Faculty, Adjunct professors, Research scientists,

Visiting scientists, Lecturers, PhD students, Post-doc

and Staff

at the Pescara Center

December 2018

Contents

ICRANet Faculty Staff

Barres de Almeida, Ulisses	CBPF, Rio de Janeiro, Brazil
Belinski, Vladimir	ICRANet
Bianco, Carlo Luciano	ICRANet and Università di Roma "Sapienza"
Bini, Donato	CNR, Italy
Chardonnet, Pascal	ICRANet and Université de la Savoie, France
Cherubini, Christian	ICRANet and Campus Biomedico, Italy
Filippi, Simonetta	ICRANet and Campus Biomedico, Italy
Jantzen, Robert	AbrahamTaub-ICRANet Chair and Villanova University, USA
Kerr, Roy P.	Yevgeny Mikhajlovic Lifshitz - ICRANet University of Canterbury, New Zeland
Muccino, Marco	ICRANet and Università di Roma "Sapienza"
Ohanian, Hans	Rensselaer Polytechnic Institute, New York, USA
Pisani, Giovanni Battista	ICRANet and Università di Roma "Sapienza"
Punsly, Brian Mathew	Mathew California University, Los Angeles USA
Rueda, Jorge A.	ICRANet and Università di Roma "Sapienza"
Ruffini, Remo	ICRANet and Università di Roma "Sapienza"
Sahakyan, Narek	ICRANet-Yerevan, Armenia
Vereshchagin, Gregory	ICRANet
Xue, She Sheng	ICRANet

Adjunct Professors of the Faculty

Amati, Lorenzo	Istituto di Astrofisica Spaziale e Fisica Cosmica, Italy
Arnett, David	Subramanyan Chandrasektar - ICRANet Chair, University of Arizona, Tucson, AZ, USA
Belvedere, Riccardo	Centro Brasileiro de Pesquisas Físicas
Bini, Donato	CNR, Italy
Buchert, Thomas	Centre de Recherche Astrophysique de Lyon, UCBL1, ENS-L, CNRS, France
Camargo Rodrigues de Lima, Rafael	Universidade do Estado de Santa Catarina, Brazil
Chakrabarti, Sandip Kumar	Indian Centre for Space Physics, Kolkata, India
Chardonnet, Pascal	ICRANet and Université de la Savoie, France
Cherubini, Christian	ICRANet and Campus Biomedico, Italy
Damour, Thibault	*Joseph-Louis Lagrange - ICRANet Chair*, IHES, Bures sur Yvette, France
Della Valle, Massimo	Osservatorio di CapodiMonte, Italy
Einasto, Jaan	Tartu Observatory, Tõravere, Estonia
Everitt, Francis	*William Fairbank - ICRANet Chair*, Stanford University, USA
Filippi, Simonetta	ICRANet and Campus Biomedico, Italy
Fisher, Robert	University of Massachusetts Dartmouth
Frontera, Filippo	University of Ferrara, Italy
Fryer, Chris L.	University of Arizona, Tucson, Arizona, USA
Giommi, Paolo	ASI, Italian Space Agency
Gionti, Gabriele	Vatican Observatory
Harutyunian, Haik	Byurakan Astrophysical Observatory
Jantzen, Robert	*AbrahamTaub-ICRANet Chair*, Villanova University, USA

Jetzer, Philippe	Istitute of Theoretical Physics - University of Zürich, Switzerland
Khalatnikov Isaak M.	Lev Davidovich Landau - *ICRANet Chair*
Kleinert, Hagen	Richard Feynmann - ICRANet Chair, Freie Universitat Berlin
Kerr, Roy	Yevgeny Mikhajlovic Lifshitz - ICRANet Chair and University of Canterbury, New Zeland
Lee, Hyung Won	Inje University, Korea
Mansouri, Reza	Sharif University of Technology
Mathews, Grant	University of Notre Dame
Merafina, Marco	University of Rome La Sapienza, Italy
Mirabel, Felix	CEA
Mo, Houjun	University of Massachusetts
Muccino, Marco	ICRANet and Università di Roma "Sapienza"
Nicolai, Hermann	Albert Einstein Institute – Potsdam, Germany
Pelster Axel	Hanse Institute of Advanced Study, Germany
Pian, Elena	INAF - Osservatorio Astronomico Trieste, Italy
Piran, Tsvi	Yuval Neeman-ICRANet Chair and the Hebrew University, Israel
Pisani, Giovanni Battista	ICRANet and Università di Roma "Sapienza"
Punsly, Brian Mathew	Mathew California University, Los Angeles USA
Quevedo, Hernando	Institute of Nuclear Science, UNAM
Rosati, Piero	European Southern Observatory, Germany
Sahakyan, Narek	ICRANet-Yerevan, Armenia
Sobouti, Yousef	Institute for Advanced Studies in Basic Sciences, IASBS, Iran
Titarchuk, Lev	*Victor Sobolev – ICRANet Chair*, US Naval Laboratory, USA
Zen Vasconcellos, Cesar Augusto	UFRGS, Porto Alegre, RS, Brazil

Lecturers

Aksenov, Alexei	Institute for Theoretical and Experimental Physics
Alekseev, Georgy	Steklov Mathematical Inst- Russian Acad of Sciences
Bini, Donato	CNR and ICRANet, Italy
Chen, Pisin	National Taiwan University, Kavli Instit. Particle Astrophysics and Cosmology
Cherubini, Christian	Campus Biomedico, Rome, Italy
Chieffi, Alessandro	INAF, Rome, Italy
Coullet, Pierre	Université de Nice - Sophia Antipolis, France
Di Castro, Carlo	Università di Roma "Sapienza", Italy
Jing, Yi-Peng	Shangai Astronomy Observatory
Lanz, Thierry	Observatorire de la Côte d'Azur, Nice, France
Lee, Chul Hoon	Hanyang University, Seoul, Korea
Lee, Hyun Kyu	Department of Physics, Hanyang University, Korea
Limongi, Marco	INAF, Rome, Italy
Lou, You Qing	Tsinghua University, Beijing
Mester, John	Stanford University, USA
Ohanian, Hans	Rensselaer Polytechnic Institute, New York, USA
Pacheco, José	Observatoire de la Côte d'Azur, Nice, France
Perez Bergliaffa, Santiago	Univesidade do Estado de Rio de Janeiro, Brasil
Pucacco Giuseppe	Università di Tor Vergata, Rome, Italy
Sang Pyo Kim	Kunsan National University, Korea
Sepulveda, Alonso	University of Antioquia, Columbia
Song Doo Jong	Korea Astronomy and Space Science Institute, South Korea
Starobinsky, Alexei	Landau Institute for Theoretical Physics, Russia
Sung-Won Kim	Institute of Theoretical Physics for Asia-Pacific, Korea

