato.

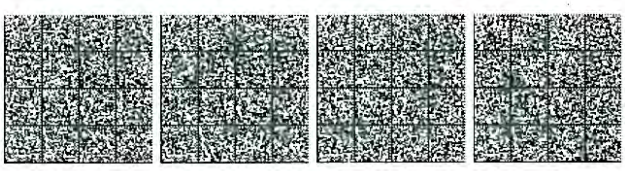
Data a Roma, addì 13 maggio 2010

NAPOLITANO

BERLUSCONI, *Presidente del Consiglio dei Ministri*

FRATTINI, *Ministro degli affari esteri*

Visto, *il Guardasigilli:* ALFANO



ALLEGATO

Accordo di Sede
tra
il Governo della Repubblica Italiana e

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

IL GOVERNO DELLA REPUBBLICA ITALIANA

e

il Network internazionale di Centri per l'Astrofisica Relativistica, (qui di seguito denominato ICRANET);

CONSIDERANDO l'Accordo istitutivo dell'ICRANET con annesso Statuto, fatto a Roma il 19 marzo 2003;

CONSIDERANDO che l'articolo 2 dell'Accordo istitutivo prevede che la sede dell'ICRANET sarà ubicata in Italia a Pescara;

INTENZIONATI a prendere tutte le misure necessarie per garantire l'insediamento ed il funzionamento della sede dell'ICRANET;

Hanno convenuto quanto segue:

ARTICOLO 1

1. per "*Governo italiano*" si intende il Governo della Repubblica Italiana;
2. per "*Icranet*" si intende il Network internazionale di Centri per l'Astrofisica Relativistica con sede, in Italia , in Pescara;
3. per "*Accordo istitutivo*" si intende l'Accordo istitutivo del Network internazionale di Centri per l'astrofisica relativistica ICRANET in Pescara, con annesso Statuto, fatto a Roma il 19 marzo 2003;
4. per "*Statuto*" si intende lo Statuto ICRANET annesso all'Accordo istitutivo;

5. per "*sede*" si intendono:

   a) gli «edifici, locali e terreni" utilizzati dall'ICRANET ed indicati come tali nella Convenzione intervenuta tra il Comune di Pescara e l'ICRANET il 29 novembre 2005, allegata al presente Accordo.
   b) gli "edifici, locali e terreni" che l'ICRANET utilizzerà temporaneamente per proprie attività ufficiali; in tal caso l'applicazione del presente Accordo relativo alla sede vale solo per il periodo durante il quale l'ICRANET occupa detti edifici, locali e terreni. In occasioni di tali eventi l'ICRANET provvederà ad avvertire le autorità competenti, per quanto possibile con almeno tre mesi di anticipo e secondo una procedura da concordare con le competenti autorità italiane.

6. per "*Direttore*" si intende il "capo accademico ed amministrativo dell'ICRANET ai sensi dell'articolo 9 dello Statuto;
7. per "*personale*" si intendono i membri del personale assunti dal Direttore ai sensi dell'articolo 9, paragrafo secondo, lettera a) e del regolamento del personale di cui all'articolo 6, lettera viii) dello Statuto;

ARTICOLO 2

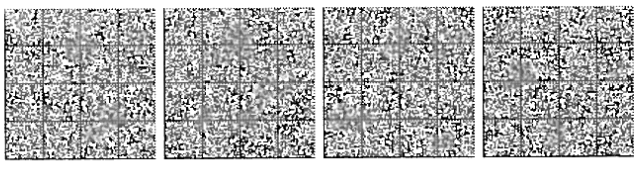
1. Il Governo italiano riconosce all'ICRANET la personalità giuridica ed, in particolare, la sua capacità giuridica di:

a) stipulare contratti;
b) acquisire ed alienare beni mobili ed immobili;
c) stare in giudizio.

2. Per le finalità del presente Accordo, l'ICRANET sarà rappresentato dal Direttore.

ARTICOLO 3

1. Considerando che ai sensi dell'articolo 2 dello Statuto annesso all'Accordo istitutivo, la sede dell'ICRANET in Italia è ubicata a Pescara, il Governo italiano prende atto che il Comune di Pescara metterà a disposizione dell'ICRANET il complesso sito in Piazza della Repubblica numero 10 in Pescara, indicato nella Convenzione intervenuta tra il Comune di Pescara e l'ICRANET il 29 novembre 2005.
2. Ogni modifica relativa alla sede sarà comunicata mediante scambio di lettere tra le Parti Contraenti.



ARTICOLO 4

1. I locali, gli edifici ed i terreni utilizzati dall'ICRANET, nonché gli archivi, saranno inviolabili. Le autorità competenti italiane non entreranno nei locali per svolgere attività ufficiali se non con esplicito consenso del Direttore dell'ICRANET ed alle condizioni con lui concordate. In caso di incendio o altra situazione di emergenza che richieda un immediato intervento protettivo, il consenso del Direttore o del suo rappresentante per entrare nei locali sarà presunto, qualora non sia possibile raggiungere in tempo né l'uno né l'altro.
2. Il Direttore dell'ICRANET si impegna a fare in modo che i locali della sede non vengano utilizzati come rifugio da persone intenzionate a sottrarsi ad un arresto o ad altri provvedimenti di limitazione della libertà personale ai sensi della legislazione italiana o che sono ricercate dall'Italia ai fini dell'estradizione in un altro Paese.
3. Le autorità italiane garantiranno il libero accesso agli edifici, ai locali e ai terreni utilizzati dal l'ICRANET alle persone indicate nell'articolo 11 del presente Accordo.

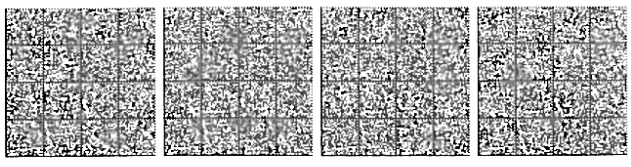
ARTICOLO 5

1. L'ICRANET, i suoi beni ed i suoi averi - ovunque situati e destinati al perseguimento dei suoi fini istituzionali - saranno immuni da qualsiasi forma di procedimento legale e non potranno essere oggetto di misure esecutive, amministrative o giudiziarie.
2. L'ICRANET non godrà dell'immunità dalla giurisdizione e dalla esecuzione nei seguenti casi particolari:

   - in relazione ad una azione civile da parte di un terzo per danni derivanti da un incidente causato da un veicolo, un'imbarcazione o un aeroplano che appartiene al, o è utilizzato per conto del l'ICRANET ovvero in relazione ad una violazione del codice stradale, nautico o aeronautico in cui siano coinvolti detti veicoli;
   - in relazione a contratti di diritto privato, diversi da quelli conclusi in conformità al regolamento interno sul personale;
   - in relazione ad una domanda riconvenzionale direttamente connessa a procedimenti legali intentati dall'ICRANET.

ARTICOLO 6

La responsabilità giuridica internazionale del Governo italiano non potrà essere chiamata in causa in conseguenza di attività dell'ICRANET sul territorio italiano, di atti o omissioni dell'ICRANET o di suoi rappresentanti, che agiscono o si astengono dall'agire nei limiti delle proprie funzioni. Qualora venisse chiamata in causa la responsabilità del Governo italiano, questo avrà diritto di rivalsa nei confronti dell'ICRANET.



ARTICOLO 7

1. L'ICRANET sarà responsabile di tutti i danni o pregiudizi provocati dalle proprie attività in Italia.
2. L'ICRANET dovrà tenere indenne il Governo italiano da ogni richiesta di risarcimento per danni prodotti a terzi.
3. L'ICRANET si impegnerà a stipulare un'assicurazione a copertura di ogni responsabilità civile verso terzi allo scopo di garantire il risarcimento dei danni eventualmente causati nello svolgimento delle proprie funzioni.

ARTICOLO 8

1. L'ICRANET sarà autorizzato ad impiantare nella propria sede sistemi di comunicazione.
2. Il Governo italiano adotterà tutti i provvedimenti idonei ad agevolare l'ICRANET nell'impianto e nell'utilizzazione di tali sistemi di comunicazione, conformemente alle leggi e ai regolamenti italiani.
3. Nessuna comunicazione ufficiale indirizzata all'ICRANET o a qualsiasi membro del suo personale, nessuna comunicazione ufficiale inviata dall'ICRANET, in qualsiasi forma e tramite qualsiasi mezzo di trasmissione, potrà essere sottoposta a restrizioni di qualsiasi tipo o essere violata nella sua riservatezza.

ARTICOLO 9

1. L'ICRANET, i suoi averi, beni e redditi, ovunque situati e da chiunque tenuti, saranno, nell'esercizio delle sue attività ufficiali e per il perseguimento dei suoi fini istituzionali, esenti da tasse e imposte dovute a Stato, regioni, province e comuni.
2. Per quanto attiene all'imposta sul valore aggiunto (IVA), l'ICRANET ne sarà esente per gli acquisti di beni e servizi, di importo rilevante, concernenti le sue attività ufficiali e l'esercizio delle sue funzioni. Ai fini del presente Accordo l'espressione «acquisti di importo rilevante» si applicherà all'acquisto di beni e servizi di importo superiore al limite stabilito dalla legislazione nazionale per le organizzazioni internazionali in Italia.
3. Le esenzioni di cui al presente Articolo non si applicheranno a imposte e tasse che costituiscono il corrispettivo per servizi pubblici resi dalle autorità competenti italiane all'ICRANET.
4. L'ICRANET sarà esente da ogni dazio doganale, imposta, divieto o restrizione, sui beni di ogni tipo importati o esportati nell'esercizio delle proprie attività ufficiali.

5. I beni importati in esenzione da dazi, imposte e da divieti e restrizioni, conformemente al presente Accordo, non potranno essere ceduti a terzi a titolo oneroso o gratuito senza il preventivo accordo delle autorità italiane, e senza il pagamento delle relative imposte, diritti e contributi. Qualora dette imposte, diritti e contributi vengano fissati in funzione del valore dei beni, essi verranno calcolati su tale valore al momento della cessione, con l'applicazione della tariffa in vigore a tale data.
6. L'ICRANET potrà gestire fondi, valuta o contanti nonché conti in qualsiasi valuta nella misura necessaria a far fronte ai suoi scopi istituzionali.

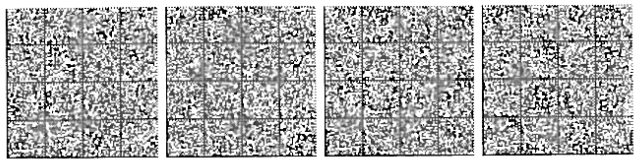
ARTICOLO 10

L'ICRANET sarà esente da imposte, dazi doganali o da ogni altra imposizione, nonché da ogni divieto o restrizione all'importazione di due veicoli destinati «alle attività ufficiali» e dei relativi pezzi di ricambio. L'ICRANET sarà parimenti esente dalla tassa di possesso sui due veicoli, che verranno immatricolati in una serie speciale. I carburanti e lubrificanti necessari a detti veicoli potranno essere acquistati o importati in esenzione entro i limiti dei contingenti stabiliti per le altre organizzazioni internazionali già presenti in Italia.

ARTICOLO 11

1. I privilegi e le immunità sono concessi dal presente Accordo al personale dell'ICRANET, assunto dal Direttore ai sensi dell'articolo 9, paragrafo secondo, lettera a) dello Statuto, per garantire unicamente lo svolgimento delle attività ufficiali dell'ICRANET.
2. Il personale dell'ICRANET godrà a tal fine in territorio italiano dei seguenti privilegi e immunità:

   a) immunità dalla custodia cautelare, eccetto in caso di flagranza o di reato che comporti pena della reclusione non inferiore ai quattro anni, nel qual caso le competenti Autorità italiane notificheranno immediatamente tale provvedimento al Direttore;
   b) immunità dal sequestro o dall'ispezione del bagaglio ufficiale fatti salvi i controlli per motivi di sicurezza;
   c) immunità giurisdizionale di qualsiasi genere per le parole dette o scritte e per tutti gli atti compiuti nell'esercizio delle sue funzioni ufficiali, essendo inteso che questa immunità sarà mantenuta anche dopo che gli interessati abbiano cessato di essere membri del personale dell'ICRANET;



d) esenzione, per il personale che non abbia la cittadinanza italiana o la residenza permanente nel territorio italiano all'atto della presa di servizio presso l'ICRANET, da ogni forma di imposta diretta sui salari, emolumenti e indennità pagati dall'ICRANET;

e) esenzione per il personale che non abbia la cittadinanza italiana o la residenza permanente nel territorio italiano da ogni forma di tassazione diretta sul reddito derivante da fonti al di fuori della Repubblica italiana;

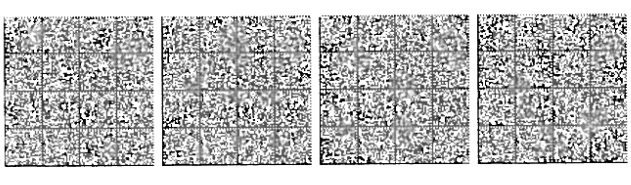
f) esenzione per se stessi, i propri coniugi e i familiari a carico, dalle restrizioni sull'immigrazione e dalle formalità di registrazione degli stranieri;

g) il diritto di importare in franchigia doganale e senza divieti e restrizioni - dal paese della loro ultima residenza o da quello di cui sono cittadini - a titolo di primo insediamento, per un periodo di un anno ad iniziare dalla presa di servizio presso l'ICRANET per un massimo di due spedizioni, la propria mobilia e i propri effetti personali, compreso un veicolo acquistato alle condizioni di mercato di tale paese, che sarà registrato in una serie speciale;

h) il diritto di esportare, nell'anno successivo alla data di cessazione delle loro funzioni dall'ICRANET, senza divieti e restrizioni fiscali, la propria mobilia e i propri effetti personali, compresi i veicoli, in loro uso e possesso;

i) libertà di detenere e gestire, per il personale che non abbia la cittadinanza italiana o la residenza permanente nel territorio italiano, titoli esteri, conti in valuta estera ed altri beni mobili ed immobili. Tale personale potrà liberamente portare i propri titoli esteri e la propria valuta fuori della Repubblica italiana.

3. Ogniqualvolta un membro del personale prende servizio o termina le proprie funzioni, l'ICRANET ne informerà le autorità italiane. Almeno una volta all'anno l'ICRANET comunicherà alle autorità italiane l'elenco del personale, dei coniugi e dei familiari a loro carico.
4. Le autorità italiane rilasceranno ai membri del personale dell'ICRANET, ai loro coniugi e ai familiari a carico che godano di privilegi, immunità e facilitazioni, una carta di identità speciale che attesti che il titolare di tale documento è un funzionario dell'ICRANET o il coniuge o un familiare a carico e che essi godono dei privilegi, delle immunità e delle facilitazioni previsti nel presente Articolo.
5. I privilegi e le immunità previsti nel presente Accordo sono conferiti nell'interesse dell'ICRANET e non a vantaggio personale degli interessati. Il Direttore toglierà l'immunità a qualsiasi funzionario in tutti i casi in cui, a suo giudizio, l'immunità impedisca il corso della giustizia e sempre che possa essere tolta senza pregiudizio degli interessi dell'ICRANET.
6. L'ICRANET ed il suo personale coopereranno in ogni occasione con le autorità italiane competenti per facilitare la buona amministrazione della giustizia, assicurare l'osservanza dei regolamenti di polizia e per evitare qualsiasi abuso dei privilegi e delle immunità previsti nel presente Accordo.
7. Fatti salvi i privilegi e le immunità concessi in base al presente Accordo, tutti coloro che godranno di detti privilegi ed immunità avranno l'obbligo di conformarsi alla legislazione ed ai regolamenti in vigore nel territorio della Repubblica italiana e non interferiranno negli affari interni dello Stato.



ARTICOLO 12

Il Governo italiano riconoscerà all'ICRANET il diritto di convocare riunioni nella propria sede e, in cooperazione con le autorità italiane interessate, in qualsiasi altra località d'Italia.

Il Governo italiano adotterà tutte le misure necessarie per facilitare l'entrata, il soggiorno nella e la partenza dalla Repubblica italiana delle persone che qui appresso elencate, interverranno a riunioni dell'ICRANET e non porrà alcun ostacolo al loro transito per o dalla sede centrale in conformità alle norme comunitarie che disciplinano l'ingresso e il transito di persone nell'area Schengen:

a) i membri del personale dell'ICRANET e le loro famiglie;
b) i rappresentanti di Stati membri e non membri in visita alla sede centrale per affari ufficiali e i membri delle loro famiglie;
c) gli esperti che compiano missioni ufficiali presso l'ICRANET;
d) i funzionari delle Nazioni Unite, delle Istituzioni specializzate e funzionari di altre organizzazioni intergovernative,di istituti internazionali e di organizzazioni non governative, in visita alla sede centrale per affari ufficiali;

3. Il Direttore comunicherà preventivamente per iscritto al Governo italiano i nomi delle persone di cui al paragrafo 2 del presente articolo.
4. Qualsiasi visto che possa rendersi necessario per le persone indicate al paragrafo 2 del presente articolo sarà accordato il più rapidamente possibile.
5. Nessuna delle persone indicate al paragrafo 2 del presente articolo potrà essere invitata a lasciare il territorio della Repubblica italiana, se non in caso di abuso del diritto di soggiorno nell'esercizio di attività non connesse alle sue funzioni ufficiali.

ARTICOLO 13

1. Le persone di cui all'articolo 12, paragrafo 2, lettere *b), c), d),* che interverranno alle riunioni dell'ICRANET o a quelle da esso convocate, durante l'esercizio delle loro funzioni e durante i loro viaggi per e dal luogo di riunione, godono dei seguenti privilegi ed immunità:

a) immunità giurisdizionale per parole dette o scritte e per tutti gli atti da essi compiuti nell'esercizio delle loro funzioni ufficiali, essendo inteso che tale immunità sarà mantenuta anche dopo che gli interessati abbiano cessato di esercitare le loro funzioni;
b) inviolabilità di tutte le carte e documenti;
c) diritto a ricevere comunicazioni a mezzo di corrieri o in valigie sigillate;

d) esenzione dalle restrizioni relative all'immigrazione e dalla registrazione degli stranieri;
e) le stesse facilitazioni in materia di restrizioni valutarie o di cambio accordate a rappresentanti di governi stranieri in missione ufficiale temporanea;
f) le stesse immunità e facilitazioni per i bagagli personali e ufficiali accordate a membri di missioni diplomatiche di rango equivalente, fatti salvi i controlli per motivi di sicurezza.

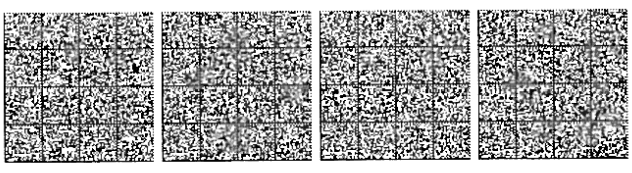
2. I privilegi e le immunità previsti nel presente Articolo sono conferiti nell'interesse dell'ICRANET e non a vantaggio personale degli interessati, ma allo scopo di garantire l'indipendenza delle loro funzioni. Questi privilegi e immunità sono concessi ferma restando la possibilità dei Governi di revocare l'immunità dei propri rappresentanti ogni qualvolta la ritengano un impedimento al corso della giustizia e sempre che tale immunità possa essere tolta senza pregiudizio degli scopi per i quali essa è accordata.

ARTICOLO 14

1. Il personale dell'ICRANET potrà scegliere per la sicurezza sociale e assicurazione malattia di:

a) aderire ad un Fondo di assistenza e previdenza interno all'ICRANET;
b) aderire ad un Fondo privato nazionale o estero scelto dall'ICRANET;
c) aderire al Sistema nazionale di sicurezza sociale vigente nella Repubblica italiana secondo modalità concordate dall'ICRANET mediante apposita convenzione amministrativa con le competenti autorità italiane.