Wiltshire David University of Canterbury, New Zealand

Research Scientists

Arguelles, Carlos	ICRANet
Benetti, Micol	ICRANet
Bernardini, Maria Grazia	ICRANet and Università di Roma "Sapienza", Italy
Boshkayev, Kuantay	ICRANet
Geralico, Andrea	ICRANet and Università di Roma "Sapienza", Italy
Lattanzi, Massimiliano	University of Oxford and ICRANet
Muccino, Marco	ICRANet
Patricelli, Barbara	ICRANet and Università di Roma "Sapienza", Italy
Rotondo, Michael	ICRANet and Università di Roma "Sapienza", Italy
Sahakyan, Narek	ICRANet
Sigismondi, Costantino	ICRANet
Siutsou, Ivan	ICRANet-Minsk

Visiting Scientists

Abishev, Medeu	Al-Farabi Kazakh National University, Kazakhstan
Ahmedov, Bobomurat	Uzbekistan Academy of Sciences
Alfonso Pardo, Wilmer Daniel	Universidad de Antioquia Medellín, Antioquia, Colombia
Ansoldi, Stefano	University of Udine
Arkhangelskaya, Irene	Moscow Engineering Physics Institute, Russia
Bakytzhan, Zhami	Al-Farabi Kazakh National University, Kazakhstan
Batebi, Saghar	Isfahan University of Technology, Iran
Bavarsad, Ehsan	Isfahan University of Technology, Pakistan
Belczynski, Chris	Nicolaus Copernicus Astronomical Center, Poland
Bernal, Cristian Giovanny	Universidad Nacional Autónoma de México (UNAM), Mexico
Blinne, Alexander	University Jenna, Germany
Boçi, Sonila	University of Tirana, Albania
Cadez, Andrej	University of Ljubljana, Slovenia
Cho, Yongmin	UNIST
Corvino, Giovanni	University of Rome La Sapienza, Italy
Da Cunha, Bruno Carneiro	UFPE, Brazil
Davis, Stanley	Université Bordeaux, France
De Lorenci, Vitorio	Federal University Of Itajuba - Brazil
Ewald, Denise Grüne	Universidade Federal do Rio Grande do Sul, Brazil
Fimin, Nicolaj	Keldish Institute for Applied Mathematics, Russia
Gadri, Mohamed	University of Tripoli, Libya
Gallego Cadavid, Alexander	Universidad de Antioquia Medellín, Antioquia, Colombia
Goulart, Erico	Centro Brasileiro de Pesquisas Físicas, Brazil

Guzzo, Marcelo Moraes	Universidade Estadual de Campinas, Brazil
Haghighat, Mansour	Isfahan University of Technology, Iran
Hoang, Ngoc-Long	IPE, Hanoi, Vietnam
Hütsi, Gert	Tartu Observatory, Estonia
Kenesbek, Zhadyra	Al-Farabi Kazakh National University, Kazakhstan
Kim, Hongsu	KASI
Kim, Hyeong-Chan	Chungju National University
Kim, Hyuong Yee	INJE, South Korea
Kim, Jim Young	Kunsan National University
Lee, Chang-Hwan	Pusan National University
Lee, Hyung Won	Inje University
Lee, Wonwoo	Cquest, Sogang University
Lin, Wenbin	Southwest Jiaotong University, Chengdu, China
Mahmoudikooshkeqazi, Somayyeh	Shiraz University, Iran
Malheiro, Manuel	ITA, Brazil
Mansouri, Reza	Sharif University of Technology, Iran
Mathews, Grant	University of Notre Dame, USA
Modaresvamegh, Saeidehalsadat	Shiraz University, Iran
Mohammadi, Rohollah	Isfahan University of Tecnology, Iran
Moliné, Maria de los Angeles	Instituto de Astrofísica e Ciências do Espaço, Lisboa
Mosquera Cuesta, Herman	Instituto Federal de Educação, Ciência e Tecnologia do Ceará, Brazil
Motie, Iman	Isfahan University of Tecnology, Pakistan
Nagataki, Shigehiro	Yukawa Institute for Theoretical Physics, Kyoto University
Nessipbay, Aizhan	Al-Farabi Kazakh National University, Kazakhstan

Pak-Hin, Tam	Sun Yat-sen University, China
Pakhshan, Espoukeh	Azad University
Park, Ilhung	Ieu, Ewha Womans University
Park, Myeong-Gu	Kyungpook National University
Passiltay, Ainur	Al-Farabi Kazakh National University, Kazakhstan
Paudel, Rishiram	Tribhuvan University, Central Department of Physics
Peqini, Klaudio	University of Tirana, Albania
Peres Menezes, Débora	Universidade Federal de Santa Catarina, Brazil
Peresano, Michele	University of Udine, Italy
Perez Bergliaffa, Santiago	Universidade do Estado do Rio de Janeiro, Brazil
Perez Martinez, Aurora	Instituto de Cibernetica Matematica Y Fisica, Cuba
Piechocki, Wlodzimierz	Institute for Nuclear Studies - Poland
Picanço Negreiros, Rodrigo	Universidade Federal Fluminense, Brazil
Prakapenia, Mikalai	B.I. Stepanov Institute of Physics, NASB, ICRANet-Minsk
Qadir, Ashgar	National University of Sciences and Technology - Pakistan
Raffaelli, Bernard	Université de Corse, France
Riahi, Rashid	Isfahan University of Technology, Iran
Romano, Antonio Enea	Universidad de Antioquia Medellín, Antioquia, Colombia
Romero, Gustavo E.	Instituto Argentino de Radioastronomia IAR-CONICET, Argentina
Sasaki, Misao	Kyoto University, Japan
Shakeri, Soroush	Isfahan University of Technology, Iran
Soares Maia, Clovis Achy	Universidade de Brasília, DF, Brazil
S. O. Kepler	Universidade Federal do Rio Grande do Sul, Brazil
Tahvildarzadeh, Abdolreza	Rutgers, the State Univeristy of New Jersey, USA

Tarasenko, Aleksander	Belarusian State University
Teixeira Coelho, Hélio	Universidade Federal de Pernambuco, Brazil
Tkachenko, Alessya	Al-Farabi Kazakh National University, Kazakhstan
Torres, Sergio	Centro Internacional de Fisica, Bogotà, Colombia
Torrieri, Donato Giorgio	Universidade Estadual de Campinas, Brazil
Tizchang, Seddigheh	Isfahan University of Technology, Iran
Vallejo Peña, Sergio Andrés	Universidad de Antioquia Medellín, Antioquia, Colombia
Van Putten, Maurice	Korean Institute for Advanced Study, South Korea
Yang, Jongmann	Ieu, Ewha Womans University
Yeom, Dong-Han	Cquest, Sogang University
Zalaletdinov, Roustam	Dept. of Theoretical Physisc, Institute of Nuclear Physics, Uzbek Acadeny of Sciences, Uzbekistan
Zhumabayeva, Symbat	Al-Farabi Kazakh National University, Kazakhstan

International Relativistic Astrophysics Ph. D

First Cycle	*2002-2005*
Peirani, Sebastien	France
Second Cycle	*2003-2006*
Bernardini, Maria Grazia	Italy
Mattei, Alvise	Italy
Mercuri, Simone	Italy
Third Cycle	2004-2007
Chiappinelli, Anna	France
Cianfrani, Francesco	Italy
Guida, Roberto	Italy
Rotondo, Michael	Italy
Yegorian, Gegham	Armenia
Vereshchagin, Gregory	Belarus
Fourth Cycle	2005-2008
Battisti, Marco Valerio	Italy
Dainotti, Maria Giovanna	Italy
Khachatryan, Harutyun	Armenia
Lecian, Orchidea Maria	Italy
Pizzi, Marco	Italy
Pompi, Francesca	Italy
Fifth Cycle	*2006-2009*
Caito, Letizia	Italy
De Barros, Gustavo	Brazil
Minazzoli, Olivier	Switzerland
Patricelli, Barbara	Italy
Rangel Lemos, Luis Juracy	Brazil
Rueda Hernandez, Jorge Armando	Colombia
Sixth Cycle	*2007-2010*
Ferroni, Valerio	Italy
Izzo, Luca	Italy
Kanaan, Chadia	
Pugliese, Daniela	Italy
Sigismondi, Costantino	Italy
Siutsou, Ivan	Belarus
Seventh Cycle	*2008-2011*
Belvedere, Riccardo	Italy
Ceccobello, Chiara	
Ferrara, Walter	Italy
Han, Wen-Biao	China
Luongo, Orlando	Italy
Pandolfi, Stefania	Italy
Taj, Safia	Pakistan
Eighth Cycle	*2009-2012*

Boshkayev, Kuantay	Kazakhstan
Bravetti, Alessandro	Italy
Haney, Maria	Germany
Lombardi, Caterina Antonietta	Italy
Menegoni, Eloisa	Italy
Sahakyan, Narek	Armenia
Sahini, Sahil	India

Ninth Cycle	*2010-2013*
Arguelles, Carlos	Argentina
Benetti, Micol	Italy
Muccino, Marco	Italy

Tenth Cycle	*2011-2014*
Cáceres Uribe, Diego Leonardo	Colombia
Wang, Yu	China

Eleventh Cycle	*2012-2015*
Barbarino, Cristina	Italy
Cipolletta, Federico	Italy
Dichiara, Simone	Italy

Twelfth Cycle	*2013-2016*
Becerra, Laura	Colombia
Harutyunyan, Vahagn	Armenia

Thirteenth Cycle	*2014-2017*
Moradi, Rahim	Iran
Rodriguez Ruiz, Jose Fernando	Colombia

Fourteenth Cycle	*2015-2018*
Melon Fuksman, J. David	Argentina
Primorac, Daria	Croatia
Uribe S., Juan D.	Colombia

Fifteenth Cycle	*2016-2019*
Baghmanyan, Vardan	Armenia
Bedić, Suzana	Croatia
Campion, Stefano	Italy
Chen, Yen-Chen	Taiwan
Gasparyan, Sargis	Armenia
Marongiu, Marco	Italy
Martone, Renato	Italy
Vieira Lobato, Ronaldo	Brazil
Zargaryan, Davit	Armenia

Sixteenth Cycle	*2017-2020*
Carinci, Massimo Luca Emiliano	Italy
Yunis, Rafael Ignacio	Argentina
Becerra Vergara, Eduar Antonio	Colombia

IRAP Ph. D. Erasmus Mundus Students

First Cycle	*2010-2013*
Baranov, Andrey	Russia
Benedetti. Alberto	Italy
Dutta, Parikishit	India
Fleig, Philipp	Germany
Gruber, Christine	Austria
Liccardo, Vincenzo	Italy
Machado De Oliveira Fraga, Bernardo	Brazil
Martins De Carvalho, Sheyes	Brazil
Penacchioni, Ana Virginia	Argentina
Valsan, Vineeth	India
Second Cycle	*2011-2014*
Begue, Damien	France
Dereli, Husne	Turkey
Gregoris, Daniele	Italy
Iyyani, Shabnam Syamsunder	India
Pereira, Jonas Pedro	Brazil
Pisani, Giovanni	Italy
Rakshit, Suvendu	India
Sversut Arsioli, Bruno	Brazil
Wu, Yuanbin	China
Third Cycle	*2012-2015*
Bardho, Onelda	Albania
Enderli, Maxime	France
Filina, Anastasia	Russia
Galstyan, Irina	Armenia
Gomes De Oliveira, Fernanda	Brazil
Khorrami, Zeinab	Iran
Ludwig, Hendrik	Germany
Sawant, Disha	India
Strobel, Eckhard	Germany
Fourth Cycle	*2013-2016*
Ahlén, Olof	Sweden
Gómez Diaz, Gabriel	Colombia
Kovacevic, Milos	Serbia
Li, Liang	China
Lisakov, Sergey	Russia
Maiolino, Tais	Brazil
Sridhar, Srivatsan	India
Stahl, Clément	France
Yang, Xiaofeng	China
Fifth Cycle	*2014-2017*
Aimuratov, Yerlan	Kazakhstan
Chang, Yu-Ling	Taiwan

Delgado, Camilo	Colombia
Efremov, Pavel	Russia
Karilca, Mile	Croatia
Krut, Andreas	Germany
Martinez Aviles, Gerardo	Mexico

CAPES Students

First Cycle	*2013-2016*
Brandt Carlos Henrique	Brazil
Guimarães Carvalho Gabriel	Brazil
Pereira Lobo Iarley	Brazil

Administrative and Secretarial Staff

ICRANet - Pescara

Adamo, Cristina	Administrative Office
Antonucci, Valerio	System Manager
Brandolini, Gabriele	System Manager
Di Berardino, Federica	Head of the Secretarial Office
Di Niccolo, Cinzia	Secretariat
Latorre, Silvia	Administrative Office
Natale, Elisabetta	Secretariat
Verzulli, Damiano	System Manager

ICRANet Ar – Armenia

Kostandjan Susanna

ICRANet Faculty Staff

Bini Donato

Position: November 30, 2018 -today
Senior Researcher (permanent position) at
Istituto per le Applicazioni del Calcolo "M. Picone," CNR
Via dei Taurini, 19 I-00185 Roma
[Previous position from October 1, 1995 -November 29, 2018: Researcher (permanent) at the same CNR institute]

I Scientific Work

The main topic of my interest is General Relativity with special attention to several classical aspects.