2. Nei casi previsti al precedente comma, lettere a) e b) l'ICRANET sarà esente dai contributi obbligatori di sicurezza sociale e assicurazione malattia dovuti agli Istituti italiani di sicurezza sociale sulle retribuzioni corrisposte dall'ICRANET, o a suo nome, al proprio personale.
3. L'ICRANET si impegna a comunicare alle competenti autorità italiane i regolamenti dei Fondi di cui alle lettere a) e b) del comma 1 del presente articolo ed ogni eventuale successiva modifica.



ARTICOLO 15

Ogni controversia relativa all'interpretazione o all'applicazione del presente Accordo sarà risolta per via negoziale tra le due Parti contraenti. Le controversie non risolte con questa procedura saranno demandate ad un tribunale di tre (3) giudici: uno (1) nominato dal Direttore dell'ICRANET e uno (1) nominato del Governo italiano ed il terzo, nel ruolo di Presidente, dovrà essere scelto dai primi due. Se i primi due arbitri non raggiungono un Accordo sulla scelta del terzo arbitro entro sei mesi dalla data della loro nomina, il terzo arbitro sarà designato dal Presidente della Corte Internazionale di Giustizia su richiesta di una delle Parti. La decisione arbitrale avrà valore vincolante.

ARTICOLO 16

Il presente Accordo entrerà in vigore alla data dello scambio di note con il quale le due Parti contraenti comunicheranno di aver adempiuto alle formalità previste dai rispettivi ordinamenti e rimarrà in vigore per tutto il tempo che l'ICRANET manterrà la propria sede nella Repubblica italiana.

Fatto a Roma il 14 GEN. 2008

Per la Repubblica Italiana

Per l'ICRANET

ALLEGATO

ICRANet

International Center for Relativistic Astrophysics Network

Roma, 29 novembre 2005

Al Ministro degli Affari Esteri
Palazzo della Farnesina
Roma

Nella riunione svolta in data 29 novembre 2005 presso il Ministero degli Affari Esteri, tenuto conto della delega del Sindaco di Pescara, Luciano D'Alfonso, n. 829/Gab. del 28 novembre 2005, che si allega alla presente, si conviene quanto segue:

- la definizione dell'area di pertinenza della Sede ICRANet di Pescara, ubicata in Piazza della Repubblica n. 10, è composta, come da allegata Mappa, dall'immobile e da un'area extraterritoriale di quattro metri su tre lati e di sei metri sul lato posteriore (ponte ex Pensilina ferroviaria), come da allegato 1.
- In conformità alle vigenti disposizioni, le spese relative alla manutenzione straordinaria della Sede dell'ICRANET sono a carico del Comune di Pescara che ha concesso la Sede a titolo di comodato gratuito; le spese di manutenzione ordinaria sono a carico dell'ICRANET.

Le Parti evidenziano, con l'occasione, la importanza della collaborazione da parte della Amministrazione del Comune di Pescara e l'ICRANET, che avrà senz'altro notevoli riflessi per la Città di Pescara, per l'Abruzzo e per l'Italia, nonché per lo sviluppo scientifico e culturale a livello internazionale.

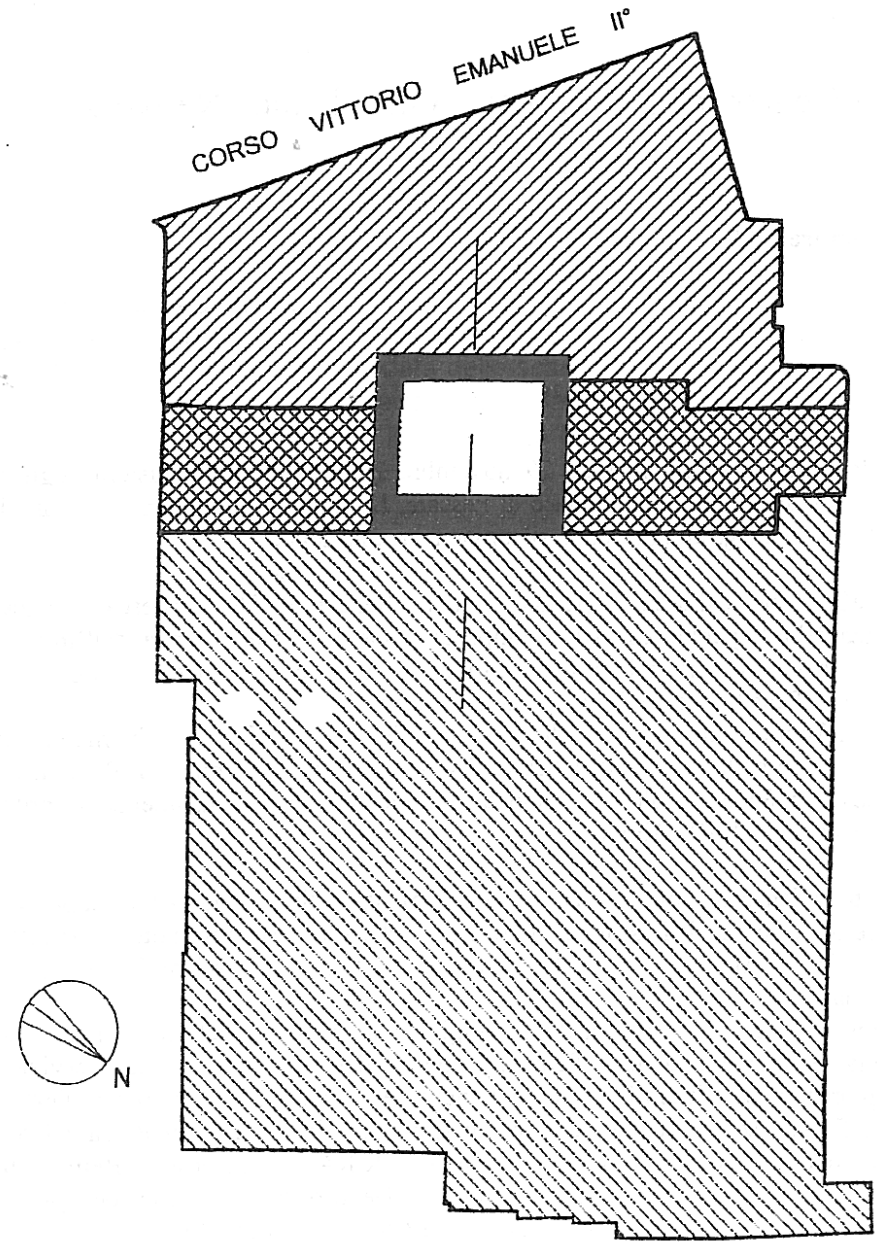
Il presente Accordo, sottoscritto in originale in presenza del Consigliere Adolfo Barattolo, e della Dott.ssa Immacolata Pannone, nonché dei rappresentanti del Servizio del Contenzioso Diplomatico ed Ufficio Legislativo, nonché del Ministro Plenipotenziario Dott. Elio Menzione, viene firmato seduta stante dal Capo di Gabinetto del Sindaco di Pescara Luciano D'Alfonso, Dott. Achille D'Alessandri e dal Direttore dell'ICRANET, Professore Remo Ruffini e sarà riprodotto in via dattilografica in modo conforme. Detto originale è depositato presso la Direzione Generale per la Promozione e la Cooperazione Culturale, Ufficio III.

In fede

Dott. Achille D'Alessandri

Prof. Remo Ruffini

SEDE ICRANet - PESCARA - DEFINIZIONE AREA DI PERTINENZA
Scala 1:1.000
Novembre 2005



area vincolata dalla Soprintendenza Beni Architettonici per l'Abruzzo

area pertinenziale da Catasto Urbano Comune di Pescara - foglio 20

area extraterritoriale
4 metri su tre lati; 6 metri sul lato posteriore (fronte ex-pensilina ferroviaria)

LAVORI PREPARATORI

Camera dei deputati (atto n. 2815):

Presentato dal Ministro degli affari esteri (FRATTINI) il 16 ottobre 2009.

Assegnato alla III commissione (Affari esteri e comunitari), in sede referente, il 10 novembre 2009, con pareri delle commissioni I, II, V, VI, VII, IX, XI e questioni regionali.

Esaminato dalla III commissione (Affari esteri e comunitari) il 24 novembre 2009 ed il 16 dicembre 2009.

Esaminato in aula l'11 gennaio 2010 ed approvato il 12 gennaio 2010.

Senato della Repubblica (atto n. 1960):

Assegnato alla 3ª commissione (Affari esteri, emigrazione), in sede referente, il 20 gennaio 2010, con pareri delle commissioni 1ª, 2ª, 5ª, 6ª e 7ª.

Esaminato dalla 3ª commissione (Affari esteri, emigrazione) il 26 gennaio 2010 ed il 14 aprile 2010.

Esaminato ed approvato il 14 aprile 2010.

10G0106

DECRETI PRESIDENZIALI

ORDINANZA DEL PRESIDENTE DEL CONSIGLIO DEI MINISTRI 19 maggio 2010.

Modalità di attivazione del Fondo per interventi straordinari della Presidenza del Consiglio dei Ministri, istituito ai sensi dell'articolo 32-*bis* del decreto-legge 30 settembre 2003, n. 269, convertito, con modificazioni, dalla legge 24 novembre 2003, n. 326, ed incrementato con la legge 24 dicembre 2007, n. 244. (Ordinanza n. 3879).

IL PRESIDENTE
DEL CONSIGLIO DEI MINISTRI

Visto l'art. 5, comma 3, della legge 24 febbraio 1992, n. 225;

Vista la legge 11 gennaio 1996, n. 23, ed in particolare l'art. 3;

Visto l'art. 107, comma 1, lettera *c)*, del decreto legislativo 31 marzo 1998, n. 112;

Visto il decreto-legge 7 settembre 2001, n. 343, convertito, con modificazioni, dalla legge 9 novembre 2001, n. 401;

Vista la legge 27 dicembre 2002, n. 289, recante «Disposizioni per la formazione del bilancio annuale e pluriennale dello Stato (legge finanziaria 2003)» ed in particolare l'art. 80, comma 21;

Vista l'ordinanza del Presidente del Consiglio dei Ministri n. 3274 del 20 marzo 2003 e successive modificazioni ed integrazioni, recante «Primi elementi in materia di criteri generali per la classificazione sismica del territorio nazionale e di normative tecniche per le costruzioni in zona sismica»;

Visto il decreto-legge 30 settembre 2003, n. 269, convertito, con modificazioni, dalla legge 24 novembre 2003, n. 326, recante «Disposizioni urgenti per favorire lo sviluppo e per la correzione dell'andamento dei conti pubblici»;

Visto, in particolare, l'art. 32-*bis* del predetto decreto-legge 30 settembre 2003, n. 269, convertito, con modificazioni, dalla legge 24 novembre 2003, n. 326, che, allo scopo di contribuire alla realizzazione di interventi infrastrutturali, con priorità per quelli connessi alla riduzione del rischio sismico, e per far fronte ad eventi straordinari nei territori degli enti locali, delle aree metropolitane e delle città d'arte, ha istituito un apposito Fondo per interventi straordinari, autorizzando a tal fine la spesa di euro 73.487.000,00 per l'anno 2003 e di euro 100.000.000,00 per ciascuno degli anni 2004 e 2005;

Vista l'ordinanza del Presidente del Consiglio dei Ministri 8 luglio 2004, n. 3362, recante «Modalità di attivazione del Fondo per interventi straordinari della Presidenza del Consiglio dei Ministri, istituito ai sensi dell'art. 32-*bis* del decreto-legge 30 settembre 2003, n. 269, convertito, con modificazioni, dalla legge 24 novembre 2003, n. 326»;

Vista la legge 24 dicembre 2007, n. 244, recante «Disposizioni per la formazione del bilancio annuale e pluriennale dello Stato», ed in particolare l'art. 2, comma 276, che, al fine di conseguire l'adeguamento strutturale ed antisismico degli edifici del sistema scolastico, nonché la costruzione di nuovi immobili sostitutivi degli edifici esistenti, laddove indispensabili a sostituire quelli a rischio sismico, ha incrementato di 20 milioni di euro, a decorrere dall'anno 2008, il predetto Fondo per interventi straordinari, prevedendone l'utilizzo secondo programmi basati su aggiornati gradi di rischiosità;

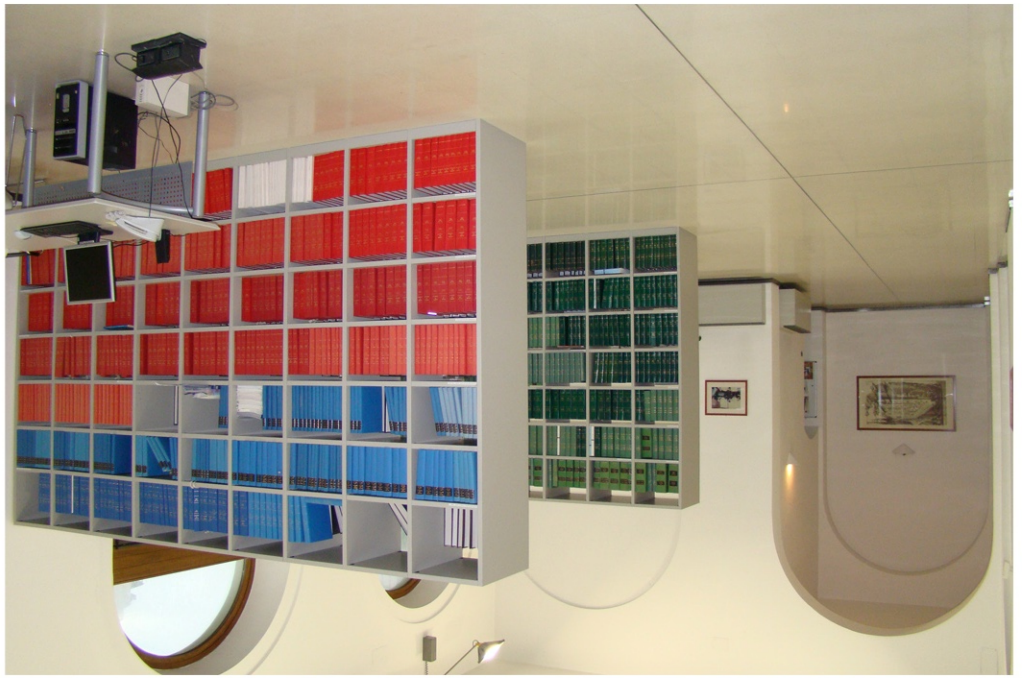
Vista l'ordinanza del Presidente del Consiglio dei Ministri del 29 dicembre 2008, n. 3728, che ha ripartito tra regioni e province autonome le risorse dell'annualità 2008 destinate nel predetto Fondo agli interventi previsti dall'art. 2, comma 276, della legge 24 dicembre 2007, n. 244, ha stabilito gli interventi ammissibili a finanziamento ed ha individuato le relative procedure di finanziamento;











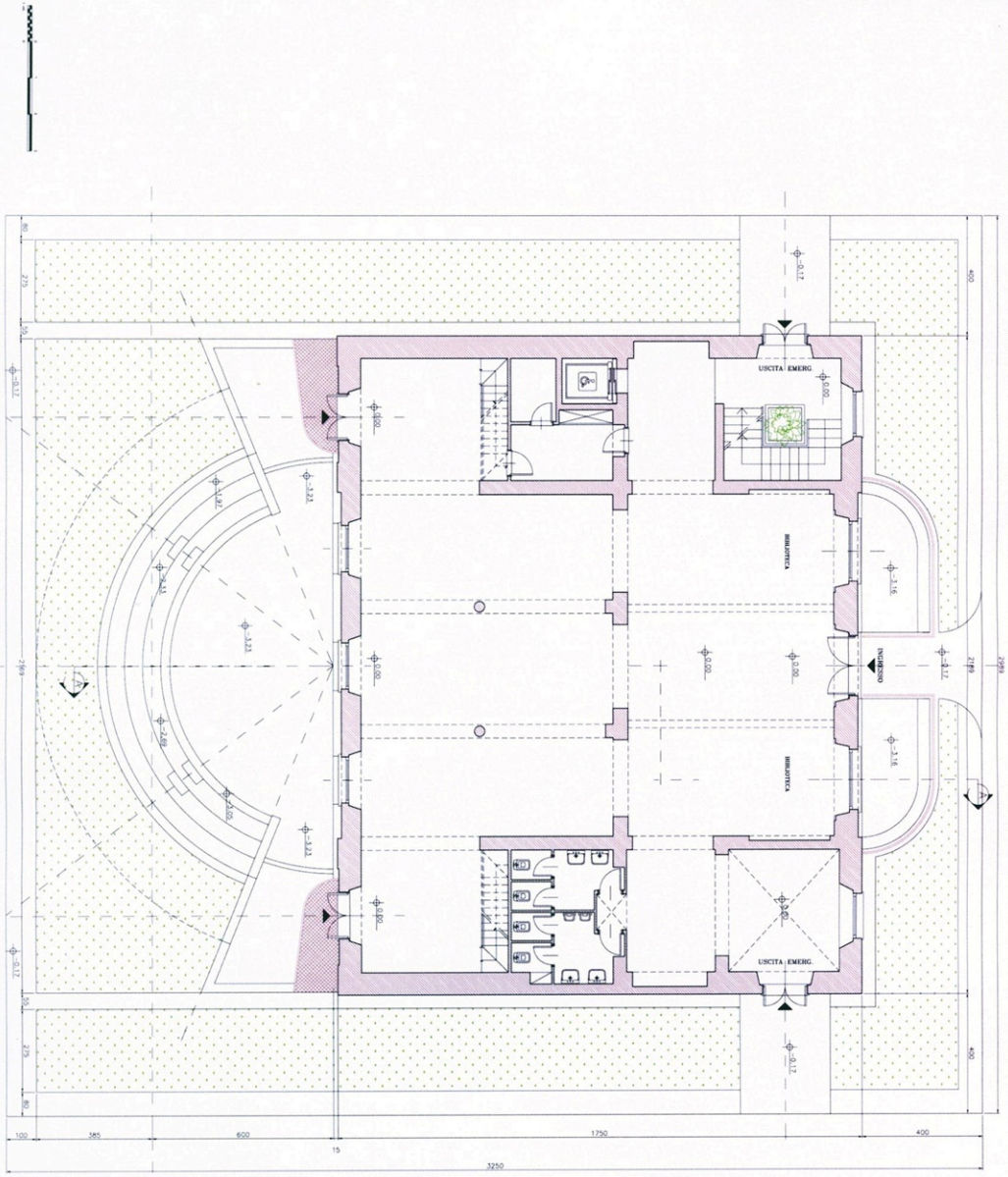












Comune di PESCARA

ICRANet - International Center for Relativistic Astrophysics

SISTEMAZIONE AREA ESTERNA DI PERTINENZA - PIANTA PIANO TERRA

giugno 2007

scala adattata 1:117

Enclosure 2

Activities of the ICRANet Armenia Centre

ICRANET ARMENIA SEAT

Summary

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Introduction

The state members of ICRANet international organization are the states of Armenia, Brazil, Italy, the Vatican City State, as well as ICRA, the University of Arizona and the Stanford University. The ICRANet Armenia seat is in the Presidium of the National Academy of Sciences of the Republic of Armenia (NAS RA) since January 2014: it is among more than 34 scientific institutions and other organizations which are included in the Presidium of the Academy. In Armenia, the ICRANet centre effectively collaborates with other scientific institutions from the Academy and Universities which includes organizing joint international meetings/workshops, summer schools for PhD students and mobility programs for scientists in the field of Astrophysics. ICRANet centre in Armenia can play a strategic role for the ICRANet activities in the area of central-Asian and middle-Eastern countries. In 2014, the government of the Republic of Armenia approved the agreement to establish ICRANet international centre in Armenia. The seat agreement was signed in Rome on 14 February 2015 by the director of ICRANet Prof. Remo Ruffini and the ambassador of Armenia in Italy Mr. Sargis Ghazaryan. On 13 November 2015, the Parliament of the Republic of Armenia unanimously approved the Seat Agreement. With this status, the Seat in Yerevan will contribute to the development of Relativistic Astrophysics in Armenia and will give to Armenian researchers the possibility to participate in the international programs implemented by ICRANet.