In particular, I'm interested in: analysis and interpretation of exact solutions of Einstein's field equations, spacetime splitting techniques, measurement process and the role of the observer in General Relativity, particle dynamics in certain fixed gravitational backgrounds (either test particles with scalar structure: the mass, or particles with internal structure: spinning test particles and particles with multipolar structure, quadrupolar and beyond), gravitational perturbations, gravitational waves. Currently, the main topics of interest for my research activities involve the PN approximation of General Relativity, gravitational self-force, effective-one-body model, with applications to binary systems.

I'm an expert user of MAPLE™ tensor calculus package.

II Conferences and educational activities

Conferences and Other External Scientific Work

Since 1988 I have participated in all the international meetings of the Marcel Grossmann series as well as all the conferences of the ICRA- ICRANet series.

Diploma thesis supervision

I've been supervisor of the Diploma thesis of several students at the University of Rome "La Sapienza", since 1995:
G. Spoliti, A. Merloni, C. Germani, C. Cherubini, G. Miniutti, G. Cruciani, A. Geralico, A. Lunari, M. De Mattia, D. Gregoris.

Ph.D thesis supervision
Dr. V. Montaquila, Physics departments of the University of Naples "Federico II.," year 2011.
Dr. M. Haney, IRAP Ph.D, University of Rome "Sapienza," year 2013.
Gabriel G. Carvalho (CAPES, Brazil and ICRANet)

Teaching experiences
I'm Contract Professor of Physics since 2004 at the faculty of Medicine of the University Campus Biomedico, in Rome. From 2007-2009 I have also been Contract Professor of Physics at the Nursery School of the same university.

Work With Postdocs
A Geralico (Istituto per le Applicazioni del Calcolo "M. Picone," CNR, Rome, Italy)

III Service activities
Scientific collaboration with:
Prof. R.T. Jantzen (Villanova Univesity, USA and ICRANet);

Outside ICRANet
Scientific collaboration with:
Prof. T. Damour (IHES, Paris, France).
Dr. A. Ortolan (INFN Legnaro, Padova, Italy);
Dr. G. Esposito (INFN, Napoli, Italy)

Other
I'm currently doing referee activity for a large number of international journals in the field of General Relativity and I'm a reviewer for Mathreview.
For the years 2002-2004 I have been the leader of a collaboration project between the Italian Research Council (CNR) and the analogous institution in Venezuela. Title of the project: *Construction of 3d numerical models for the study of magnetohydrodynamics in gravitational physics and astrophysics*.
For the years 2007-2008 I have been the leader of young researchers projects of INDAM (Istituto Nazionale di Alta Matematica). Title of the project: *Light coordinates and spacetime topography*.
For the years 2008-2009 I have been the leader of young researchers projects of INDAM (Istituto Nazionale di Alta Matematica). Title of the project: *Sistemi di Posizionamento Globale relativistici*

2018 List of publications

1) Bini D., Geralico A.,
Relative-observer definition of the Simon tensor
Class. Quantum. Grav. vol. 35, 105003 (2018)
https://doi.org/10.1088/1361-6382/aaae7d

2) Bini D., Damour T., Geralico A.,
Spin-orbit precession along eccentric orbits: improving the knowledge of self-force corrections and of their effective-one-body counterparts
Phys. Rev. D, 97, no.10, 104046 (2018)
e-print arXiv: 1801.03704 [gr-qc]
DOI: 10.1103/PhysRevD.97.104046

3) Bini D., Chicone C., Mashhoon B.,
Twisted Gravitational Waves
Phys. Rev. D, 97, no. 6, 064022 (2018)
https://doi.org/10.1103/PhysRevD.97.064022
arXiv:1801.06003 [gr-qc]

4) Bini D., Damour T., Geralico A., Kavanagh C.,
Detweiler's redshift invariant for spinning particles along circular orbits on a Schwarzschild background
Phys. Rev. D, 97 no.10, 104022 (2018).
https://doi.org/10.1103/PhysRevD.97.104022
arXiv:1801.09616 [gr-qc]

5) Bini D., Geralico A.,
On the energy content of electromagnetic and gravitational plane waves through super-energy tensors
Class. Quantum Grav., 35 no.16, 165006 (2018)
DOI: 10.1088/1361-6382/aad0b0

6) Bini D., Chicone C., Mashhoon B., Rosquist K.,
Spinning particles in Twisted Gravitational Wave Spacetimes
Phys. Rev. D, 98, 024043 (2018)
https://doi.org/10.1103/PhysRevD.98.024043
arXiv:1805.07080

7) Bini D., Esposito G.,
On the local isometric embedding of trapped surfaces into three-dimensional Riemannian manifolds
Class. Quantum Grav., 35 no.19, 195003 (2018)
DOI: 10.1088/1361-6382/aadb39
arXiv:1805.08723

8) Bini D., Damour T.,
Gravitational spin-orbit coupling in binary systems at the second post-Minkowskian approximation
Phys. Rev. D, 98, 044036 (2018)
https://doi.org/10.1103/PhysRevD.98.044036
arXiv:1805.10809

9) Bini D., Geralico A.,
High-energy hyperbolic scattering by neutron stars and black holes
Phys. Rev. D, 98, 024049 (2018)
https://doi.org/10.1103/PhysRevD.98.024049
arXiv:1806.02085

10) Bini D., Geralico A.,
Gravitational self-force corrections to tidal invariants for spinning particles on circular orbits in a Schwarzschild spacetime
Phys. Rev. D, 98, 084021 (2018)
https://doi.org/10.1103/PhysRevD.98.084021
arXiv:1806.03495

11) Bini D., Geralico A.,
Gravitational self-force corrections to tidal invariants for particles on eccentric orbits in a Schwarzschild spacetime
Phys. Rev. D, 98, 064026 (2018)
https://doi.org/10.1103/PhysRevD.98.064026
arXiv:1806.06635

12) Bini D., Geralico A.,
Gravitational self-force corrections to tidal invariants for particles on circular orbits in a Kerr spacetime
Phys. Rev. D, 98, 064040 (2018)
https://doi.org/10.1103/PhysRevD.98.064040
arXiv:1806.08765

13) Rosquist K., Bini D., Mashhoon B.,

Twisted Gravitational Waves of Petrov type D
Phys. Rev. D 98, 064039 (2018)
https://doi.org/10.1103/PhysRevD.98.064039
arXiv:1807.09214

14) Bini D., Geralico A., Jantzen R.T.,
Black hole geodesic parallel transport and the Marck recipe for isolating cumulative precession effects
Phys. Rev. D, submitted (2018)
arXiv:1807.10085

15) Bini D., Geralico A.,
Gravitational wave effects on astrometric observables
Phys. Rev. D, 98, 124036 (2018).
https://doi.org/10.1103/PhysRevD.98.124036
arXiv:1901.00676

16) Bini D. Damour T., Geralico A., Kavanagh C., M. van de Meent,
Gravitational self-force corrections to gyroscope precession along circular orbits in the Kerr spacetime
Phys. Rev. D, 98 104062 (2018)
https://doi.org/10.1103/PhysRevD.98.104062
arXiv: 1809.02516

Cherubini Christian

Position: Associate Professor in Mathematical Physics (MAT/07).
Departmental Faculty of Engineering,
University "Campus Bio-Medico di Roma",
Via A. del Portillo 21, I-001285 Rome, Italy and
Adjunct Professor in ICRANet Faculty.

Period covered: position at ICRANet started on September 11th, 2017

I Scientific Work

- Astrophysics of self gravitating fluids.
- Analytical methods for electrodynamics and magnetohydrodynamics around black holes.
- Numerical Relativity.
- Fluid dynamics and analogue gravity formalism
- Mathematical Biology.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

- 15th Marcel Grossmann Meeting: Rome, July 1-7, 2018

II b Work With Students

Prof. Cherubini has published in 2018 a work in collaboration with Prof. S. Filippi, Prof. R. Ruffini, Dr. A. Loppini, Prof. S.S. Xue and with the ICRANet PhD students R. Moradi and W. Yu on black hole magnetohydrodynamics around Kerr black holes. At the moment he is still working on problems of relativistic electrodynamics around black holes in collaboration also with Dr Rueda. He is also studying selected problems in mathematical biology.

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

- Participation to the "Collegio di Dottorato" of the INTERNATIONAL RELATIVISTIC ASTROPHYSICS PH.D."

- Participation to the International Coordinating Committee of 15th Marcel Grossmann Meeting: Rome, July 1-7, 2018

III b. Outside ICRANet

- Lecturer "Electromagnetism" (Departmental Faculty of Engineering, University Campus Bio-Medico of Rome).

- Lecturer "Mathematical Physics Models for Engineering" (Departmental Faculty of Engineering, University Campus Bio-Medico of Rome).

IV. Other

Prof. Cherubini has a longstanding collaboration with other ICRANET scientists. In particular in collaboration with Dr Andrea Geralico, Dr Donato Bini, Prof. Robert T Jantzen, Prof. Remo Ruffini and Dr. J Rueda, he has written several articles in various areas of General Relativity. With Prof. Simonetta Filippi he is involved in research activities in the fields of Stellar and Galactic Structures, Effective Geometries and Complex Systems in Nature.

2018 List of Publications

- Cherubini C., Filippi S., Loppini A., Moradi R., Ruffini R., Wang Y.,Xue S., "Perfect relativistic magnetohydrodynamics around black holes in horizon penetrating coordinates" Phys. Rev. D **97**, 064038 (2018).

- J. A. Rueda R. Ruffini, J. F. Rodriguez, M. Muccino, Y. Aimuratov, U. Barres de Almeida, L. Becerra, C. L. Bianco, C. Cherubini, S. Filippi, M. Kovacevic, R. Moradi, G. B. Pisani, and Y.Wang, "The binary progenitors of short and long GRBs and their gravitational-wave emission" EPJWeb of Conferences 168, 01006 (2018).

- Boccia E., Gizzi A., Cherubini C., Nestola M.G.C., Filippi S.,"Viscoelastic Computational modeling of the human head-neck system: Eigenfrequencies and time-dependent analysis" (2018), Int J Numer Meth Biomed Engng. 34:e2900.

- Loppini A., Cherubini C., Filippi S., "On the emergent dynamics and synchronization of beta-cells networks in response to space-time varying glucose stimuli" (2018), Chaos, Solitons and Fractals, 09 p.269-279

- Loppini A., Gizzi A., Ruiz-Baier R., Cherubini C., Fenton F.H. and Filippi S., "Competing Mechanisms of Stress-Assisted Diffusivity and Stretch-Activated Currents in Cardiac Electromechanics" (2018), Frontiers in Physiology, Volume 9, article 1714

- Cherubini C., Loppini A. and Filippi S., "Chapter 10. Systems Biology Modeling of Nonlinear Cancer Dynamics" (2018) in "'Systems Biology'", (Mariano Bizzarri ed.), Methods in Molecular Biology, vol. 1702,

Filippi Simonetta

Position: Full Professor in Mathematical Physics (MAT/07)
Departmental Faculty of Engineering
University Campus Bio-Medico of Rome,
Head, Laboratory of Non Linear Physics and Mathematical Modeling
Pro-Rector for Education
Via A. del Portillo 21, I-001285 Rome, Italy,
Tel. +39-06-225419611
and
Adjunct Professor in ICRANet Faculty.

Period covered: position at ICRANet started on September 12th 2017

I Scientific Work

- Astrophysics of self-gravitating fluids.
- Electrodynamics around black holes.
- Numerical Relativity.
- Fluid dynamics and analogue gravity
- Theoretical biophysics.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

II b Work With Students

Prof. Filippi, together with Prof. C.Cherubini, Prof. R. Ruffini, Dr A. Loppini and Prof. S.S. Xue, has recently published with the ICRANet PhD students R. Moradi and W. Yu a work on analytical relativistic magnetohydrodynamics around Kerr black holes. At the moment she is involved in research activities on black hole electrodynamics and selected theoretical studies on biophysics.

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

Prof. Filippi serves as supervisor for IRAP PhD students.

III b. Outside ICRANet

- Lecturer "Dynamics of Complex Systems" (Engineering Departmental Faculty, University Campus Bio-Medico of Rome).
- Faculty of the "Science and Engineering for Humans and the Environment PH.D " by University Campus Bio-Medico of Rome.

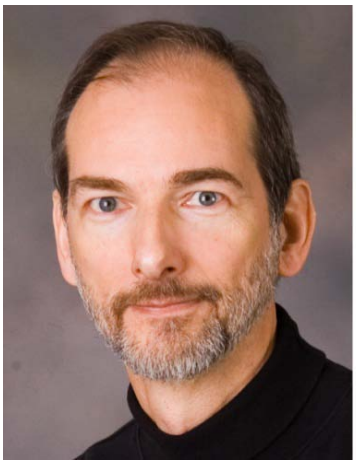
- **IV. Other**

Prof. Filippi has a longstanding collaboration with ICRANET scientists. In particular in collaboration with Prof. Remo Ruffini she has written several articles on various aspects of Gravitational Physics. With Prof. Christian Cherubini, Dr Jorge Rueda, Dr Andrea Geralico and Dr Donato Bini she has been involved in research activities in the fields of Stellar and Galactic Structures, Effective Geometries and Complex Systems in Nature.