Current members of the group



Period 2014-



Sargis Gasparyan

PhD student 2016-2019, postdoc 2019



David Israyelyan

Master student 2018-2020
Phd student 2020-



Gevorg Harutyunyan

Master student 2018-2020
Phd student 2020-



Vazgen Vardanyan

Master student 2020-



Mher Khachatryan

undergrounded student 2018-



Mary Harutyunyan

undergrounded student 2019-



Ivetta Hakobyan
Secretary 2018



Gurgen Petrosyan
system administrator
2014-

Scientific activity of ICRANet in Armenia

The main scientific activities of ICRANet-Armenia are in the field of X- and gamma-ray Astrophysics and Astroparticle Physics. The results from the data analysis of Swift/NuStar, Chandra and Fermi Large Area Telescope (Fermi LAT) telescopes are used to investigate the particle acceleration and emission processes in the radio galaxies and blazars. The analysis of available data, allows to explore the emission processes and relativistic outflows in the most extreme regimes (keV-TeV). Also, the production and propagation of ultra-high-energy neutrinos from binary systems and active galactic nuclei are investigated. Currently ongoing research projects in ICRANet Armenia are:

- Study the emission processes of misaligned active galactic nuclei (radio galaxies and narrow line Seyfert 1) using X-ray (Swift/NuStar) and gamma-ray (Fermi LAT) data.
- Study of the origin of the emission in the large scale jets of active galactic nuclei. The combination of Fermi LAT and Chandra data allows to investigate the properties of the jets from sub-parsec to kpc scales.
- Investigation of emission processes in the jets of blazars. Taking into account the results from the observations of BL Lac and FSRQs blazars from radio to very high energy gamma-ray bands, the underlying particle distributions are obtained using Markov Chain Monte Carlo technique which allows to investigate the acceleration processes.
- The production of very high energy neutrinos in the jet of microquasars and blazars are investigated. Also the possibility of detection of those neutrinos with current (IceCube) and future instruments (KM3Net) is discussed.
- Using time dependent electron spectra, the emission processes in Crab nebulae, GRBs and similar sources (consisting of pulsar and pulsar winds) are studied during the first years of their formation.

Collaboration with other Institutes and Universities

Collaboration with Italy

ICRANet: In collaboration with Prof. Ruffini`s group, the HE emission processes in Crab nebulae, gamma-ray bursts and similar sources (consisting of pulsar and pulsar winds) are studied. In particular, taking into account different injection spectra of electrons and relevant cooling processes (synchrotron, inverse Compton and adiabatic cooling), the emitting electron spectra are obtained from the solution of kinetic equation describing the temporal evolution of electron distribution. With those spectra the electron synchrotron emission is calculated for different time periods and the observed data are modeled.

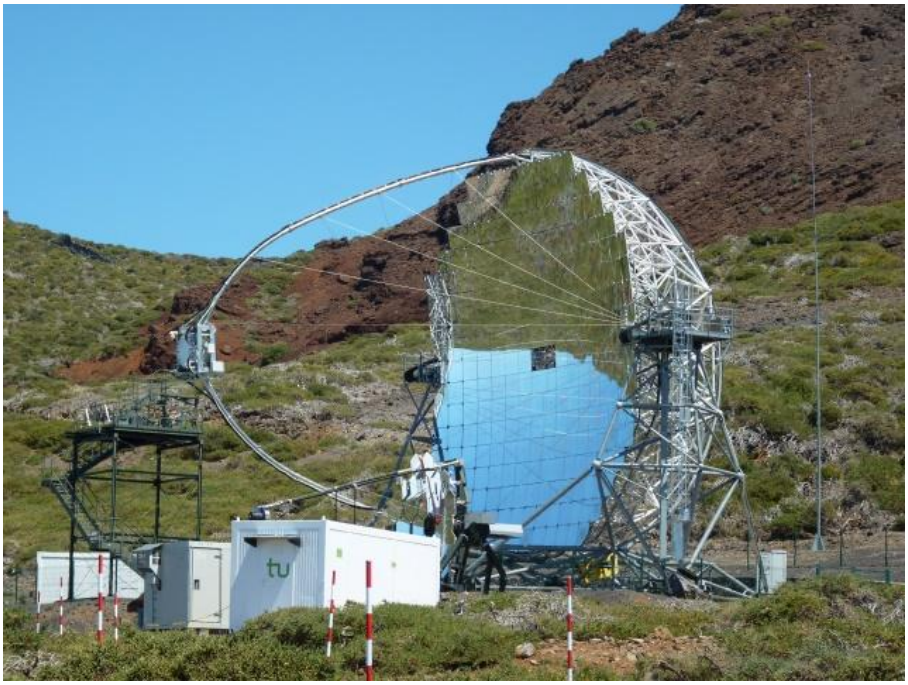
ASI science data center with Open Universe Initiative: In collaboration with Paolo Giommi the light curves of bright blazars are calculated using the adaptive binning method. This method enables the creation of constant-uncertainty light curves with the data of Fermi LAT. This method enables more information to be encapsulated within the light curve than with the fixed-binning method. The results will be published in the web page of open Universe- http://www.openuniverse.asi.it

Collaboration with Brazil

In collaboration with Barres de Almeida, Ulisses, Bernardo Machado de Oliveira Fraga and etc from Brazil the emission from Markarian 421 is investigated using optical, X-ray and gamma-ray data. Also the polarization of the emission and changes in the polarization degree is investigated.

Collaboration with Germany

Since 2017 ICRANet group in Armenia joined the MAGIC collaboration with full rights and responsibilities, the group is in close collaboration with the colleagues from the MAGIC collaboration. This allows obtaining and analyzing high and very high energy gamma- ray data from the observations of different astrophysical objects. Also, in 2018 one PhD student visited La Palma for participating in the MAGIC observations.



MAGIC Telescope

Recent publications

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- Sahakyan N., Broad-band study of high-synchrotron-peaked BL Lac object 1ES 1218+304, Monthly Notices of the Royal Astronomical Society, Volume 496, Issue 4, 2020, pp.5518-5527
- Sahakyan, N., Investigation of the γ-ray spectrum of CTA 102 during the exceptional flaring state in 2016-2017, Astronomy & Astrophysics, Volume 635, id.A25, 2020, 10 pp.
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- Giommi P., Chang Y., Turriziani S., Glauch T., Leto C., Verrecchia F., Padovani P., Penacchioni A., Arneodo F., Barres de Almeida U., Brandt C., Capalbi M., Civitarese O.,

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The entrance of Armenia in ICRANet

DA : AMB. REP. ARMENIA, ROMA N. FAX : 39063297763 30 Ott. 2003 12:57 P2

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AMBASCIATA DELLA REPUBBLICA D'ARMENIA

Via dei Colli della Farnesina, 174 00194-Roma
tel.(+39) 06 3296638 fax (+39) 06 3297763 E-mail: embarmit@tin.it

The undersigned Ambassador Gaghik Baghdassarian hereby declares the ratification on the part of the Republic of Armenia, by Presidential decree no. 141, of the Agreement on the Establishment of International Network of Centres for Relativistic Astrophysics, entitled ICRANET, signed on June 12, 2003, in Rome, by Ambassador Gaghik Baghdassarian, on behalf of the Republic of Armenia.

By means of the present, the undersigned Ambassador Gaghik Baghdassarian, has the honour to delegate Prof. Vahe G.Gurzadyan, as representative of the Republic of Armenia to the Steering Committee of ICRANET.

In witness whereof the undersigned Ambassador Gaghik Baghdassarian has signed the present act and affixed thereto his seal.

Rome, October 30, 2003

Ambassador
Gaghik Baghdassarian

Seat agreement

In 2014, the Government of the Republic of Armenia approved the agreement to establish the ICRANet international center in Armenia. The seat agreement has been signed in Rome on February 14, 2015 by the director of ICRANet, Remo Ruffini and the ambassador of Armenia in Italy, Mr. Sargis Ghazaryan. On November 13, 2015 the Parliament of the Republic of Armenia unanimously approved the Seat Agreement





AGREEMENT

BETWEEN THE GOVERNMENT OF THE REPUBLIC OF ARMENIA AND THE INTERNATIONAL CENTER FOR RELATIVISTIC ASTROPHYSICS NETWORK (ICRANET) ON THE ESTABLISHMENT OF ICRANET CENTER IN THE REPUBLIC OF ARMENIA

The Government of the Republic of Armenia

and

The International Center for Relativistic Astrophysics Network (ICRANet),
Jointly referred to as "Parties",

Wishing to develop and strengthen the cooperation between the Republic of Armenia and ICRANet to promote research, training and education in the field of relativistic astrophysics;

Aiming to involve scientists and professionals of the Republic of Armenia in the activities organized and implemented by ICRANet and in trainings at post-graduate and post-doctoral levels as well as to promote joint implementation of exchange programs;

On the basis of the Agreement on the Establishment of the International Center for Relativistic Astrophysics Network, signed on June 12, 2003;

Hereby agreed on the establishment of ICRANet Center, in the system of the National Academy of Sciences of the Republic of Armenia, with the terms and conditions of functioning as stated hereunder:

Article 1

Within the purposes of the present Agreement:

a. "Government" stands for the Government of the Republic of Armenia;
b. "Center" stands for the International Center for Relativistic Astrophysics Network (ICRANet Center), which is established in the system of the National Academy of Sciences of the Republic of Armenia and located in the main building of the Institute of Geological Sciences (address: 24A, Marshall Baghramyan Avenue, Yerevan 0019, Republic of Armenia).
c. "ICRANet" stands for the International Center for Relativistic Astrophysics Network;
d. "Statutory Agreement" stands for the Agreement on the Establishment of the International Center for Relativistic Astrophysics Network (ICRANet);
e. "Statute" stands for the Statute of ICRANet, attached to the Statutory Agreement.
f. "Property" stands for real estate, furniture, vehicles, rights, assets in any

currency, credits, income, other assets and everything that may constitute the patrimony of Center;

g. "Files" stands for the correspondence, manuscripts, audio-visual material of any kind, as well as all other documents belonging to Center or in its possession;

h. "Staff" stands for the employees of the Center, who are not nationals of the Republic of Armenia, nor have permanent resident status in the Republic of Armenia;

i. "Local staff" stands for the employees hired by the Center in the territory of the Republic of Armenia for the performance of administrative duties or services.

Article 2

1. Within the framework of the present Agreement, in compliance with the Statutory Agreement and the legislation of the Republic of Armenia the Center as a research institution is established. In accordance with the provisions of Article 2 of the Statute the Center shall implement ICRANet mission in the Republic of Armenia by supporting and supplementing national efforts in the areas of research, training and education in the field of relativistic astrophysics.

2. Within the scope of its activities the Center shall be responsible for developing, coordinating and supporting cooperation between the Government and ICRANet, as well as promoting the development of relativistic astrophysics with academic community and civil society. ICRANet may support to the development of country studies and research programs with the participation of Armenian research institutions and universities by providing high quality services and mobilizing resources for the financing of projects, as well as other activities prescribed by Article 3 of the Statutory Agreement.

Article 3

1. In conformity with Article 1 of the Statute, the Center shall have legal personality and shall have the capacity to conclude contracts, to acquire and dispose movable and immovable Property, to open legal proceedings, bank accounts in local and foreign banks in national and foreign currency and to posses them.

2. In terms of scientific activity the Center shall remain under the authority and responsibility of ICRANet. With respect to issues on labor, sanitary and other requirements the norms deriving from the legislation of the Republic of Armenia shall be applied.

3. The premises of the Center shall not be used for the purposes not compatible with the functions of ICRANet.

Article 4

1. The budget of the Center is composed from contributions of the Parties.

2. The Contributions of the Government to the Center will be made annually as part of general means provided by the budget of the Republic of Armenia for scientific and technological activities.

3. ICRANet will make its own contributions to the budget of the Center by implementing annual mobility programs for researchers of the Center aimed at visits to other ICRANet Centers and exchange of best practices, by supplying computer facilities with the aim to establish scientific data base in the Center and transfer data from ground and space based observatories.

4. Insurance of the premises and equipment of the Center will be covered by the Armenian Party. The insurance for the equipment obtained for the Center by ICRANet shall be covered by ICRANet.

5. The Center will cover part of its expenses from its own budget, including organization of visits, communication services, information technologies and programs, as well as office supplies and expenses related to restoration of equipments and technical assistance. From the annual means provided by the budget of the Republic of Armenia for scientific and technological activities, the Government will also ensure communal services and security of the premises in conformity with the protection regime of the building.

6. Necessary internal renovations may be made in the premises of the Center provided that no structural elements of the building are changed.

Article 5

1. The Ministry of Education and Science of the Republic of Armenia will establish a Governing Board in order to coordinate the activities of the Center. The Director of ICRANet is the Chair of the Governing Board. Other members will include one member from ICRANet Governing Board, one member from ICRANet Scientific Committee, the Chairman of the State Committee of Science of the Ministry of Education and Science of the Republic of Armenia, the President of the National Academy of Sciences of the Republic of Armenia and one representative from the Ministry of Foreign Affairs of the Republic of Armenia.

2. The Governing Board shall approve:

- short and long-term scientific development programs and reports;
- reports on the Center's annual activity;
- programs on training and retraining the scientific personnel;
- reports on the results of the Center's participation in major scientific programs;
- projects and other forms of collaboration;
- annual program on organization and participation in scientific events, including conferences, workshops, schools for young scientists;
- the structure of the Center;
- Statute of the Center, as well as its amendments;

The Governing Board shall supervise over the execution process of its resolutions, and realize other authorities related to the activities set in paragraph 2 of Article 3 of the Statute.

Article 6

1. The Center shall have a Director, appointed by the Governing Board, which, in the performance of his/her duties, shall:

- act as accredited representative of ICRANet in the Republic of Armenia;

- promote ICRANet's services in the Republic of Armenia;
- develop a strategic framework of cooperation, an annual work program, active partnerships between the Government and ICRANet, academic community, civil society, non-governmental organizations;
- lead and coordinate the overall program and project development and mobilize related financial resources;
- support and monitor the implementation of ICRANet projects and programs, and contribute to the management of all other ICRANet activities in the Republic of Armenia.
- take the responsibility for general supervision of the premises and the equipment of the Center.

2. The Center's Local staff shall be hired in conformity with the legislation of the Republic of Armenia on labor and social security.

Article 7

The Center, its buildings and files shall be inviolable. Properties belonging to ICRANet in the Republic of Armenia shall be exempt from requisition, confiscation or sequestration and expropriation, besides the use for public purposes as defined by the legislation of the Republic of Armenia.

Article 8

1. The Government shall finance customs duties for the import of facilities, equipments, computers and co-finance the articles and publications intended for the Center's scientific and scientific-technical activities. The imported goods shall not be traded in the Republic of Armenia without Government's authorization.

2. The Center will be exempted from custom duties and any other taxes for the import of two vehicles and their spare parts. The vehicles will be registered with special series distributed to the vehicles of diplomatic missions and international organizations accredited in the Republic of Armenia. Fuel and lubricant necessary to those vehicles could be bought or imported without paying duties, in the limits fixed for other international organizations present in the Republic of Armenia.

Article 9

The Center's staff and its Properties shall enjoy immunity of jurisdiction and execution in the territory of the Republic of Armenia, except:

1. in case of express renunciation, through its Director;
2. in case of a labor or social security related suit initiated by an employee or a former employee of the Center;
3. in case of a civil suit initiated by a third party for damages, injury or death resulting from accident caused by a vehicle belonging or used on behalf of the Center;
4. in case of a traffic violation involving a vehicle belonging to the Center or used on its behalf;
5. in case of a countersuit directly related to a court suit initiated by the Center.

Article 10

1. ICRANet will be responsible for all the injuries and prejudices caused by its activities in the Republic of Armenia.
2. ICRANet will take the Government away from any indemnification requests for damages caused to third parties.
3. ICRANet will stipulate an insurance to cover any civil responsibility to third parties, in order to assure itself from possible damages caused while performing its activities.

Article 11

Any dispute concerning the interpretation or the application of the provisions of the present Agreement will be settled through negotiations and consultations between the Parties.

Article 12

The Parties may, by mutual consent, introduce amendments and supplements to this Agreement by separate records. The latter shall come into force in conformity with the procedure set forth by the present Agreement and shall be considered as part of the it.

Article 13

1. The present Agreement shall come into force on the date of receipt of the last written notification of the Parties via diplomatic channels, certifying the fulfillment of the internal procedures necessary for such entry into force.
2. This Agreement is concluded for indefinite period. Any of its Parties may notify the other of its intention to denounce this Agreement. Termination shall become effective six (6) months after the date of receipt of the notification from the other Party.

Done at Rome, on 13 February 2015 in duplicate in Armenian and English languages, both texts being equally authentic. In case of divergences between the texts, the English text shall prevail.

For the Government of the Republic of Armenia

For the International Center for Relativistic Astrophysics Network

Meeting with the Foreign Minister of the Republic of Armenia

On June 10, the Minister of Foreign affairs of the Republic of Armenia Edward Nalbandian hosted Prof. Remo Ruffini, the Director of International Centre for Relativistic Astrophysics (ICRA) Network and the delegation headed by him. The President of the National Academy of Sciences of Armenia, Academician Radik Martirosyan and Ambassadors of the Network's founding countries Italy and Brazil, H.E. Mr. Giovanni Ricciulli and H.E. Edson Marinho Duarte Monteiro also attended the meeting. Welcoming the guests, Minister Nalbandian mentioned, that the membership to the ICRANet proves the importance which Armenia gives to the development of Astrophysics. Expressing gratitude for the reception, Professor Ruffini emphasized that, the geographic location of Armenia and achievements in astrophysics allows to play an important role in the development of Astrophysics in the neighboring countries. During the meeting, the recent activities of ICRANet were discussed.







Meeting with the President of the National Assembly of Armenia



On July 3, 2014 the President of National assembly of the Republic of Armenia Galust Sahakyan met with Prof. Remo Ruffini, Director of the International Centre for Relativistic Astrophysics (ICRA) Network, Massimo Della Valle, Director of Naples Astronomical Observatory, and Narek Sahakyan, Head of ICRANet Armenia, who were participating in the first international meeting of the Relativistic Astrophysics International Centre Network in Yerevan from June 30 to July 4. Welcoming the guests, the NA President highlighted the role of science in the development of our country, considering Armenia's membership to the ICRA Network jointly with Italy, Brazil and Vatican an honour. Emphasizing the conduct of the conference in Yerevan, Galust Sahakyan has noted that the current level of research and studies in the field of Astrophysics in Armenia are based on deep scientific traditions and potential. He highly assessed the role of the ICRA Network Regional Center, which can be of major importance.

Expressing gratitude for the reception, Prof. Remo Ruffini highly appreciated Armenia's membership to the ICRANet and underlined the importance of such meetings, during which numerous discoveries are made and noted several big scientific discoveries had been made during the conference.