2018 List of Publications

- Cherubini C., Filippi S., Loppini A., Moradi R., Ruffini R., Wang Y.,Xue S., "Perfect relativistic magnetohydrodynamics around black holes in horizon penetrating coordinates" Phys. Rev. D **97**, 064038 (2018).
- J.A. Rueda R. Ruffini, J. F. Rodriguez, M. Muccino, Y. Aimuratov, U. Barres de Almeida, L. Becerra, C. L. Bianco, C. Cherubini, S. Filippi, M. Kovacevic, R. Moradi, G. B. Pisani, and Y.Wang, "The binary progenitors of short and long GRBs and their gravitational-wave emission" EPJWeb of Conferences 168, 01006 (2018).
- Boccia E., Gizzi A., Cherubini C., Nestola M.G.C., Filippi S.,"Viscoelastic Computational modeling of the human head-neck system: Eigenfrequencies and time-dependent analysis" (2018), Int J Numer Meth Biomed Engng. 34: e2900.
- Loppini A., Cherubini C., Filippi S., "On the emergent dynamics and synchronization of beta-cells networks in response to space-time varying glucose stimuli" (2018), Chaos, Solitons and Fractals, 09 p.269-279
- Loppini A., Gizzi A., Ruiz-Baier R., Cherubini C., Fenton F.H. and Filippi S.,"Competing Mechanisms of Stress-Assisted Diffusivity and Stretch-Activated Currents in Cardiac Electromechanics" (2018), Frontiers in Physiology, Volume 9, article 1714
- Cherubini C., Loppini A. and Filippi S., "Chapter 10. Systems Biology Modeling of Nonlinear Cancer Dynamics" (2018) in 'Systems Biology', (Mariano Bizzarri ed.), Methods in Molecular Biology, vol. 1702,

Jantzen, Robert



Position: **Professor**
Period covered: **2018**

I Scientific Work

Ongoing collaboration with Donato Bini on mathematical properties of stationary spacetimes

II Conferences and educational activities
II a Conferences and Other External Scientific Work
MG14 Editing duties

II b Work With Students

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities*[activities carried out in collaboration with ICRANet(e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

MG15 Editing duties

III b. Outside ICRANet

IV. Other

2018 List of Publications

148. Black hole geodesic parallel transport and the Marck recipe for isolating cumulative precession effects
D. Bini, A. Geralico and R.T. Jantzen
submitted to Phys. Rev. D (2018), in revision.

Brian Punsly

Position: Research Scientist
Period covered: 10/2016-10/2017

I Scientific Work

I Scientific Work

Black Holes and Quasars

1. Introduction

This report describes the research performed by Brian Punsly and collaborators in cooperation with ICRANet in 2018. The research was directed at finding environmental factors that are related to the switch-on of the general relativistic engine responsible for a few percent of quasars driving powerful relativistic jets. This is important since this will relate directly to constraints on the initial state and boundary conditions on numerical models of black hole driven jets.

2. **The Origin of the Event Horizon Scale Jet in M87**

Global millimeter wavelength Very Long Baseline Interferometry (VLBI) is an ambitious program to study the event horizon scale physics of nearby active galactic nuclei (AGN). The shortest wavelength receivers have been designated as the Event Horizon Telescope (EHT). It has been widely advertised that the experiment will reveal how astrophysical black holes can drive powerful jets near the event horizon – possibly proving the Blandford-Znajek mechanism that drives jets from the even horizon itself. There is only one powerful relativistic jet source that can be explored by the EHT with resolution on the order of the event horizon dimension, the jet in the enormous radio galaxy M87. Thus, M87 is the most studied object in radio jet research.

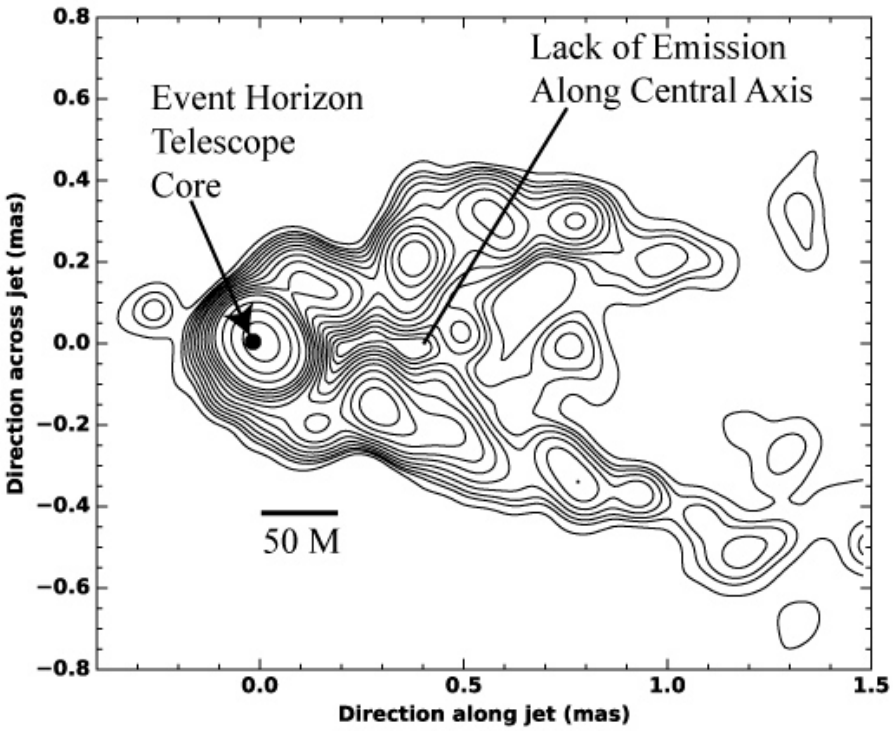


Figure 1. The 3.5 mm, global VLBI, image of Hada et al. (2016) with the EHT detected core at 1.3 mm from Akiyama et al. (2016) and Doeleman et al. (2012) overlaid. Note the extreme absence of emission along the central spine within 50 M of the black hole (the limit of the resolution of the radio image)

There is radio imaging of M87 at 3.5 mm (86 GHz) and detections with the EHT at 1.3 mm (230 GHz). The newest t and most sensitive 86 GHz published image is shown in Figure 1. There is currently no imaging capability at 230 GHz. However, it seems clear from the 86 GHz image in Figure 1 that there is a flux void along the central spine above the event horizon. More specifically, the image reveals a central flux nadir within 50M (where M is the black hole in geometrized units) of the super-massive black hole.

ICRANet adjunct professor, Brian Punsly, has been collaborating with Kazuhiro Hadaof Mizusawa VLBI Observatory, National Astronomical Observatory of Japan (the prinicipal investigator on the 86 GHz observation in Figure 1) and Martin Hardacastle of Centre for Astrophysics Research, School of m Physics, Astronomy and Mathematics, University of Hertfordshire in order to study this lack of emission of along the spine. There are two papers. Paper 1 is a collaborative, “A New Solution to the Plasma Starved Event Horizon Magnetosphere: Application to the Forked Jet in M87”. This effort was published in Astronomy and Astrophysics in 2018. It explains the physics that does not allow the event the event horizon magnetosphere to launch a powerful jet in M87, thereby producing the weak flux emission along the spine above the event horizon evident in Figure 1.In summary, for low luminosity AGN, such as M87, it is shown that accreted large scale poloidal

magnetic flux is dissipated when it approaches the event horizon and no significant magnetosphere can be obtained.