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

The Physics of Black Holes dominates some of the most energetic astrophysical phenomena in the Universe. The formation of a Black Hole appears to be related to the emission of a Gamma Ray Burst (GRB), the most energetic transient phenomena in the Universe. The basic mechanism appears to be the creation of electron positron pair plasma occurring by vacuum polarization process around a Kerr-Newman Black Hole by the Heisenberg-Euler-Schwinger mechanism. An effort for reaching such an extreme electromagnetic quantum regime is being currently approached also in MegaJoule Laser Projects in Europe, Russia, USA. In addition a prolonged emission appears to be related to rotating electromagnetic Black Holes in microquasars. The presence of Supermassive Black Holes (SMBHs) of 10^6 - 10^9 solar masses appears to be related to active galactic nuclei, Blazars and Quasars. There is the possibility that, unlike the stellar mass Black Holes, which are formed by the gravitational collapse of baryonic matter, the SMBHs can originate from the gravitational collapse of Dark Matter. This meeting will address both observational/experimental and theoretical aspects. From an observational point of view, results obtained from very high energy observatories from the ground such as HESS, MAGIC, AUGER and from next generation instruments will be reviewed. Similarly will be reviewed the observations from Space Observatories in X and Gamma Rays such as Agile, Fermi, Swift, MAXI and NuStar. The complementary observations in Microwave and infrared bands from Planck mission will be presented. Ongoing progress for experimental facilities to look for coincidence with Gravitational waves detectors and Neutrinos detectors will be also reviewed. From a theoretical point of view attention will be given to progress in understanding quantum and classical phenomena related to the physics of Black Holes and to the process of extraction of the Black Hole Energy.

From June 23 to June 27 a graduate school, on the same topics of the meeting, will take place in the mountains close to Yerevan. In addition to the IRAP-PhD students, other graduate students are welcome.

INTERNATIONAL ORGANIZING COMMITTEE: ARMENIA: Aharonian Felix (co-chair), Avagyan Roland, Chubaryan Edward, Harutyunian Haik (co-chair), Martirosyan Radik (co-chair), Mirzoyan Razmik, Papoyan Aram; **ARGENTINA:** Mirabel Felix, Romero Gustavo; **BRAZIL:** Braga João, Makler Martin, Malheiro Manuel, Novello Mario; **CHINA (BEIJING):** Feng Long Long, Jing Yipeng, Zhang Shuiangnan; **CHINA (TAIPEI):** Chen Pisin; **ESTONIA:** Einasto Jaan; **FRANCE:** Chardonnet Pascal; **GERMANY:** Di Piazza Antonino, Hatsagortsyan Karen, Keitel Christoph H., Kleinert Hagen, Kramer Michael, Kunz Jutta, Lämmerzahl Claus, Nicolai Hermann, Perlick Volker; **INDIA:** Chakrabarti Sandip K.; **ISRAEL:** Piran Tsvi; **ITALY:** Belinski Vladimir, Della Valle Massimo, De Angelis Alessandro, Giommi Paolo, Ruffini Remo (chair), Tavani Marco, Vereshchagin Gregory, Vissani Francesco, Xue Shesheng; **NEW ZEALAND:** Kerr Roy; **RUSSIA:** Bisnovatyi-Kogan Gennady, Bykov Andrei, Chechetkin Valery, Khangulyan Dmitry, Sunyaev Rashid, Titarchuk Lev; **SOUTH KOREA:** Kim Sang Pyo, Kim Sung-Won, Lee Hyun Kyu, Lee Hyung Won, Park Myeong-Gu; **SWEDEN:** Ryde Felix, Rosquist Kjell; **USA:** Arnett David, Everitt Francis, Jantzen Robert, Mathews Grant, Mester John, Williams Robert; **VATICAN STATE:** Funes Jose Gabriel, Gionti Gabriele.

LOCAL ORGANIZING COMMITTEE: Baghdasaryan Daniel, Ghazaryan Satenik, Harutyunyan Arus, Harutyunyan Gohar, Harutyunian Haik (co-chair), Harutyunyan Vahagn, Nersisyan Henrik, Sahakyan Narek (co-chair), Saharian Aram.



For informations and registration see http://www.icranet.org/

photo by Martin Shahbazyan

1st Scientific ICRANet Meeting in Armenia: Black Holes: the largest energy sources in the Universe

In 2014 an international conference in Yerevan was organized in Yerevan with the participation of more than 80 scientists from Italy, Germany, France, Brazil, Korea, Iran and Armenia. The conference opening ceremony was attended by the President of NAS RA, academician R. Martirosyan, Academician-Secretary of the Division of Physics and Astrophysics of NAS RA Y. Chilingaryan, Deputy Minister of Foreign Affairs of RA G. Nazarian, the Ambassador of Italy to the Republic of Armenia G. Ricciulli, the Ambassador of the Federative Republic of Brazil to the Republic of Armenia E. M. D. Monteiro, the Ambassador of Vatican to RA Monsignor Marek Sozinski.







MAGIC collaboration meeting in Yerevan



The MAGIC collaboration meeting was held in Yerevan from 23 to 28 June 2019 with 60 participants from different countries.





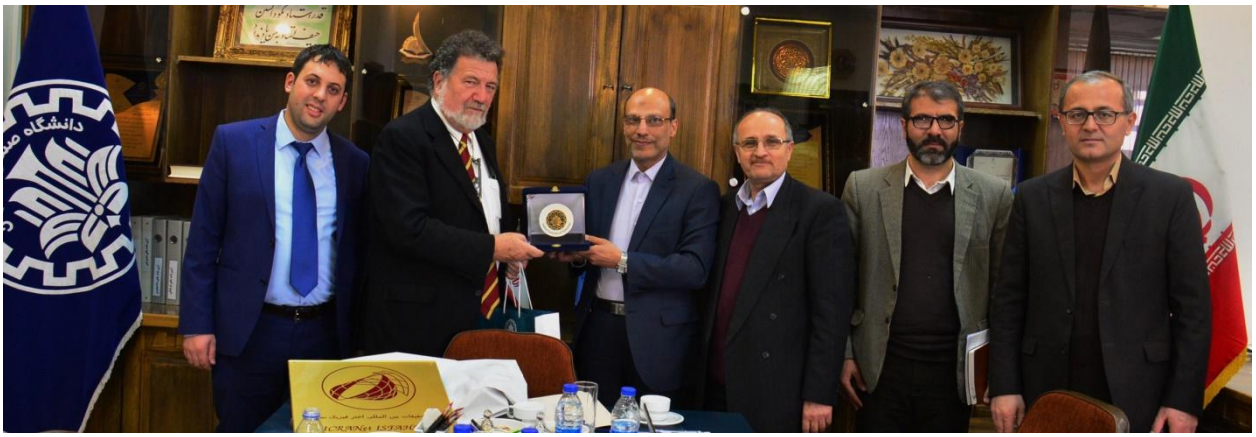


An official reception was held on June 27 in Yerevan, during the MAGIC collaboration meeting. In this occasion, both MAGIC and LST1 scientific highlights and high-tech solutions were presented to the Minister of Education, Science, Culture and Sport Arayik Harutyunyan and to Radik Martirosyan, President of the National Academy of Sciences of Armenia

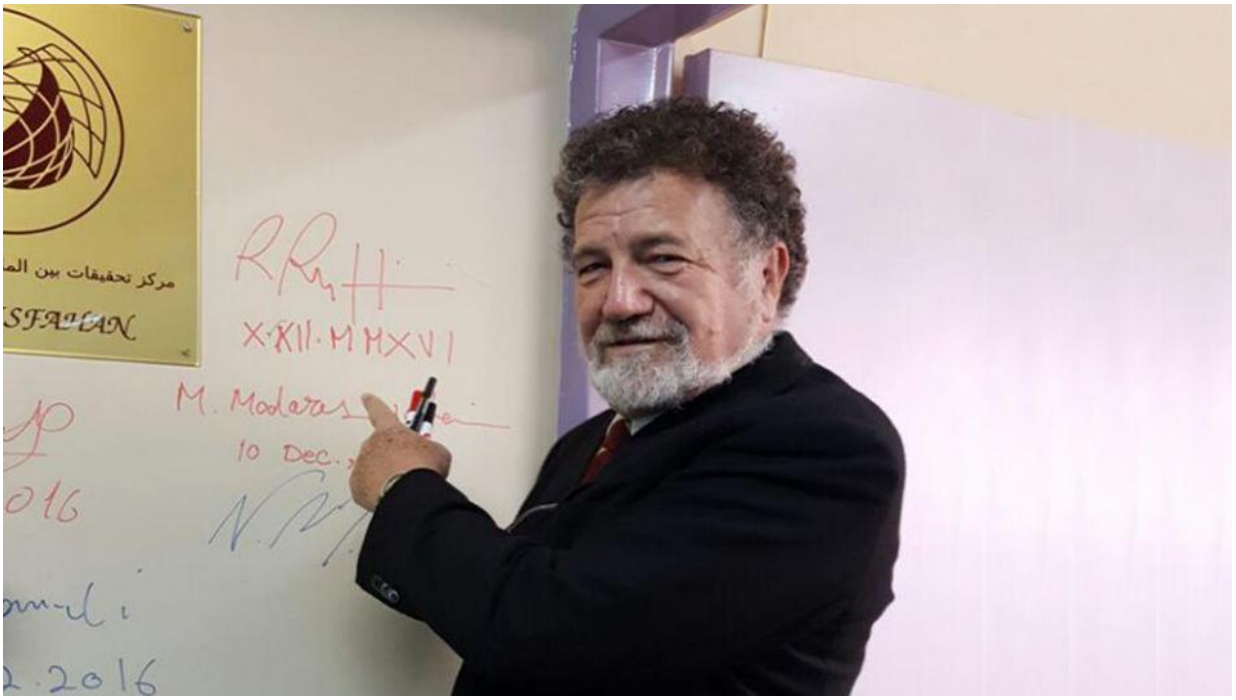




Visit to Iran






X·XII·MMXVI
10 Dec.





Enclosure 3

Activities of the ICRANet Brazil Centres

ICRANet collaboration with Brazil

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

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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.

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Documento assinado digitalmente conforme MP nº 2.200-2 de 24/08/2001, que institui a Infraestrutura de Chaves Públicas Brasileira - ICP-Brasil.

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

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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.

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

DATA ARRIVO 14/08/2014
REGISTRATO ICRANET
PROT. Nº 824

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.

EMBAIXADA DA REPÚBLICA FEDERATIVA DO BRASIL
ROMA

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
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CBPF

DATA ARRIVO ... 01/09/16
REGISTRATO ... ICRANet
PROT. N° ... 1015

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. Jerson Lima Silva

Scientific Director
Prof. Dr. Eliete Bouskela

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)

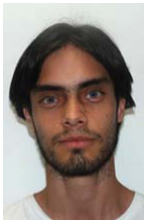
Director
Prof. Dr. Ronald Cintra Shellard

Signatory
Prof. Dr. Ricardo Magnus Osório Galväo

Contact person
Prof. Dr. Ulisses Barres de Almeida

ONGOING AND PREVIOUS ACTIVITIES

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



Eduardo Henrique Silva Bittencourt
CAPES-ICRANet Postdoc at Sapienza University of Rome, from December 2013 to November 2015
Current position: Adjoint 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
Postdoc at Groningen University from October 2017
Current position: Postdoc at Kapteyn institute, Groningen
Publication list, meetings, schools

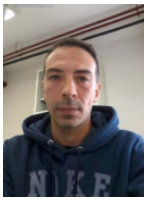


Grasiele Batista dos Santos
CAPES-ICRANet Postdoc at Sapienza University of Rome, from December 2013 to November 2015
Current position: Post-doc fellowship at Universidade Federal de Itajubá (UNIFEI)
Publication list, meetings, schools



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
Current position: Researcher at ICRANet-Minsk, from December 2016
Publication list, meetings, schools

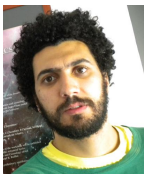


Elena Zaninoni
CAPES-ICRANet Postdoc at Centro Brasileiro de Pesquisas Físicas (CBPF), from April 2014 to August 2015
Current position: Professor of Mathematics and Physics
Publication list, meetings, schools

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 2014
From 12 of April to 12 of May 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



Ronaldo Vieira Lobato
IRAP PhD - Fifteenth Cycle, 2016-2019
Visiting student at ICRANet
From 18 to 21 of July 2015
From 3 of March 2017 to February 2018 (CAPES Sandwich Fellowship)
From 7 to 12 of July 2018
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
· *MG15*, 1-7 July 2018

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 researcher 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
· *MG15*, 1-7 July 2018



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

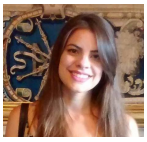


José Domingo Arbañil Vela
Visiting student at ICRANet
From 18 to 21 of July 2015
From 7 to 12 of July 2018
Participation in the:
· *2nd César Lattes Meeting*, 13-22 April 2015
· *MG14*, 12-18 July 2015
· *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20-24 July 2015
· *MG15*, 1-7 July 2018

Geanderson Carvalho



Visiting student at ICRANet
From 18 to 21 of July 2015
From August 2018 to February 2019
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

Montenegr
Lapola

Marcelo Montenegro Lapola
Visiting student at ICRANet
From 7 to 12 of July 2018
Participation in the:
· *MG15*, 1-7 July 2018



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

Pereira
Nunes

Sílvia Pereira Nunes
Visiting student at ICRANet
From 7 to 12 of July 2018
Participation in the:
· *MG15*, 1-7 July 2018



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



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. Rui Vicente Oppermann

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
Current position: Research Associate at Jacobs University, Bremen, Germany
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
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
Thesis Defense: February 28, 2017; title: "Exploring Outflows as Origin of Red-skewed Iron Lines in Compact Objects"
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: Assistant researcher at Instituto de Fisica de La Plata (IFLP) - CONICET and Universidad Nacional de La Plata (UNLP), Argentina
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. Márcia Abrahão Moura

Signatory
Profa. Dra. Sônia Nair Báo

Contact person
Prof. Marcos Maia
Prof. Clovis Maia

ONGOING AND PREVIOUS ACTIVITIES

Visiting Professors from UnB

Prof. Clovis Achy Soares

Prof. Clovis Achy Soares Maia
Visiting Professor at ICRANet
From 7 to 24 of February 2018
From 7 to 14 of July 2018
Participation in the:
· *MG15*, 1-7 July 2018

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. Marcelo Knobel

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: Researcher at Instituto di Fíisica Gleb Wathagin (IFGW/UNICAMP)
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. Ubaldo Cesar Balthazar

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 Camargo Rodrigues 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
· *MG15*, 1-7 July 2018



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

Rector
Profa. Dra. Margareth de Fátima Formiga Melo Diniz

Signatories
Cooperation Agreement
Prof. Dr. Rômulo Soares Polari

Renewal of Cooperation Agreement
Profa. Dra. Margareth de Fátima Formiga Melo Diniz

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
Thesis Defense: February 24, 2017; title: "Geometrical approach to Planck-scale deformations of phase spaces"
Current position: Postdoctoral researcher at Federal University of Paraíba (UFPB), Brazil
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
Thesis Defense: February 13, 2017; title: "A walk through mathematical physics with disformal trasformations and scalar fieald self-force effects on a particle orbiting a Reissner-Nordstrõm black hole"
Current position: Temporary Lecturer at UFPE
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. Dagoberto Alves de Almeida

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

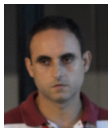


Luis Juracy Rangel Lemos
IRAP PhD - Fifth Cycle, 2006-2009
Current Position: Professor at Universidade Federal do Tocantins (UFT)
Publication list, meetings, schools

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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- 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

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Brandt, Carlos Henrique



Current Position:

Research Associate at Jacobs University, Bremen, Germany

Previous Position:

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

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

Publications:

-) Carlos H. Brandt and Paolo Giommi, in preparation, "The Swift-DeepSky pipeline"

-) P. Giommi, C.H. Brandt, et al., in preparation, "Open Universe for Blazars: 1OUSXB, a high-transparency Swift-XRT results database"

-) Y.-L. Chang, B. Arsioli, P. Giommi, P. Padovani, C. H. Brandt, in preparation, "The 3HSP catalog of Extreme \& High Synchrotron Peaked Blazars"

-) Y.-L. Chang, B. Arsioli, P. Giommi, P. Padovani, C. H. Brandt, in preparation, "The VOU-Blazars tool"

-) 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; IF: 5.185

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, Astrophysics, and Relativistic Field Theories, 2015, July 12-18, Rome, Italy.

XV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories, 2018, July 1-7, Rome, Italy.

Guimarães Carvalho, Gabriel



Current Position:
Temporary lecturer at UFPE

Previous position:
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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), IF: 4.506

-) G.G . Carvalho , I. P. Lobo and E. Bittencourt - "Extended disformal approach in the scenario of rainbow gravity" (Physical Review D 93, 044005), IF: 4.506

-) E. Bittencourt, I. P. Lobo, G.G. Carvalho - "On the disformal invariance of the Dirac equation" (Class. Quantum. Grav. 32, 185016), IF: 2.837

-) Iarley P. Lobo, Gabriel G. Carvalho, "The geometry of null-like disformal transformation" (https://arxiv.org/abs/1707.01784)

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



Current Position:

Postdoctoral researcher at Federal University of Paraíba (UFPB), Brazil.

Previous position:

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Universidade Federal da Paraíba – UFPB

Publications:

-) V. B. Bezerra, I. P. Lobo, H. F. Mota and C. R. Muniz, Landau Levels in the Presence of a Cosmic String in Rainbow Gravity, accepted for publication in Annals of Physics, doi:10.1016/j.aop.2019.01.004

-) I. P. Lobo and M. Ronco, Rainbow-like Black Hole metric from Loop Quantum Gravity, Universe 4, 139 (2018) doi:10.3390/universe4120139.

-) S. Ghaffari, H. Moradpour, J. P. Morais GraÃga, V. B. Bezerra and I. P. Lobo, Tsallis holographic dark energy in the brane cosmology, Phys. Dark Univ. 23, 100246 (2019) doi:10.1016/j.dark.2018.11.007

-) H. Moradpour, S. A. Moosavi, I. P. Lobo, J. P. Morais Graça, A. Jawad and I. G. Salako, Thermodynamic approach to holographic dark energy and the Rényi entropy, Eur. Phys. J. C 78, no. 10, 829 (2018) doi:10.1140/epjc/s10052-018-6309-8.

-) J. P. Morais Graça, I. P. Lobo, V. B. Bezerra & H. Moradpour, Effects of a string cloud on the criticality and efficiency of AdS black holes as heat engines, Eur. Phys. J. C 78, no. 10, 823 (2018) doi:10.1140/epjc/s10052-018-6277-z.

-) S. Ghaffari, H. Moradpour, I. P. Lobo, J. P. Morais Graça & V. B. Bezerra, Tsallis holographic dark energy in the Brans-Dicke cosmology, Eur. Phys. J. C78 706 (2018), doi:10.1140/epjc/s10052-018-6198-x.

-) I. P. Lobo & C. Romero, Experimental constraints on the second clock effect, Phys. Lett. B783 306 (2018), doi:10.1016/j.physletb.2018.07.019.

-) J. P. Morais Graça & I. P. Lobo, Scalar QNMs for higher dimensional black holes surrounded by quintessence in Rastall gravity, Eur. Phys. J. C78 101 (2018), doi:10.1140/epjc/s10052-018-5598-2.

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-) I. P. Lobo, On the physical interpretation of non-metricity in Brans-Dicke gravity, Int. J. G. Methods Mod. Phys. 15 1850138 (2018), doi:10.1142/S0219887818501384.

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-) R. Avalos, I. P. Lobo, T. Sanomiya & C. Romero, On the Cauchy problem for Weyl-geometric scalar-tensor theories of gravity, J. Math. Physics 59 062502 (2018), doi:10.1063/1.5017848.

-) H. Moradpour, J. P. Morais Graça, I. P. Lobo & I. G. Salako, Energy Definition and Dark Energy: A Thermodynamic Analysis, Adv. High Energy Phys. 2018, 7124730 (2018), doi:10.1155/2018/7124730.

-) I. P. Lobo, N. Loret & F. Nettel, Rainbows without unicorns: metric structures in theories with modified dispersion relations, Eur. Phys. J. C77 451 (2017), doi:10.1140/epjc/s10052-017-5017-0.

-) I. P. Lobo, N. Loret & F. Nettel, Investigation on Finsler geometry as a generalization to curved spacetime of Planck-scale-deformed relativity in the de Sitter case, Phys. Rev. D95 046015 (2017), doi:10.1103/PhysRevD.95.046015.

-) G. G. Carvalho, I. P. Lobo & E. Bittencourt, Extended disformal approach in the scenario of Rainbow Gravity, Phys. Rev. D93 044005 (2016), doi:10.1103/PhysRevD.93.044005.

-) E. Bittencourt, I. P. Lobo & G. G. Carvalho, On the disformal invariance of the Dirac equation, Class. Quantum Grav. 32 185016 (2015), doi:10.1088/0264-9381/32/18/185016.

-) I. P. Lobo, A. B. Barreto & C.Romero, Space-time singularities in Weyl manifolds, Eur. Phys. J. C75 448 (2015), doi:10.1140/epjc/s10052-015-3671-7.

-) I. P. Lobo & G. Palmisano, Geometric interpretation of Planck-scale-deformed co-products, Int. J. Mod. Phys. Conf. Ser. 41 1660126 (2016), doi:10.1142/S2010194516601265 (Proceedings)

-) I. P. Lobo & G. Palmisano, Geometric picture of DSR-relativistic theories with de Sitter and anti-de Sitter momentum spaces. In: Proceedings of the MG14 Meeting on General Relativity, 2017, University of Rome La Sapienza. The Fourteenth Marcel Grossmann Meeting. p. 4005, doi:10.1142/9789813226609_0533

-) G. G. Carvalho, E. Bittencourt & I. P. Lobo, On the disformal invariance of the massless Dirac equation. In: Proceedings of the MG14 Meeting on General Relativity, 2017, University of Rome La Sapienza. The Fourteenth Marcel Grossmann Meeting. p. 2648, doi:10.1142/9789813226609_0322

-) I. P. Lobo & G. G. Carvalho, The geometry of null-like disformal transformations, arXiv:1707.01784 (preprint)

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



Current Position:
Post-doc at Kapteyn institute at Groningen

Previous 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), IF: 5.185

-) 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), IF: 5.185

-) 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); IF: 4.952

-) 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), IF: 4.952

-) 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), IF: 5.909

-) 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), IF: 5.909

-) 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), IF: 11.257

-) 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), IF: 5.634

-) 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), IF: 4.952

-) 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), IF: 5.909

-) 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), IF: 5.909

-) 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), IF: 5.185

-) 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), IF: 5.185

-) 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), IF: 5.909

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;

Presentation: A Highly Precise Strong Lensing Model of the Galaxy Cluster RXJ2248, (Abell 1063) and Prospects for Cosmography, Young Researcher Meeting (contribution) — L'Aquila, Italy (October/2015);

Presentation: High precision strong lens modelling of CLASH-VLT/FF clusters. Dark Cosmology Centre (invited) — Copenhagen, Denmark (May/2015);

Presentation: High precision strong lensing modelling of CLASH-VLT/FF clusters. Science from the Frontier Fields (contribution) - Sexten, Italy (February/2015).

Batista dos Santos, Grasiele



Current Position:
Post-doc fellowship at UNIFEI

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:

-) Bittencourt, Eduardo; Klippert, Renato; Santos, Grasiele B. *Dynamical wormhole definitions confronted*. Classical and Quantum Gravity, v. 35, p. 155009, 2018.

-) Amelino-Camelia, Giovanni; Brighenti, Francesco; Gubitosi, Giulia; Santos, Grasiele. *Thermal dimension of quantum spacetime*. Physics Letters. B (Print), v. 767, p. 48-52, 2017.

-) 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, IF: 5.634

-) 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, IF: 5.634 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, IF: 1.668 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.

Rencontres du Vietnam. Scalar Perturbations in a Quasi-Friedmann Model With a Non-Null Weyl Tensor. 2015.

"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.

Third Argentinian-Brazilian Meeting on Gravitation, Astrophysics and Cosmology.Thermal dimension of quantum spacetime. 2016.

First GIFT Symposium, dynamical wormhole definitions confronted. 2017.

Camargo Rodrigues de Lima, Rafael



Current Position:
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Capes Postdoctoral Student
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Outcome Institution:
Universidade Federal de Santa Catarina – UFSC

Publications:

-) Pereira, Jonas P.; Coelho, Jaziel G.; de Lima, Rafael C. R., "Born-Infeld magnetars: larger than classical toroidal magnetic fields and implications for gravitational-wave astronomy", The European Physical Journal C, Volume 78, Issue 5, article id. 361, 2018.

-) Cáceres, D. L.; de Carvalho, S. M.; Coelho, J. G.; de Lima, R. C. R.; Rueda, Jorge A., "Thermal X-ray emission from massive, fast rotating, highly magnetized white dwarfs", Monthly Notices of the Royal Astronomical Society, Volume 465, Issue 4, 2017.

-) Coelho, Jaziel G.; Cáceres, D. L.; de Lima, R. C. R.; Malheiro, M.; Rueda, J. A.; Ruffini, R., "The rotation-powered nature of some soft gamma-ray repeaters and anomalous X-ray pulsars", Astronomy & Astrophysics, Volume 599, id.A87, 2017.

-) de Lima, Rafael C. R.; Coelho, Jaziel G.; Malheiro, Manuel; Rueda, Jorge A.; Ruffini, Remo, "SGRs/AXPs as Rotation-Powered Neutron Stars", International Journal of Modern Physics: Conference Series, Volume 45, id. 1760030, 2017.

Meetings, conferences, seminars, schools:
Third Bego Rencontres -IRAP Ph.D. Erasmus Mundus school - September 8th-19th, 2014 Nice

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)

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
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Outcome Institution:

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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, IF: 5.909

-) 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; IF: 4.506

-) 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, IF: 4.952

-) 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, IF: 5.185

-) 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, IF: 5.909

-) 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, IF: 5.634

-) Lobato, Ronaldo V. ; Malheiro, Manuel ; Coelho, Jaziel G. . Magnetars and white dwarf pulsars. International Journal of Modern Physics D, v. 25, p. 1641025, 2016, IF: 1.963

-) 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, IF: 4.912

-) 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, IF: 5.909

-) 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, IF: 5.185

-) Pereira, Jonas P.; Coelho, Jaziel G.; de Lima, Rafael C. R., "Born-Infeld magnetars: larger than classical toroidal magnetic fields and implications for gravitational-wave astronomy", The European Physical Journal C, Volume 78, Issue 5, article id. 361, 2018.

-) de Araujo, José C. N.; Coelho, Jaziel G.; Costa, Cesar A., "Gravitational waves from pulsars in the context of magnetic ellipticity", The European Physical Journal C, Volume 77, Issue 5, article id.350, 2017.

-) Lobato, Ronaldo V.; Coelho, Jaziel G.; Malheiro, M., "Ultra-high energy cosmic rays from white dwarf pulsars and the Hillas criterion", Journal of Physics: Conference Series, Volume 861, Issue 1, article id. 012005, 2017.

-) Malheiro, M.; Coelho, Jaziel G.; Cáceres, D. L.; de Lima, R. C. R.; Lobato, R. V.; Rueda, J. A.; Ruffini, R., "Possible rotation-power nature of SGRs and AXPs", Journal of Physics: Conference Series, Volume 861, Issue 1, article id. 012003, 2017.

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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



Current Position:
FAPERJ postdoctoral fellowship at CBPF

Previous position:
- Postdoctoral student at CBPF
- Capes Postdoctoral Student at University of Rome "Sapienza" and International Center for Relativistic Astrophysics Network – ICRANet

Outcome Institution:
IRAP PhD – Erasmus Mundus – First Cycle, 2010-2013
University of Rome "Sapienza" and International Center for Relativistic Astrophysics Network – ICRANet

Publications:

-) Barres de Almeida, Ulisses; Fraga, Bernardo; Giommi, Paolo; Sahakyan, Narek; Gasparyan, Sargis; Brandt, Carlos. Long-Term Multi-Band and Polarimetric View of Mkn 421: Motivations for an Integrated Open-Data Platform for Blazar Optical Polarimetry, Galaxies, vol. 5, issue 4, p. 90 (2017). http://adsabs.harvard.edu/abs/2017Galax...5...90B

-) Fraga, Bernardo M. O.; Barres de Almeida, Ulisses; Gasparyan, Sargis; Giommi, Paolo; Sahakyan, Narek. Time-Evolving SED of MKN421: a multi-band view and polarimetric signatures. Frontiers in Astronomy and Space Sciences, Volume 5, id.1 (2018). http://adsabs.harvard.edu/abs/2018FrASS...5....1F

-) Arsioli, B.; Barres de Almeida, U.; Prandini, E.; Fraga, B.; Foffano, L. Extreme- and high-synchrotron-peaked blazars at the limit of Fermi-LAT detectability: the γ-ray spectrum of 1BIGB sources, Monthly Notices of the Royal Astronomical Society, Volume 480, Issue 2, p.2165-2177 (2018). http://adsabs.harvard.edu/abs/2018MNRAS.480.2165A

-) 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, IF: 5.909 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, IF: 0.445

-) 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, IF: 0.445

-) 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, IF: 1.963

-) 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, Journal of Cosmology and Astroparticle Physics, Issue 04, 2010, IF: 5.634

-) 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, IF: 1.668

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.

-) Quasar at all cosmic epochs, April 2-7 2017, Padova, Italy. Time-Evolving SED of MKN421: a multi-band view and polarimetric signatures.

-) CTA Physics Working Group meeting, April 18-20 2018, Barcelona, Spain. Analysis of DC-1 Extragalactic Data.

-) Black Holes as Cosmic Batteries, September 12-15 2018, Foz do Iguaçu, Brazil. Invited Talk: MAGIC and the very high energy gamma-ray sky

Silva Bittencourt, Eduardo Henrique

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Previous Position:
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Capes Postdoctoral Student International Center for Relativistic Astrophysics Network – ICRANet and University of Rome "Sapienza"

Outcome Institution:
Centro Brasileiro de Pesquisas Físicas – CBPF

Publications:

-) Bittencourt, Eduardo; Klippert, Renato ; Santos, Grasiele B. *Dynamical wormhole definitions confronted*. Classical and Quantum Gravity, v. 35, p. 155009, 2018.

-) Bittencourt, E.; De Lorenci, V.A. ; Klippert, R. ; Ruiz, L.S. *Effective acoustic geometry for relativistic viscous fluids*. Physical Review D, v. 98, p. 064042, 2018.

-) Bittencourt, Eduardo; Gomes, Leandro G ; Klippert, Renato. *Bianchi-I cosmology from causal thermodynamics*. Classical and Quantum Gravity (Print), v. 34, p. 045010, 2017.

-) Bittencourt, E.; Camargo, G. H. S. ; De Lorenci, ìV. A. ; Klippert, R. *Controlled opacity in a class of nonlinear dielectric media*. Physical Review A, v. 95, p. 033826, 2017.

-) 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, IF: 2.837

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-) 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. http://link.springer.com/article/10.1007/s13538-015-0362-7, IF: 1.042

Meetings, conferences, seminars, schools:

2012 – Scientific visit to ICRANet

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

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

GR100 in Rio. Analogue models of gravity: now and then. 2015

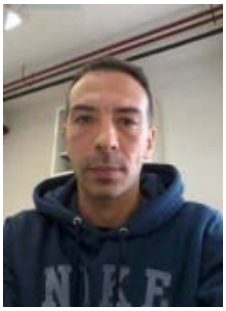
Einstein's Legacy. 2015.

6th Young Researcher Meeting. 2015.

GrACo III - Third Argentinian-Brazilian Meeting.The many facets of disformal transformations. 2016

XVI Brazilian School of Cosmology and Gravitation. Wormhole definitions revisited. 2017.

Belvedere, Riccardo



Current Position:
FAPERJ postdoctoral fellowship at CBPF

Previous Position:
Capes Postdoctoral Student
ICRANet - Rio de Janeiro 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), IF: 1.258
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, IF: 5.909

-) 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.

6th Young Researcher Meeting. 2015

Einstein's Legacy. 2015

GR100 in Rio. Analogue models of gravity: now and then. 2015

Third Argentinian-Brazilian Meeting.The many facets of disformal transformations. 2016.

GrACo III - Third Argentinian-Brazilian Meeting.The many facets of disformal transformations. 2016

XVI Brazilian School of Cosmology and Gravitation. Wormhole definitions revisited. 2017

Martins de Carvalho, Sheyse



Current Position:
Professor at UFT

Previous Position:
Capes Postdoctoral Student
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IRAP PhD – Erasmus Mundus – First Cycle, 2010-2013

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), IF: 3.146
http://adsabs.harvard.edu/abs/2014PhRvC..90e5804D

-) Cáceres, D. L.; de Carvalho, S. M.; Coelho, J. G.; de Lima, R. C. R.; Rueda, Jorge A., "Thermal X-ray emission from massive, fast rotating, highly magnetized white dwarfs", Monthly Notices of the Royal Astronomical Society, Volume 465, Issue 4, 2017.

-) de Carvalho, S. M.; Negreiros, R.; Orsaria, M.; Contrera, G. A.; Weber, F.; Spinella, W., "Thermal evolution of hybrid stars within the framework of a nonlocal Nambu-Jona-Lasinio model", Physical Review C, Volume 92, Issue 3, id.035810, 2015.

-) S. M. Carvalho, M. Rotondo, Jorge A. Rueda, R. Ruffini; "Relativistic Feynman-Metropolis-Teller treatment at finite temperatures"; Physical Review C 89, 015801 (2014), IF: 3.146
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, IF: 0.445

-) 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



Current position:

Assistant researcher at Instituto de Fisica de La Plata (IFLP)
- CONICET and Universidad Nacional de La Plata (UNLP),
Argentina

Previous position:

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Agenzia Spaziale Italiana, ASI (ASDC), Rome, Italy
Capes Postdoctoral Student at Instituto Nacional de Pesquisas Espaciais – INPE Sao Jose dos Campos, Brazil

Outcome Institution:

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), IF: 5.909
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, IF: 1.963

-) 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, IF: 5.909

-) 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, IF: 0.805
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", Journal JHEAP 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), IF: 5.185 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, 565, L10 (2014). http://adsabs.harvard.edu/abs/2014A%26A...565L..10R, IF: 5.185

-) 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, IF: 5.909

- 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, IF: 5.909

-) 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

-) 2016: "MIRAX sensitivity for Gamma Ray Bursts", J.R. Sacahui, A.V. Penacchioni, J. Braga, M.A. Castro, F. D'Amico, Journal of High Energy Astrophysics (JHEAP), Volumes 9-10, Pages 16-24. DOI: 10.1016/j.jheap.2015.12.002. http://www.sciencedirect.com/science/article/pii/S2214404815000671

-) 2016: "Background and imaging simulations for the hard X-ray camera of the MIRAX mission", Castro, M.; Braga, J.; Penacchioni, A.; D'Amico, F.; Sacahui, R., Monthly Notices of the Royal Astronomical Society (MNRAS), Volume 459, Pages 3917-3928., DOI: 10.1093/mnras/stw743. https://academic.oup.com/mnras/article-abstract/459/4/3917/2623972/Backgroundand-imaging-simulations-for-the-hard-X?redirectedFrom=fulltext

-) 2016: "CALET Upper Limits on X-Ray and Gamma-Ray Counterparts of GW151226", Adriani, O.; [...] Penacchioni, A.; [...] and the CALET collaboration, ApJ, Volume 829, Issue 1, article id. L20, 5 pp., DOI: 10.3847/2041-8205/829/1/L20. http://iopscience.iop.org/article/10.3847/2041-8205/829/1/L20/meta

-) 2016: "GRB 090510: A Genuine Short GRB from a Binary Neutron Star Coalescing into a Kerr-Newman Black Hole", Ruffini, R.; Muccino, M.; Aimuratov, Y.; Bianco, C. L.; Cherubini, C.; Enderli, M.; Kovacevic, M.; Moradi, R.; Penacchioni, A. V.; Pisani, G. B.; Rueda, J. A.; Wang, Y., ApJ, Volume 831,

Issue 2, article id. 178, 17 pp., DOI: 10.3847/0004-637X/831/2/178. http://iopscience.iop.org/article/10.3847/0004-637X/831/2/178/meta

2016: "On the Universal Late X-Ray Emission of Binary-driven Hypernovae and Its Possible Collimation", 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., ApJ, Volume 833, Issue 2, article id. 159, 12 pp., DOI: 10.3847/1538-4357/833/2/159. http://iopscience.iop.org/article/10.3847/1538-4357/833/2/159/meta

2016: "Energy calibration of CALET onboard the International Space Station", Asaoka,Y.;[...];Penacchioni,A.V;[...] andtheCALETcollaboration,Astroparticle Physics, Volume 91, p. 1-10., DOI: 10.1016/j.astropartphys.2017.03.002. http://www.sciencedirect.com/science/article/pii/S0927650517300786

2017: "GRB 081024B and GRB 140402A: Two Additional Short GRBs from Binary Neutron Star Mergers", Aimuratov, Y.; Ruffini, R.; Muccino, M.; Bianco, C. L.; Penacchioni, A. V.; Pisani, G. B.; Primorac, D.; Rueda, J. A.; Wang, Y.,
The AstrophysicalJournal,Volume844,Issue1,articleid. 83,15pp., DOI:10.3847/15384357/aa7a9f. http://iopscience.iop.org/article/10.3847/1538-4357/aa7a9f/pdf

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

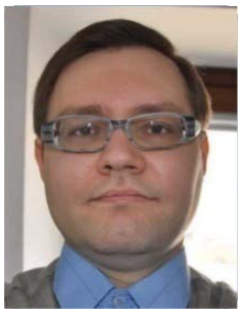
XIV Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, 2015, July 12-18, Rome, Italy. - Oral presentation: Telescope performance and image simulations of the coded-mask balloon-borne experiment protoMIRAX.

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

- 2015 High Energy Phenomena in Relativistic Outflows (HEPRO) V, La Plata, Argentina, October, 5th - 8th, Oral presentation: Estimating GRB detection rate with MIRAX.

- 2017 São Paulo School of Advanced Science on High Energy and Plasma Astrophysics in the CTA Era (SPSAS-HighAstro), São Paulo, Brazil, May, 21st-31st, Participation as a student.

Ivan Siutsou



Current Position:
Researcher at ICRANet-Minsk

Previous 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., IF: 0.445
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, IF: 0.805
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), IF: 0.909
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), IF: 0.445
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



Current position:
Professor of Mathematics and Physics

Previous 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), IF: 5.185

-) 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, IF: 5.909

-) "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), IF: 4.952
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, IF: 5.185

-) Zaninoni, E.; Bernardini, M. G.; Margutti, R.; Amati, L., "Update on the GRB universal scaling EX,iso-Eγ,iso-Epk with 10 years of Swift data", 2016, MNRAS, 455, 1375, http://adsabs.harvard.edu/abs/2016MNRAS.455.1375Z

-) 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

-) "Colour variations in the GRB 120327A afterglow", Melandri, A.; Covino, S.; Zaninoni, E.; et. al. 2017, A&A, 607, A29 http://adsabs.harvard.edu/abs/2017A%26A...607A..29M

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, IF: 4.952

-) 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), IF: 5.185
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), IF: 4.952
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, IF: 4.952

-) Giommi, P.; Padovani, P.; "A simplified view of blazars contribution to the X-ray and gamma-ray extragalactic backgrounds"; MNRAS 450, 2404 (2015), IF: 4.952
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

Publications:

-) Gómez, L. Gabriel; Rueda, J. A., "Dark matter dynamical friction versus gravitational wave emission in the evolution of compact-star binaries", Physical Review D 96, 063001, 2017.