3. **Revealing the Broad Line Region in 3C 84**

The other prominent jet emanating from a nearby low luminosity AGN source is 3C 84. In the ApJ article “Revealing the Broad Line Region of NGC 1275: The Relationship to Jet Power” written with Paola Marziani (INAF, OsservatorioAstronomico di Padova, Italia), Vardha N. Bennert (Physics Department, California Polytechnic State University, San Luis Obispo), Hiroshi Nagai (National Astronomical Observatory of Japan, Osawa 2-21-1, Mitaka, Tokyo) and Mark Gurwell (Harvard-Smithsonian Center for Astrophysics, Cambridge, MA USA) we finally determine the nature of the accretion source in this famous object.

NGC 1275 is one of the most conspicuous active galactic nuclei (AGN) in thelocal Universe. The radio jet currently emits a flux density of ~10 Jy at ≈1 mmwavelengths, down from the historic high of ≈65 Jy in 1980. Yet, the nature ofthe AGN in NGC 1275 is still controversial. It has been debated whether this isa broad emission line (BEL) Seyfert galaxy, an obscured Seyfert galaxy, a narrowline radio galaxy or a BL-Lac object. We clearly demonstrate a persistent HβBEL over the last 35 years with a full width half maximum (FWHM) of 4150 - 6000 km/s. We also find a prominent PfiBEL (FWHM≈4770 km/s) and aweak CIV BEL (FWHM≈4000 km/s), Hβ/CIV~2. A far UV HST observationduring suppressed jet activity reveals a low luminosity continuum. The Hβl BELluminosity is typical of broad line Seyfert galaxies with similar far UV luminosity. X-ray observations indicate a softer ionizing continuum than expected for abroad line Seyfert galaxy with similar far UV luminosity. This is opposite of theexpectation of advection dominated accretion. The AGN continuum appears to be thermal emission from a low luminosity, optically thick, accretion flow with a low Eddington ratio, ~0.0001. The soft, weak ionizing continuum is consistentwith the relatively weak CIV BEL. Evidence that the BEL luminosity is correlated with the jet mm waveluminosity is presented. Apparently, the accretionrate regulates jet power.

4. **Powerful Gamma Ray Quasars**

In the ApJ article “The Powerful Jet and Gamma-Ray Flare of the Quasar PKS 0438-436” we describe the very powerful gamma ray flare detected by FERMI with Andrea Tramacere (Department of Astronomy, University of Geneva),, Preeti Kharb(National Centre for Radio Astrophysics, Tata Institute of Fundamental Research, Post Bag 3, Ganeshkhind, Pune 411007, India) and Paola Marziani(INAF, OsservatorioAstronomico di Padova, Italia).

PKS 0438-436 at a redshift of z = 2.856 has been previously recognized aspossessing perhaps the most luminous known synchrotron jet. Little is knownabout this source since the maximum elevation above the horizon is low for theVery Large Array (VLA). We present the first VLA radio image that detects theradio lobes. We use both the 151 MHz luminosity, as a surrogate for the isotropicradio lobe luminosity, and the lobe flux density from the radio image to estimate along term, time averaged, jet power, Q = 1.5 ±0.7 x 10^{47} ergs/s. We analyze twodeep optical spectra with strong broad emission lines and estimate the thermal bolometric luminosity of the accretion flow, L_{bol}= = 6.7±3.0 x 10^{46} ergs/s. Theratio, Q/L_{bol}=

3.3±2.6 is at the limit of this empirical metric of jet dominanceseen in radio loud quasars and this is the most luminous accretion flow to havethis limiting behavior. Despite being a very luminous blazar, it previously had noγ-ray detections (EGRET, AGILE or FERMI) until December 11 – 13, 2016 (54hours) when FERMI detected a flare that we analyze here. The isotropic apparentluminosity from 100 MeV - 100 GeV rivals the most luminous detected blazarflares (averaged over 18 hours),$\sim$5-6 x 10^{49} ergs/s. The γ-ray luminosityvaries over time by two orders of magnitude, highlighting the extreme role ofDoppler abberation and geometric alignment in producing the inverse Comptonemission.

2018 List of Publication

Punsly, B.; Hardcastle, M.; Hada, K.A new solution to the plasma starved event horizon magnetosphere. Application to the forked jet in M87 20118 A& A614 104

Punsly, Brian; Marziani, Paola; Bennert, Vardha N.; Nagai, Hiroshi; Gurwell, Mark ARevealing the Broad Line Region of NGC 1275: The Relationship to Jet Power 2018ApJ869 143

Punsly, Brian; Tramacere, Andrea; Kharb, Preeti; Marziani, Paola,The Powerful Jet and Gamma-Ray Flare of the Quasar PKS 0438–436 ApJ 2018 ApJ 869 174

Contact Information

First Name	Jorge Armando
Last Name	Rueda Hernandez
Address	ICRANet, Piazza della Repubblica 10, Pescara 65122, Italy
	Sapienza University of Rome, P.le Aldo Moro 5, Rome 00185, Italy
Phone	+39 0649914299
E-mail	jorge.rueda@icra.it

Personal Information

Date of Birth	October 24, 1982
Place of Birth	Barrancabermeja, Colombia
Citizenship	Colombian
Sex	Male

Education

2009–2010	*Posdoctoral fellowship*, Sapienza University of Rome, Rome, Italy
2006–2009	*Ph.D in Relativistic Astrophysics*, Sapienza University of Rome, Italy
	Thesis title: *Electrodynamics: from nuclei to neutron stars*
	Thesis Advisor: Prof. Remo Ruffini
2000–2005	*Physicist*, Universidad Industrial de Santander, Bucaramanga, Colombia
	Thesis title: *Equilibrium of binary systems involving one extreme object in the stationary vacuum case*
	Thesis Advisor: Prof. Jose David Sanabria Gómez

Additional Qualifications

Computer Skills

Operative Systems	Linux, Windows
Computer Languages	Fortran 77, Fortran 90, Python
Scientific Software	Mathematica, Maple, Gnuplot, LaTeX

Languages

Spanish	Native

Italian	Spoken (excellent), listen comprehension (excellent), written (excellent)
English	Spoken (good), listen comprehension (good), written (very good)
Portuguese	Spoken (good), listen comprehension (excellent), written (good)

Employment History

Administrative

2013–2017	Coordinator CAPES-ICRANet Program, International Center for Relativistic Astrophysics Network (ICRANet), Pescara, Italy
2011–current	Coordinator of several international, bilateral cooperation agreements at ICRANet, Pescara, Italy