-) Cipolletta, Federico; Cherubini, Christian; Filippi, Simonetta; Rueda, Jorge A.; Ruffini, Remo, "Equilibrium Configurations of Classical Polytropic Stars with a Multi-Parametric Differential Rotation Law: A Numerical Analysis",Communications in Computational Physics 22, 863, 2017.

-) Cipolletta, F.; Cherubini, C.; Filippi, S.; Rueda, J. A.; Ruffini, R., "Last stable orbit around rapidly rotating neutron stars", Physical Review D 96, 024046, 2017.

-) Coelho, Jaziel G.; Cáceres, D. L.; de Lima, R. C. R.; Malheiro, M.; Rueda, J. A.; Ruffini, R., "The rotation-powered nature of some soft gamma-ray repeaters and anomalous X-ray pulsars", A&A 599, A87, 2017.

-) Cáceres, D. L.; de Carvalho, S. M.; Coelho, J. G.; de Lima, R. C. R.; Rueda, Jorge A., "Thermal X-ray emission from massive, fast rotating, highly magnetized white dwarfs", MNRAS 465, 4434, 2017.

-) Rueda, Jorge A.; Aimuratov, Y.; de Almeida, U. Barres; Becerra, L.; Bianco, C. L.; Cherubini, C.; Filippi, S.; Karlica, M.; Kovacevic, M.; Fuksman, J. D. Melon; Moradi, R.; Muccino, M.; Penacchioni, A. V.; Pisani, G. B.; Primorac, D.; Ruffini, R.; Sahakyan, N.; Shakeri, S.; Wang, Y., "The binary systems associated with short and long gamma-ray bursts and their detectability", IJMPD 26, 1730016, 2017.

-) 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, IF: 5.909

-) 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, IF: 5.909

-) 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, IF: 1.699

-) 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, IF: 0.956

-) 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, IF: 5.909

-) 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, IF: 0.956

-) 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 IF: 0.805

-) 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, IF: 0.805

-) L. Becerra, F. Cipolletta, C. L. Fryer, J. A. Rueda, R. Ruffini, "Angular Momentum Role in the Hypercritical Accretion of-Driven Binary Hypernova e", ApJ 812, 100 (2015). http://adsabs.harvard.edu/abs/2015ApJ...812..100B, IF: 5.909

-) 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, IF: 7.645

-) 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, IF: 5.909

-) 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, IF: 5.909

-) 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, IF: 4.506

-) J. P. Pereira and J. A. Rueda, “Radial Stability in Stratified Stars,” ApJ 801, 19 (2015), IF: 5.909
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), IF: 3.146
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, IF: 4.506

-) 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), IF: 3.718
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), IF: 5.909
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), IF: 0.909
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, IF: 5.909

-) 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), IF: 1.258
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 565, L10 (2014). http://adsabs.harvard.edu/abs/2014A%26A...565L..10R, IF: 5.185

-) S. M. Carvalho, M. Rotondo, Jorge A. Rueda, R. Ruffini; "Relativistic Feynman-Metropolis-Teller treatment at finite temperatures"; Physical Review C 89, 015801 (2014), IF: 3.146
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, IF: 0.956

-) 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, IF: 0.956

-) 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, IF: 0.445

-) 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), IF: 0.445
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.

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Institution:
Universidade Federal do Espírito Santo
Centro de Ciências Exatas
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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*

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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, IF: 3.60
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

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From January 7, 2015 to February 15, 2015

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Centro de Estudos Gerais
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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, IF: 5.909

-) 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), IF: 3.146
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

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From April 3, 2014 to May 3, 2014
From October 15, 2014 to November 15, 2014

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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, IF: 1.310

-) 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

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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, IF: 0.956

-) 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, IF: 0.956

-) 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

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

ICRANet – Brazil outreach activities

COSMOLOGY AND GRAVITATION

Xth Brazilian School of Cosmology and Gravitation
25th Anniversary (1977-2002)

Mangaratiba, Rio de Janeiro, Brazil
29 July - 9 August 2002

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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,‡]
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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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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.

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COSMOLOGY AND GRAVITATION

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International Center for Relativistic Astrophysics - (ICRA)

AMERICAN INSTITUTE OF PHYSICS

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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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COSMOLOGY AND GRAVITATION

XII[th] Brazilian School of Cosmology and Gravitation

Mangaratiba, Rio de Janeiro, Brazil 10 – 23 September 2006

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Fianciadora de Estudos e Projetos - (FINEP)
International Center for Relativistic Astrophysics - (ICRA-Italy)

AMERICAN INSTITUTE OF PHYSICS

Melville, New York, 2007
AIP CONFERENCE PROCEEDINGS ■ VOLUME 910



ICRA Brasil

XII Brazilian School of Cosmology and Gravitation

September 10th-23rd, 2006
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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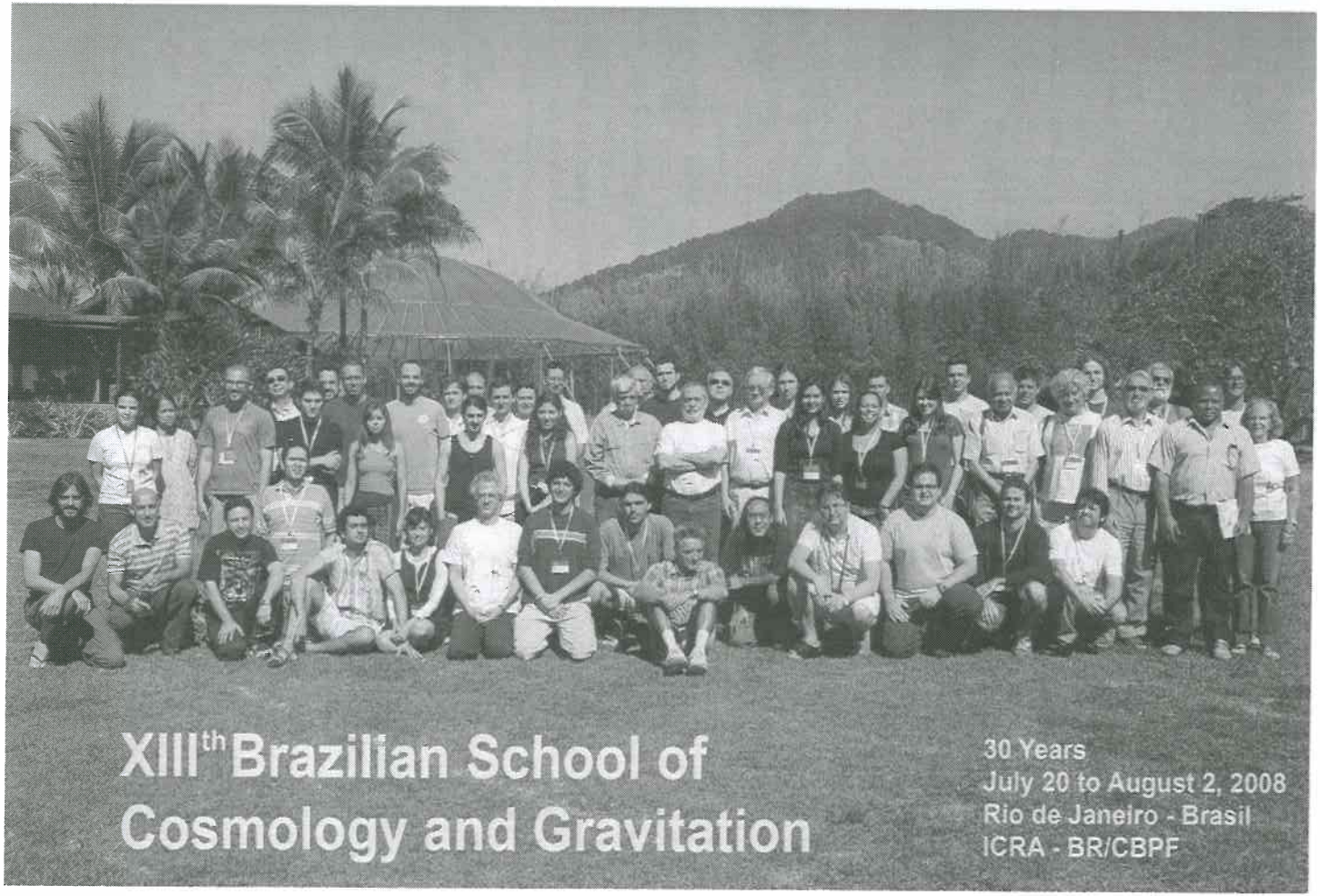
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The Blackholic energy and the canonical Gamma-Ray Burst IV: the "long", " genuine short" and "fake - disguised short" GRBs[1]

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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

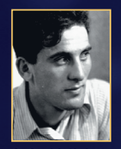
The conference entitled The Sun, the Stars, the Universe and General Relativity was held in Fortaleza, Brazil in May 2009 to celebrate three major events which occurred in Brazil and have fundamentally influenced scientific knowledge and development throughout the world.

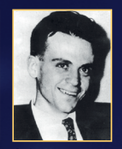
1. The mission at Sobral to observe the Solar Eclipse of May 29, 1919 which according to Arthur Eddington, gave the first evidence for the observation of the bending of star light by the gravitational field of the Sun as predicted by Albert Einstein.

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.

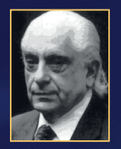
3.The work on gravitational collapse by George Gamow and Mario Schoenberg on the URCA process, conceived at the "Cassino da URCA".

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.


G. Occhialini


C. Lattes


G. Gamow

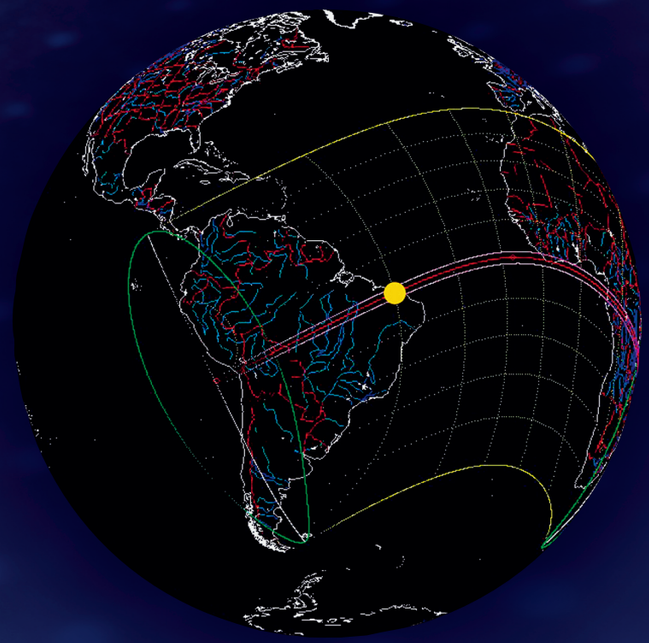

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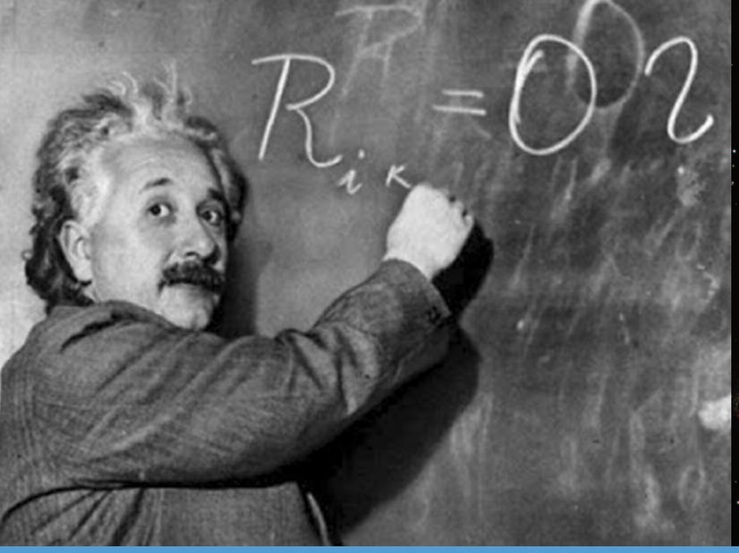
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The Sun, the Stars, the Universe and General Relativity

Proceedings of Sobral 2009





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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.

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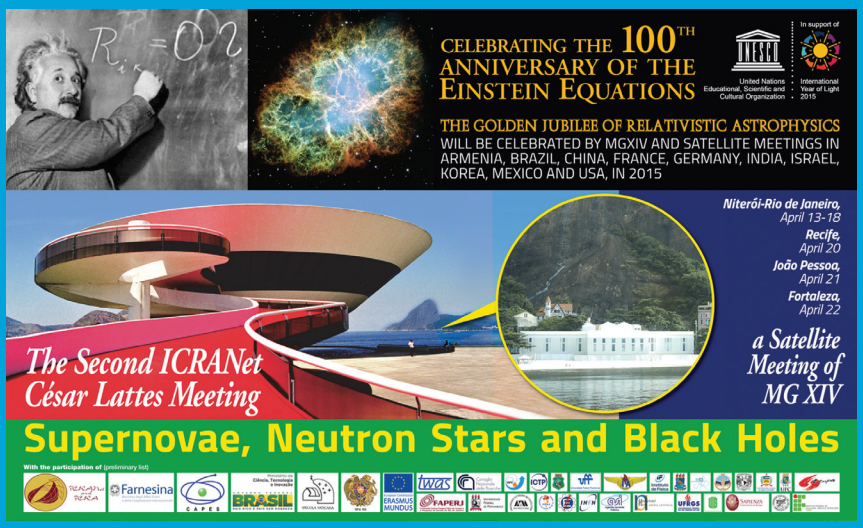
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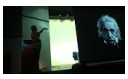
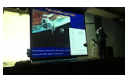
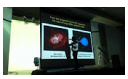
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1		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 2 di ICRANet	4:01
2		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 1 di ICRANet	4:53
3		100 Anos da Relatividade Geral - Prof. Remo Ruffini - 3 di ICRANet	11:01
4		100 Anos da Relatividade 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



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- **INDIA**: Chakrabarti, S.K.,Iyer, B., Padmanabhan, T., Souradeep, T.
- **IRAN**: Mansouri, R., Mashhoon, B., Sobouti, Y.
- **IRELAND**: O'Murchada, N., Pe'er, A.
- **ISRAEL**: Milgrom, M., Nakar, E., Piran, T.
- **ITALY**: Belinski, V.A., Bianchi, M., Bianco, C.L., Cherubini, C., Della Valle, M., Falciano, S., Filippi, S., Menotti, P., Merafina, M., Pani, P., Ricci, F., Treves, A., Vereshchagin, G.V., Vitale, S., Xue, S.-S. • **JAPAN**: Fujimoto, M.-K., Makishima, K., Nakamura, T., Sato, K., Shibata, M.
- **KAZAKHSTAN**: Abishev, M., Aimuratov, Y., Boshkayev, K., Mychelkin, E.G., Spitaleri, C.
- **KOREA (PYEONGYANG)**: Kim, J.S.
- **KOREA (SEOUL)**: Kim, S.P., Kim, S.-W., Lee, H.K., Lee, H.-W., van Putten, M.• **KYRGYZSTAN**: Gurovich, V.Ts.
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- **NEW ZEALAND**: Visser, M., Wiltshire, D.
- **NORWAY**: Elgarøy, Ø., Fonseca Mota, D., Knutsen, H.
- **POLAND**: Belczyński, K., Demianski, M., Lewandowski, J., Nurowski, P., Sokolowski, L. • **PORTUGAL**: Costa, M., da Silva, A., Lemos, J.P.S., Lobo, F., Moniz, P., Silva, L.O.
- **ROMANIA**: Visinescu, M. • **RUSSIA**: Aksenov, A.G., Arkhangelskaja, I., Bisnovatyi-Kogan, G.S., Blinnikov, S.I., Chechetikin, V.M., Cherepaschuk, A.M., Khriplovich, I.B., Lipunov, V.M., Lukash, V.N., Novikov, I.D., Rudenko, V.N., Starobinsky, A.A.
- **SERBIA**: Djordjevic, G., Jovanovic, P., Knežević, Z., Pankov-Hzvojevic, M., Popovic, L., Prodanovic, T., M., Sijacki, D., Simic, S. • **SLOVAKIA**: Balek, V.
- **SLOVENIA**: Cadez, A., Gomboc, A., Zavrtanik, D.
- **SOUTH AFRICA**: Colafrancesco, S., Larena, J., Maharaj, S.,
- **SPAIN**: Elizalde, E., Ibanez, J., Perez Mercader, J., Verdaguer, E. • **SWEDEN**: Abramowicz, M.A., Marklund, M., Ryde, F. • **SWITZERLAND**: Durrer, R., Jetzer, P.
- **TURKEY**: Aliev, A., Gurses, M. • **UKRAINE**: Novosyadlyj, B., Zaslavski, O.B., Zhuk, A. • **UK**: Cruise, A.M., Frenk, C.S., Green, M., Mavromatos, N., Perry, M., Willingale, R.
- **USA**: Abel, T., Ashtekar, A., Bardeen, J.,Carlstrom, J., Cornish, N., Dermer, C., Fan, X., Flanagan, E., Fraschetti, F., Fryer, C., Incera, V., Jantzen, R.T. (**Chairperson**), Kolb, R., Laguna, P., Longair, M., Lousto, C., Madau, P., Mathews, G., Matzner, R., Melia, F., Mester, J., Michelson, P., Nordtvedt, K., Parker, L., Pretorius, F., Pullin, J., Shapiro, I., Shapiro, S., Shoemaker, D., Smoot, G., Stiavelli, M., Teukolsky, S., van Nieuwenhuizen, P., Zhang, B.
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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), Stockholm (2012) and Rome (2015). Interested scientists should address a member from any one of the organizing committees or the conference secretariat.

website : http://www.icra.it/mg/mg15
email : mg15@icra.it

" SAPIENZA" THE UNIVERSITY OF ROME

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

MG15, Rome, July 1 - 7, 2018
Participants from Brazilian institutions

1.	Barres De Almeida, Ulisses	Centro Brasileiro de Pesquisas Físicas (CBPF)
2.	Belvedere, Riccardo	Centro Brasileiro de Pesquisas Físicas (CBPF)
3.	Chinaglia, Mariana	Instituto Tecnológico de Aeronáutica
4.	Crispino, Luis	Universidade Federal do Pará
5.	De Araujo, Jose C N	INPE
6.	Lapola, Marcelo	ITA
7.	Loureiro Giacchini, Breno	Centro Brasileiro de Pesquisas Físicas (CBPF)
8.	Maia, Clovis	Universidade de Brasília
9.	Malheiro, Manuel	ITA
10.	Medeiros Gomes Da Silveira, Vinicius	Universidade Federal do Rio Grande do Sul
11.	Menezes, Débora	Universidade Federal de Santa Catarina
12.	Moraes, Pedro	ITA
13.	Nunes, Sílvia	ITA
14.	Quispe Aruquipa, David	Centro Brasileiro de Pesquisas Físicas (CBPF)
15.	Soares, Ivano Damiao	Centro Brasileiro de Pesquisas Físicas (CBPF)
16.	Vieira Lobato, Ronaldo	ITA
17.	Villanova Borges, Sarah	ITA

The Brazilian Science Data Center (BSDC)

The ICRANet Science Data Center, Blazars studies and Open Universe Activities within ICRANet

1 Topics

- Consolidation of the technical infrastructure for the ICRANet Science Data Center in Pescara, currently implemented at http://vo.bsdc.icranet.org/
- Development of the second version of high-transparency data analysis software: the VOU-Blazars tool V2.0, Swift_deepsky and Swift_xrtproc pipelines, including the corresponding Docker versions.
- Contribution to the project "Open Universe for blazars" currently hosted at this temporary site https://sites.google.com/view/ou4blazars
- Implementation of VO + Web interfaces to catalogs of astronomical sources published as part of ICRANet research.
- Collaboration with ICRANet-Armenia for the installation of software suitable for the generation of Fermi adaptive bin γ-ray light curves and Swift UVOT data analysis and construction of a database of blazar UV, X-ray and γ-ray light curves to be interfaced to Open Universe systems.
- Implementation, adaptation and testing of software for cross-correlation analysis of time series and light curves.
- Search for possible spatial and temporal correlations between IBL and HBL 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-XRT spectra and X-ray light curves, Swift-UVOT photometric data and lightcurves)

2 Participants

2.1 ICRANet participants

- Paolo Giommi
- Narek Sahakyan

2.2 Ongoing collaborations

- Paolo Padovani (ESO)
- Elisa Resconi (TUM)
- Carlos Brandt (Jacobs Univ. Bremen)
- New York University - Abu Dhabi
- Ana Penacchioni, Osvaldo Civitarese, La Plata University, Argentina
- SSDC - ASI

2.3 Previous collaborations

- CESUP

2.4 Postdocs

- Yu-Ling Chang
- Bruno Sversut Arsioli
- Bernardo Machado Fraga

3 Brief description

The activity includes three main topics:

- The consolidation of an ICRANet distributed science data center based in Pescara, Yerevan, and other sites.
- a scientific part, based on the data coming from the ICRANet data center, dedicated to the identification of samples of high energy emitting blazars (1 WHSP, 2 WHSP and 3HSP) and to the theoretical interpretation of the electromagnetic (radio to γ-ray) and high-energy neutrino emission of selected bright blazars.
- an active contribution to the United Nations (UNOOSA) Open Universe initiative consisting in the development of high-transparency scientific data analysis tools based on Vitrual Observatory infrastructure and protocols, using new software technologies such as Linux containers, and in particular Docker.

3.1 Implementation of the ICRANet Science Data Center

Following the preparatory work carried out in the past years, the establishment of the ICRANet Science Data Center on the premises of ICRANet-Pescara has reached the level of an initial implementation phase. The ICRANet data center currently hosts a copy of some of the public astronomical catalogs, several catalogs and databases developed as part of the Open Universe initiative (e.g. OUSX1, OUSPECV1, 2BIGB, etc). as well as the Swift_deepsky and Swift_xrtproc data reduction and analysis software.

In parallel, the novel Yerevan component of the collaboration is focussing on the production of Fermi high level data products, such as adaptive-binning γ-ray light curves, as well as the analysis of ultraviolet data from Swift-UVOT, of selected bright blazars. The ICRANet Science Data Center also

collaborates with the ASI Space Data Center (SSDC) and contributes to the development of the United Nations Open Universe initiative.

3.2 High energy emitting blazars

3.2.1 The VHE 1WHSP, 2WHSP and 3HSP blazar catalogs

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; Padovani et al. , 2017). The emission of these objects is non-thermal over most or the entire electromagnetic spectrum, from radio frequencies to hard γ-rays. HSP blazars, those where the first SED peak is located at high energy ($\nu_{peak} > 10^{15}$ Hz), 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 crucial to better understand their role within the AGN phenomenon, and shed light on their cosmological evolution, which is still a matter of debate.

Arsioli et al. (2015) built a catalog of HSP blazars named 1WHSP, based on WISE color-color diagram with the sources inside the *S*edentary WISE color region(SWCD), 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 $b > |20^{\circ}|$. Note

[1] http://tevcat.uchicago.edu
[2] http://www.star.bris.ac.uk/ mbt/topcat/

that there are three slope criteria in Arsioli et al. (2015) , 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.

About one year ago, Chang et al. (2017) assembled what is still the most complete and largest HSP catalog, 2WHSP, an extension of 1WHSP catalog to $b > |20^\circ|$. Similarly to Arsioli et al. (2015), the 2WHSP catalog was built starting 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 does not miss a number of good (host galaxy dominated) HSPs. 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.

A new, more complete version of the 2WHSP catalog, called 3HSP, has been prepared and is now available on-line at the following web page

http://www.ssdc.asi.it/3hsp.

It includes 2,011 objects whose blazar nature has been verified and charac-

[3] http://tools.asdc.asi.it/SED

terised on the basis of a large amount of multi-frequency information also using the data and tools available within the Open Universe portal at openuniverse.asi.it. The paper presenting this sample has been submitted to Astronomy & Astrophysics and is currently undergoing the refereeing process. Publication is foreseen in the next few weeks. This new sample does not rely on Wise infrared data and therefore is not subject to limitations due to the presence of the host galaxy. In addition the 3HSP list includes several new sources discovered at low Galactic latitudes, and provides more accurate estimates of the SED parameters, based on all the available multi-frequency archival data and new software tools developed in the framework of the United Nations "Open Universe" initiative. One of the important and unique feature of the 3HSP catalog is that it provides redshift estimation for our 88% of the sources, a much larger percentage than any other previous catalogs of High Energy peaked blazars, thanks to the availability of new spectral data a especially novel method of photometric estimation based on optical and IR data.

The 3HSP sample is by far the largest set of high-energy blazars and it nearly triples the number of known HSP blazars compared to the 5BZCAT list. A study of the Cosmological and statistical properties of blazars of this type, which are expected to be detected in large numbers in upcoming surveys of the very high energy γ-ray sky (e.g. CTA), is nearly complete and a paper will be submitted in the first months of 2019.

3.2.2 The 2BIGB 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 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 γ-ray background.

3.2.3 Correlation between blazars and astrophysical neutrinos

Padovani et al. (2016) cross-matched the 2WHSP with IceCube neutrino events. Their results suggest that, among the blazar family, HSPs blazars are the most likely counterparts of astrophysical neutrinos. Resconi et al. (2017) have recently presented new evidence for 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.

The most convincing association of an astrophysical neutrino with an extragalactic object reported so far is that connected with the event occurred on September 22, 2017 (Kopper & Blaufuss, 2017), where a the very bright ($\approx$ 1Jy in the radio band) IBL/HBL BL Lac known with the name of TXS0506+056, was found within the small ($\sim$ 0.1 sqdeg) uncertainty region of the IceCube track neutrino IC170922. Our collaboration is actively participating to this research which resulted in the publication of three major papers in 2018 (Padovani et al. 2018, IceCube collaboration 2018,).

The association of the high-energy neutrino IC170922 with the blazar TXS0506+056 has been listed among the ten stories of 2018 by Science : https://www.sciencenews.org/article/top-science-stories-2018-yir

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 not 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.

3.2.5 The VOU-Blazars tool and the Swift_deepsky software pipeline

To actively support the scientific activities where ICRANet is involved our collaboration contributed to the development of innovative scientific soft-

ware based on Virtual Observatory protocols and on new technology such as Docker containers.

3.2.6 VOU-Blazars

VOU-Blazars is a tool developed within Open Universe, an initiative under the auspices of the United Nations with the objective of largely improving the availability and the use of space science and astronomy data. *VOU-Blazars* is designed to find blazars by mining the information extracted from a large number of multi-wavelength astronomical catalogs and spectral databases using Virtual Observatory services.

VOU-Blazars is available as source code, as a tool encapsulated in a Docker container, and as a web-based service within the Open Universe portal at openuniverse.asi.it VOU-Blazars implements a heuristic approach based on the well known spectral energy distributions that differentiate blazars from other astronomical sources. The tool surveys multi-wavelength catalogs using Virtual Observatory services, dynamically correlates the sources in different energy bands to locate blazars candidates, and builds individual spectral energy distributions to verify the blazar nature and assign a blazar sub-class to each candidate. The final word though is given by the user: *VOU-Blazars* outputs are calibrated flux tables, sky plots and spectral energy distributions for further analysis by the users.

The *VOU-Blazars* tool has been successfully applied to study the association of TXS0506+056 with the IceCube IC170922 neutrino and to search for blazar counterpars of Fermi 3FHL, Fermi 4FGL-DR2, AGILE γ-ray sources. Some of the newly discovered high synchrotron peaked blazars reported in the 3HSP catalog have been found by means of VOU-Blazars.

3.2.7 The Swift_deepsky data analysis pipeline

The Swift_deepsky data analysis pipeline encapsulates the complex HEASoft software and calibration files that are necessary for the analysis if Swift-XRT X-ray images into a Docker container that can be easily run by anyone on MacOS, Linux and Windows10 operating systems.

The Swift_deepsky pipeline can be considered a "high-transparency" X-ray data analysis software tool because a) it can be downloaded and installed in a few clicks, b) it removes platform dependencies and the need to download

the data and calibration files from the archive, and c) it lowers the barrier to X-ray data analysis enabling users, with or without experience in Swift-XRT data analysis, to run data reduction software that generates science ready products usable by everyone.

We have run the Swift_deepsky on all the Swift observation that include a blazar in the field of view of the XRT telescope, resulting in over 8,000 X-ray detection of more 2,200 blazars. The products resulting from this uniform analysis of XRT imaging data, which include images, fluxes and spectral information suitable to build blazars SEDs, constitute the first contribution to a program called **Open Universe for blazars**, designed to provide high-transparency data (that is results and data products that can immediately be used for scientific or other general purposes by anyone) of blazar obtained with a number of satellites operating in the X-ray and γ-ray bands.

Two papers presenting these results based on Swift_deepsky have been recently published (Giommi et al. 2019, A&A 631, 116, Giommi et al. 2020, A&A642, 141), others are in preparation

3.2.8 The Swift_xrtproc pipeline

Swift_xrtproc is a software tool developed in the framework of the Open Universe initiative that carries out a complete processing, form raw data to calibrated data products, followed by spectral and imaging analysis of observations done with the Swift-XRT telescope. The most important steps that are executed for each Swift-XRT observation are:

1. Download of raw data and calibration files from one of the Swift archives.

2. Exposure maps and calibrated data products generation, for each snapshot and for the entire Swift observation, using the XRTPIPELINE task and adopting standard parameters and filtering criteria.

3. Source and background spectral files generation. The source counts are estimated in a circle of 20 pixels radius when no pile-up is present. For the case of PC mode, the background is extracted in an annular region centred around the source with radius sufficiently large to avoid contamination from source photons. For the WT mode the spectrum of the background was estimated from an archive deep observation.

4. Pile-up correction. A verification of the source count-rate is carried out to determine whether the data is affected by pile-up. In case pile-up is present the spectral data is extracted again excluding the central parts of the Point Spread Function, by taking counts in an annular region with inner radius chosen depending on the measured count-rate.

5. Spectral fitting using the XSPEC package assuming a power-law and a log-parabola model.

6. Conversion of best fit spectral data to nufnu units for SED plotting.

7. Photometric analysis using XIMAGE to estimate count-rates, or upper limits, in four energy bands: 0.3-1.0, 1.0-2.0, 2-10, and 0.3-10 keV, for data taken in PC readout mode.

8. Count-rate to X-ray flux conversion in the four energy bands and in nufnu units at the energy of 0.5, 1.5 and 4.5 keV.

9. Flux or upper limit estimation in nufnu units at 1 keV either from the best fit spectrum or from the photometric data (in case the source is too weak for spectral fitting) suitable for light-curve generation and time domain analysis.

The Swift_xrtproc pipeline has been run on all the Swift X-ray observations of blazars that have been pointeed by the Swift observatory at least 50 times. The results, presented in a paper that has been submitted in early 2021, will be available from the ICRANet data center via Virtual Observatory tools and in particular VOU_Blazars

4 Publications

- Barres de Almeida, U.; Bodmann, B.; Giommi, P.; Brandt, C.
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  2017, International Journal of Modern Physics Conference Series, 45.

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- 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)
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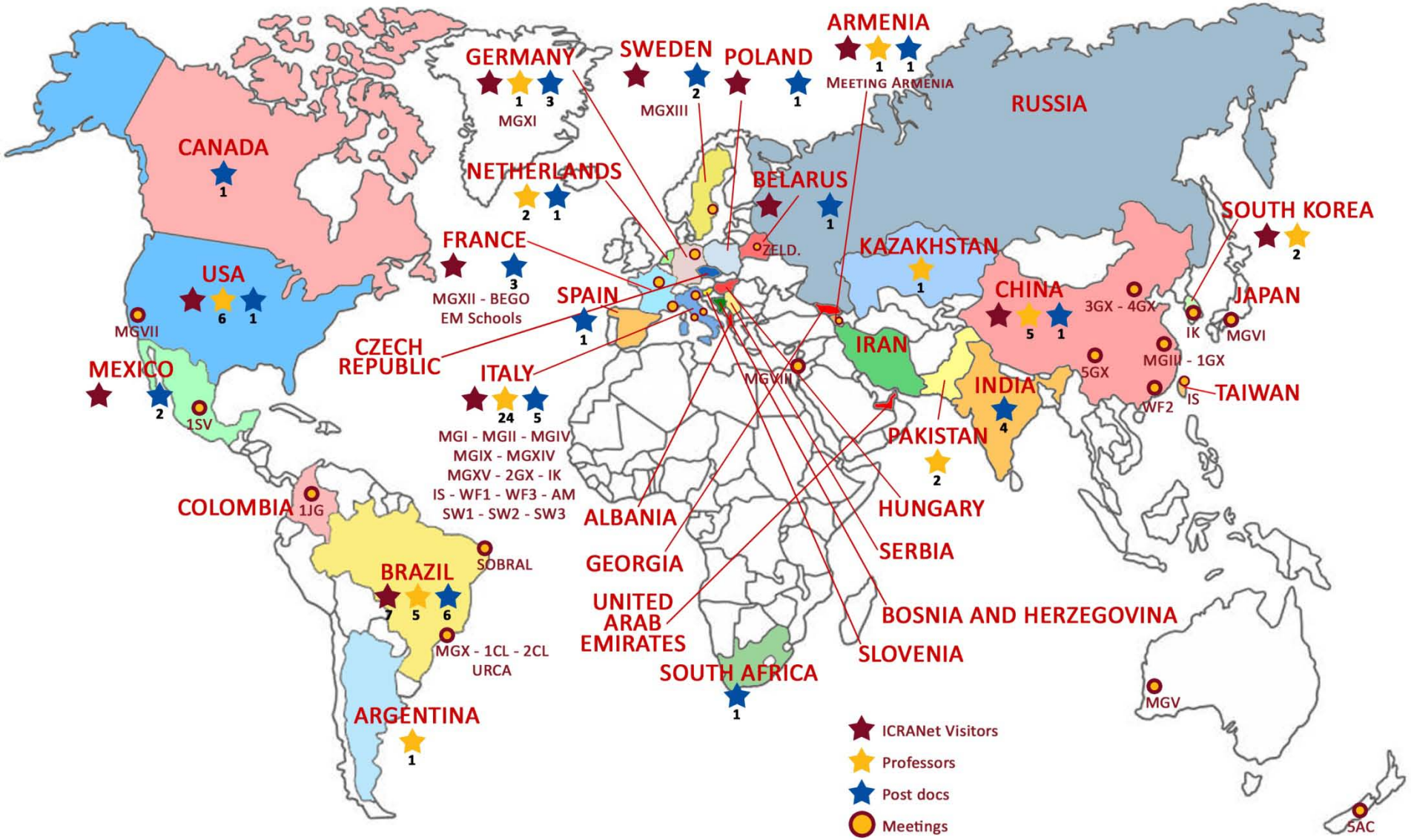
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Maps of collaboration agreements of ICRANet

ICRANet International Collaboration Agreements



ICRANet signed Agreements with Brazilian Institutions



- Agreement ICRANet – CBPF



- Agreement ICRANet – Governo dello Stato di Ceará



- Mou ICRANet – ITA
- Agreement ICRANet – ITA
- Renewal 2014
- Renewal 2017
- Reneval 2020



- Agreement ICRANet – UDESC



- Agreement ICRANet – UFPB
- Renewal 2018



- Carta de intenção ICRANet – IF-UFRGS
- Agreement ICRANet – IF-UFRGS – UFRGS
- Renewal 2019



- Agreement ICRANet – UnB
- Under renewal



- Agreement ICRANet – UNICAMP



- Agreement ICRANet – UTFPR

Enclosure 4

Activities of the ICRANet Centre in France

ICRANet collaboration with France

Introduction

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

ICRANet has the headquarters in Pescara and others seats in different countries.

- In France ICRANet has the seat at Villa Ratti in Nice, according to an accord with the municipality of Nice, signed on 23 October 2006
  (see the act: http://icranet.org/docs/NiceBailEmphyteotique.pdf)
- On May 28, 2013 the Director of ICRANet signed with the Prof. Frédérique Vidal, President of University of Nice Sophia Antipolis, the Agreement between ICRANet and University of Nice Sophia Antipolis.
  (see the agreement: http://icranet.org/documents/agreementICRANet-UNICE.pdf)

- On August 31, 2013 the Director of ICRANet and the Director of Institut des Hautes Études Scientifiques, Jean-Pierre Bourguignon, signed the Agreement between ICRANet and Institut des Hautes Études Scientifiques.
  (see the agreement: http://icranet.org/documents/agreementICRANet-IHES.pdf)

- The activities of the ICRANet Seat at Villa Ratti in Nice comprise the coordination of the IRAP-PhD program, as well as scientific activities connected with the ultra high energy observations by the University of Savoy and the VLT observations performed by the Côte d'Azur Observatory, which involve the thesis works of IRAP PhD students. The University of Savoy is the closest French lab to the CERN.

- 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)

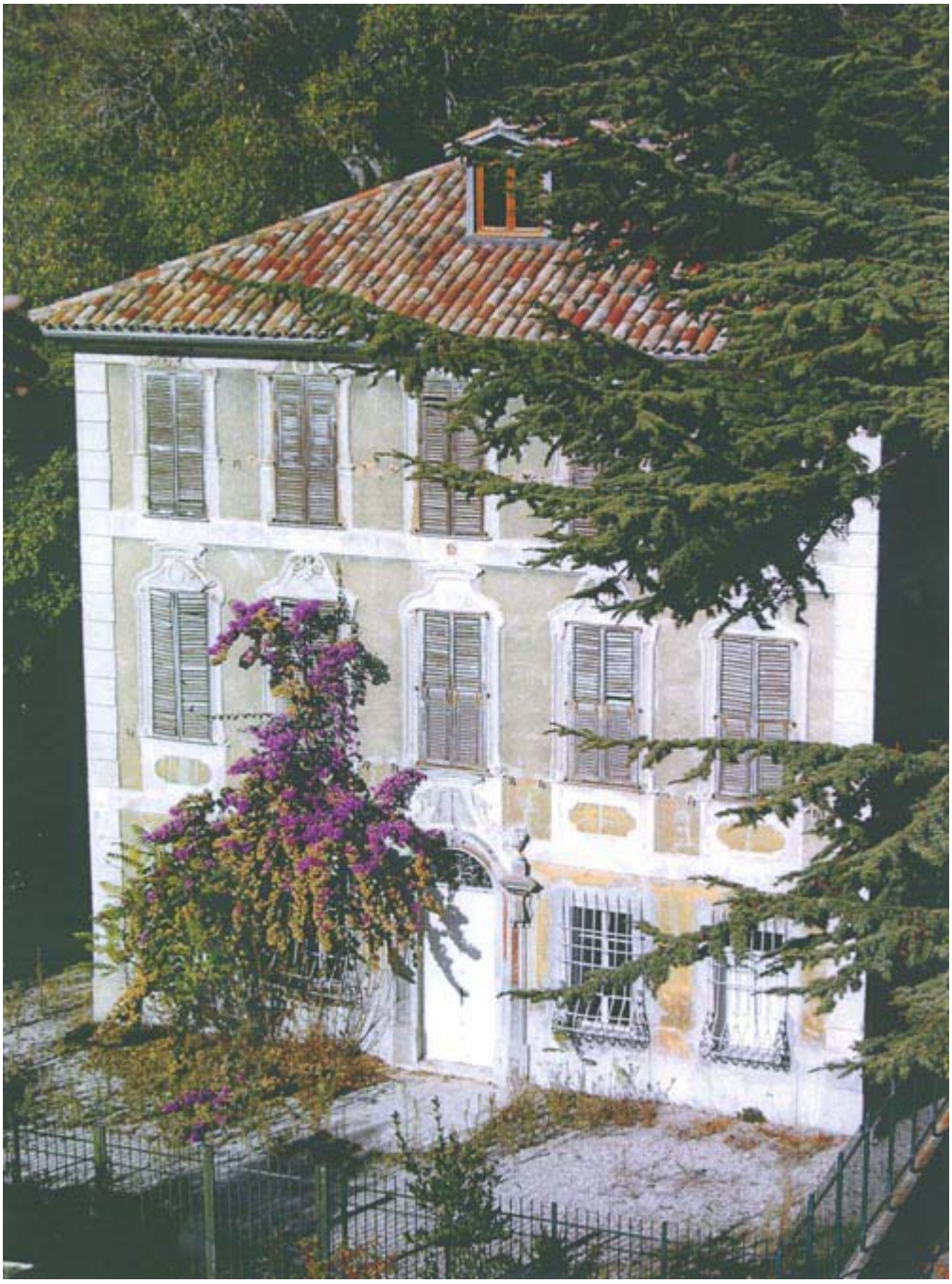
- During 2010-2017 IRAP PhD takes part in the Erasmus Mundus program of the European Commission and for the first time in Europe the IRAP PhD program grants a joint PhD degree among the participating institutions. This Program has enrolled 5 cycles of students with the total amount of 44 students. The Nice University was the host organization.

- In parallel to the above activities, special attention has been traditionally given by ICRANet to the outreach programs. For example in 2009 has been in Paris the MGXII meeting (see: http://www.icra.it/MG/mg12/en/) and, in addition, ICRANet organized in France different meetings:

February 1-19, 2010 – Nice
September 6 - 24, 2010 - Nice
April 3 - 8, 2011 - Les Houches
May 25 - June 10, 2011 Nice
September 5 - 17, 2011 Nice
October 2 - 7, 2011 - Les Houches
September 3 - 21, 2012 - Nice
May 16 -31, 2013 - Nice
September 2 -20, 2013 - Nice
February 23 - March 2, 2014 - Nice
May 10 - 16, 2014 - Les Houches
September 8 -19, 2014 - Nice
May 30 - June 3, 2016 - Nice
June 11 – 14, 2019 - Nice

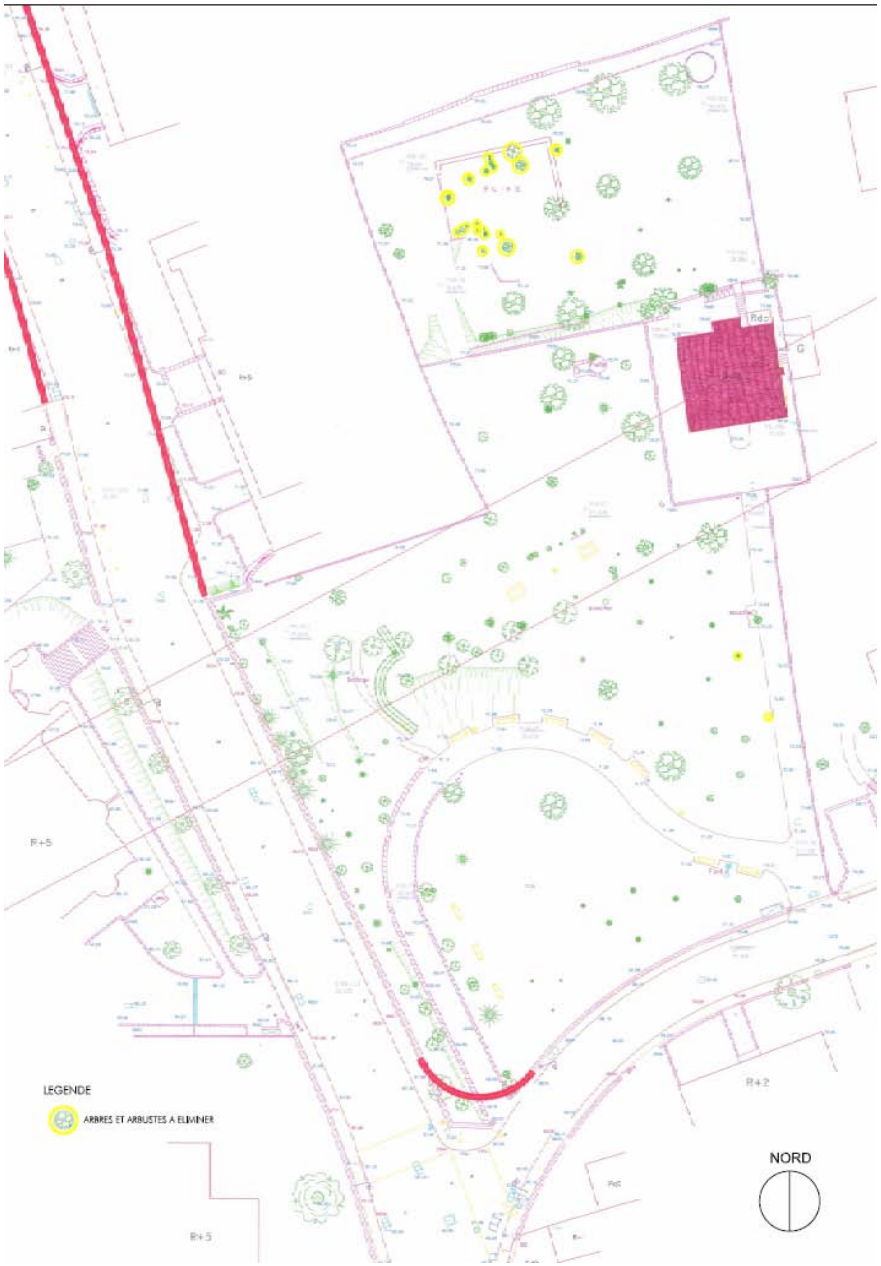
The ICRANet Seat Agreement with Municipality of Nice

On October 23, 2006, was signed between Prof. Ruffini, Director of ICRANet, Mrs Claire Reclus, Deputy Major of the city of Nice, and Mr René Jardillier, notary and doctor in law, the seat agreement (see: http://www.icranet.org/docs/NiceBailEmphyteotique.pdf), with the attribution to ICRANet of a Seat in Villa Ratti.



ICRANet – Villa Ratti before the restrucutirng's works– Nice (Fr)


PARC COMMUNAL
PARC COMMUNAL
Avenue des arenes de Cimiez
Avenue Ratti
R+5
R+1
RdC
NORD
LEGENDE
TRACE REGULATEUR
ARBRES ET ARBUSTES A CONSERVER
ARBRES ET ARBUSTES A INSERER
ESPECES DE NOUVELLES IMPLANTATIONS
O - Olivier (Olea europea)
Q - Chêne vert (Quercus ilex L.)
S - Arbre de Judée (Cercis siliquastrum L.)
A - Arbousier (Arbutus unedo L.)
I - Cyprès d'Italie (Cupressus sempervirens L.)
P - Palmier des canaries (Phoenix canariensis hort.)
C - Camphrier (Cinnamomum camphora)
J - Jasmin blanc (Jasminum polyanthum)
F - Filaria (Phillyrea angustifolia L.)
V - Vipérine de Maoère (Echium candicans)


R+5
R+2
R+3
NORD
LEGENDE
ARBRES ET ARBUSTES A ELIMINER

Villa Ratti - Project of the Works





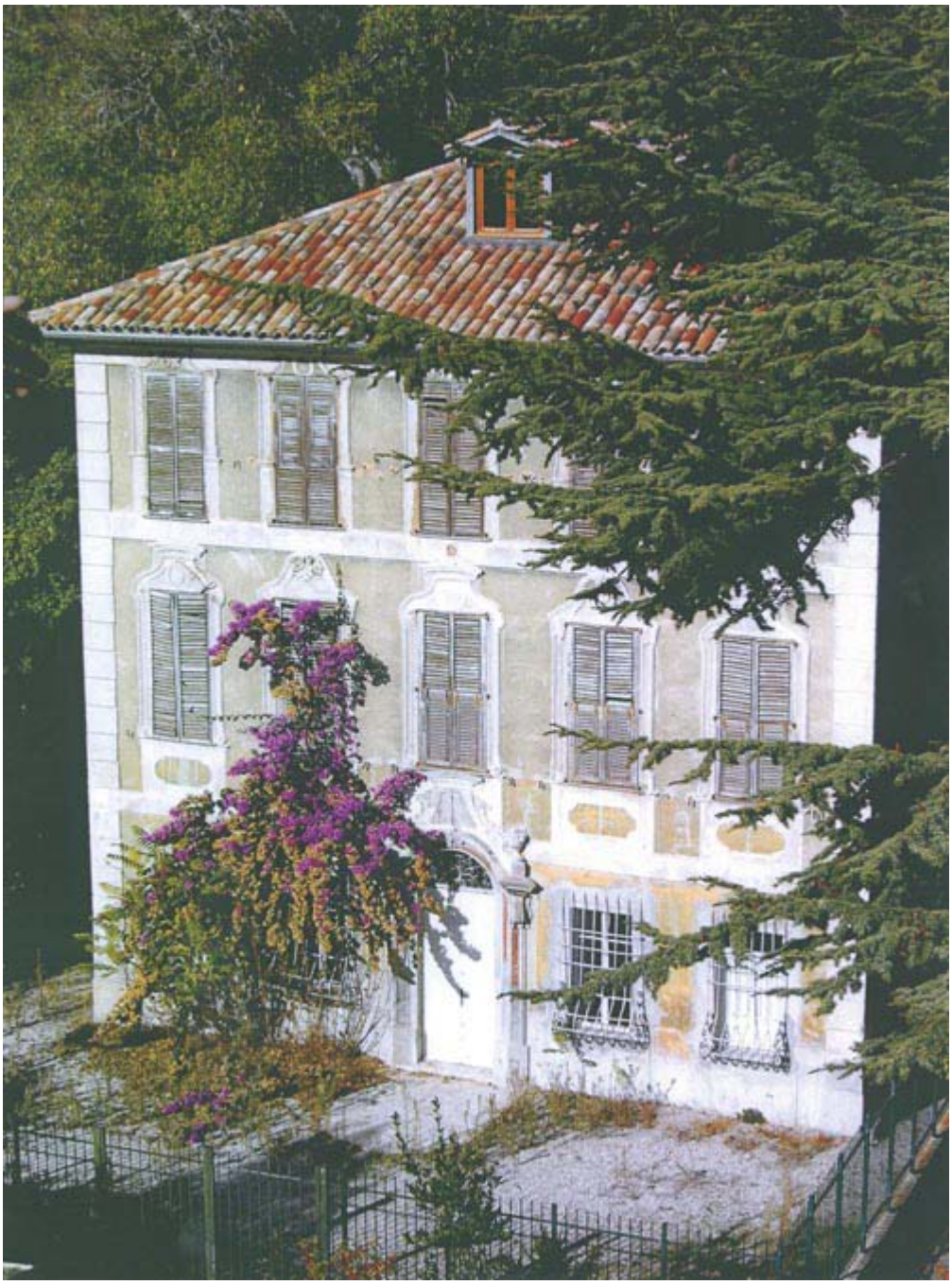


ICRANet – Villa Ratti after the restructuring's works– Nice (Fr)



The ICRANet Seat Agreement with Municipality of Nice

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ICRANet – Villa Ratti before the restrucutirng's works– Nice (Fr)





Villa Ratti - Project of the Works







ICRANet – Villa Ratti after the restructuring's works– Nice (Fr)







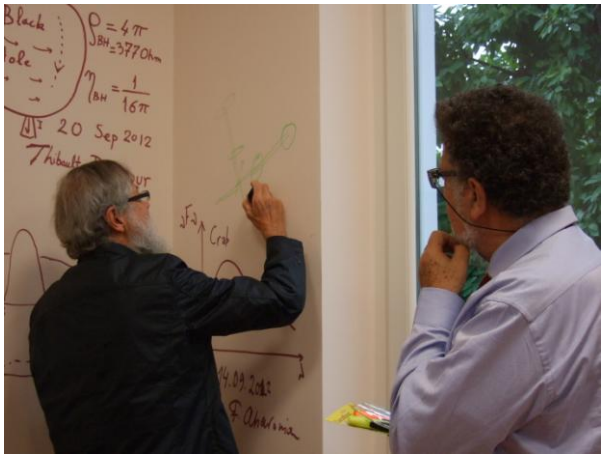




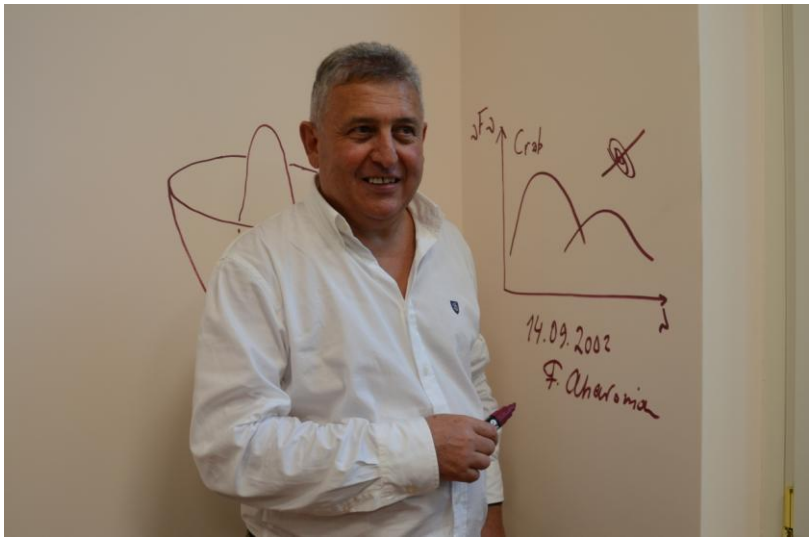


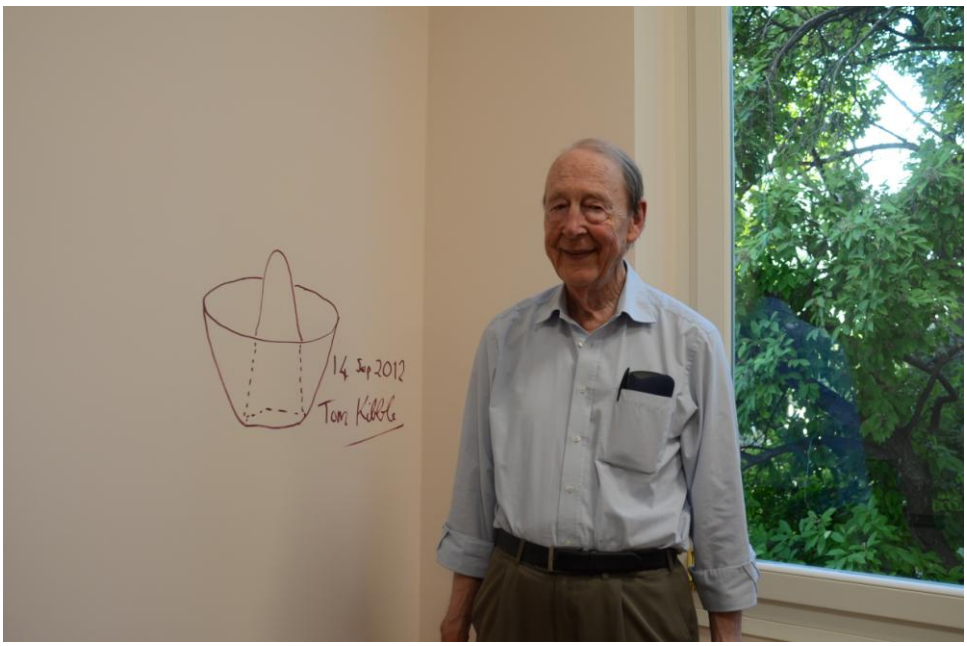





Black
Hole
20 Sep 2012
Crab


Black
Hole
20 Sep 2012
Crab


Crab
14.09.2002
F. Aharonia


14 Sep 2012
Tom Kibble


Crab









Open Universe International doctoral School "*The discovery of Black Holes*", Nice, France, June 11 - 14, 2019

The Open Universe International Doctoral School *"The discovery of Black Holes. How the discovery of a Black Hole in GRB 190114C and in M87 is modifying the human outlook from planet Earth"* has been held at ICRANet Seat at Villa Ratti (Nice - France) from June 11 - 14, 2019. This 5 days conference has been organized thanks to the collaboration among ICRANet, LAPP (Laboratoire d'Annecy de Physique des particules) and the Max Planck Institute for Physics. The opening addresses and the conclusions were given by Professor Remo Ruffini (Director of ICRANet). During this five days conference, a variety of topics in astrophysics were discussed, such as neutrinos, gamma-ray bursts and compact stars, high energy cosmic rays, dark energy and dark matter, general relativity and black holes. The most recent scientific developments were presented by eminent Professors and researchers, such as: Prof. Ulisses Barres De Almeida (CBPF, Rio de Janeiro), Prof. Zurab Berezhiani (Università degli Studi dell'Aquila), Prof. Elisa Bernardini (DESY – Zeuthen, University of Padova), Prof. Paolo Giommi (ASI), Prof. Giovanni Lamanna (Director of LAPP, Annecy), Prof. Mirabel Felix (IAFE), Prof. Jorge A. Rueda H. (ICRANet), Prof. Razmik Mirzoyan (Max Planck Institute for Physics,Munich), Prof. Narek Sahakyan (Director of ICRANet Armenia), Prof. Gregory Vereshchagin (ICRANet), Prof. Shesheng Xue (ICRANet), Dr Martin Kolos (Silesian University in Opava), Dr Arman Tursnov (Silesian University in Opava), Dr Yu Wang (ICRANet), Eduar Becerra (ICRANet), Stefano Campion (ICRANet), Yen-Chen Chen (ICRANet), David Melon Fuksman (ICRANet), Riccardo Middei (Università Degli Studi Roma Tre), Moradi Rahim (ICRANet), José F. Rodriguez R. (ICRANet) and Juan David Uribe Suarez (ICRANet).



Fig. 9: Group photo of the Open Universe International Doctoral School, Nice, 11 – 14 June.

On Wednesday 12, H.E. Simonetta Di Pippo, Director of UNOOSA, sent a video message to the participants to the Open Universe School, in order to outline once again the leading role and the outstanding scientific results achieved by the Open Universe initiative.

For photos, program and more information about the event: http://www.icranet.org/OpenUniverseSchool



Fig. 10: Participants of the Open Universe International School, ICRANet Seat at Villa Ratti, Nice.



Fig. 11: Participants of the Open Universe International School, ICRANet Seat at Villa Ratti, Nice.



Fig. 12: Video message of H.E. Simonetta Di Pippo, Director of UNOOSA.