Scientific Research and Teaching

2011–current	Faculty Professor, ICRANet, Pescara, Italy
2011–current	Researcher, International Center for Relativistic Astrophysics (ICRA), Rome, Italy
2012–2017	Professor, ICRANet-Sapienza joint appointment, University of Rome Sapienza, Rome, Italy
2006–2011	Scientific Assistant of ICRANet, Pescara, Italy
2006–2011	Substitute Professor. Sapienza University of Rome, Italy
2006	Teacher of Differential Calculus. Universidad de Los Andes, Mérida, Venezuela
2005	Teacher of Physics I. Universidad Industrial de Santander, Bucaramanga, Colombia
2005	Teacher of Waves and Oscillations. Universidad Industrial de Santander, Bucaramanga, Colombia
2004	Assistant teacher of Newtonian Mechanics. Universidad Industrial de Santander, Bucaramanga, Colombia

Advisor of Undergraduate Thesis

2015–2016	Student: Silvia Petroni, Sapienza University of Rome, Italy
2015–2016	Student: Davide Gizzi, Sapienza University of Rome, Italy

Advisor of Ph. D. Thesis

2018–2021	Student: Gulmira Nurbakyt, Al-Farabi Kazakh National University, Almaty, Kazakhstan
	Thesis in progress: Gravitational field of compact objects in general theory of relativity
2018–2021	Student: Gulnur Zhumakhanova, Al-Farabi Kazakh National University, Almaty, Kazakhstan
	Thesis in progress: Dark matter profiles in galactic bulges and halos
2017–2020	Student: Eduar Becerra, Sapienza University of Rome, Italy
	Universidad Industrial de Santander, Bucaramanga, Colombia

Thesis in progress: Neutrino-antineutrino annihilation and the genesis of the electron-positron pair plasma powering gamma-ray bursts

2017–2020 Student: Ronaldo Vieira Lobato, Sapienza University of Rome, Italy

Instituto Tecnológico de Aeronáutica, Sao Jose dos Campos, Brazil

Thesis in progress: Onthe electromagnetic emission of white dwarf and neutron star pulsars

2016–2019 Student: Stefano Campion, Sapienza University of Rome, Italy

Thesis in progress: High-energy emission from proton-proton interactions in the binary-driven hypernova model of gamma-ray bursts

2016–2019 Student: Massimo Carinci, Sapienza University of Rome, Italy

Thesis in progress: Fermionic versus bosonic dark matter

2015–2018 Student: Juan David Uribe, Sapienza University of Rome, Italy

Thesis in progress: Neutrino flavour oscillations in the binary-driven hypernova model of gamma-ray bursts

2015–2018 Student: José Rodriguez, Sapienza University of Rome, Italy

Thesis in progress: Analytic approaches to the gravitational radiation from astrophysical sources

2013–2016 Student: Laura Becerra, Sapienza University of Rome, Italy

Thesis title: Accretion in compact stars: hypercritical accretion in the induced gravitational collapse and the post-merger evolution of white dwarfs mergers

2013–2016 Student: Gabriel Gómez, Sapienza University of Rome, Italy

University of Nice Sophia-Antipolis, Nice, France

Thesis title: Astrophysical implications of the fermionic dark matter in galaxies

2012–2015 Student: Federico Cipolletta, Sapienza University of Rome, Italy

Thesis title: Structure of rotating self-gravitating figures of equilibrium in Newtonian gravity and general relativity with an emphasis on neutron stars

2012–2015 Student: Fernanda Gomes Oliveira, Sapienza University of Rome, Italy

University of Nice Sophia-Antipolis, Nice, France

Thesis title: X, gamma-ray and gravitational wave emission from short and long GRBs and their detection rates

2011–2015 Student: Diego Leonardo Cáceres Uribe, Sapienza University of Rome, Italy

Thesis title: Massive fast rotating highly magnetized white dwarfs: theory and astrophysical applications

2011–2014 Student: Jonas Pedro Pereira, Sapienza University of Rome, Italy

University of Nice Sophia-Antipolis, Nice, France

Thesis title: General relativistic electrodynamical processes in neutron stars and black holes

2011–2014 Student: Carlos Argüelles, Sapienza University of Rome, Italy

Thesis title: Fermionic dark matter on galaxy scales

2010–2013 Student: Sheyse Martins de Carvalho, Sapienza University of Rome, Italy

University of Nice Sophia-Antipolis, Nice, France

Thesis title: Finite temperature effects in the white dwarf structure and neutron star cooling in general relativity

2008–2013 Student: Riccardo Belvedere, Sapienza University of Rome, Italy

Thesis title: Static and rotating neutron stars in a general relativistic formulation of fundamental interactions and their astrophysical applications

2009–2012 Student: Kuantay Boshkayev, Sapienza University of Rome, Italy

Thesis title: Rotating white dwarfs and neutron stars in general relativity

Supervisor of Postdoctoral Fellows

2013–2015 Riccardo Belvedere, CAPES-ICRANet Program Fellow at ICRANet - Rio de Janeiro, Brazil

2013–2015 Rafael Camargo Rodrigues de Lima, CAPES-ICRANet Program Fellow at ICRANet - Pescara, Italy

2013–2015 Jaziel Goulart Coelho, CAPES-ICRANet Program Fellow at Sapienza University of Rome, Italy

Courses in Workshops and Ph. D. Schools

2018 *41th International School for Young Astronomers (ISYA)*, 23–27 July, El Socorro, Colombia

2017 *Fifth Bego Rencontres - IRAP Ph.D. Erasmus Mundus School*, 15–19 May, Nice, France

2016 *Fourth Bego Rencontres - IRAP Ph.D. Erasmus Mundus School*, 30 May-3 June, Nice, France

2014 *Third Bego Rencontres - IRAP Ph.D. Erasmus Mundus School*, 9–19 September, Nice, France

2014 *IRAP Ph.D. Erasmus Mundus School*, 11–16 May, Les Houches, France

2013 *Second Bego Rencontres - IRAP Ph.D. Erasmus Mundus School*, 16–31 May, Nice, France

2012 *IRAP Ph.D. Erasmus Mundus School*, 3–21 September, Nice, France

2011 *IRAP Ph.D. Erasmus Mundus School*, 5–16 September, Nice, France

2011 *IRAP Ph.D. Erasmus Mundus School*, May 25-June 10, Nice, France

2011 *IRAP Ph.D. Erasmus Mundus Workshop:From Nuclei to White Dwarfs and Neutron Stars*, 3–8 April, Les Houches, France

2010 *IRAP Ph.D. Erasmus Mundus School*, 1–30 September, Nice, France

Organization of Conferences

2018 *15th Marcel Grossmann Meeting on Relativistic Astrophysics*, 1-7 July, Rome, Italy

2018 *2nd Julio Garavito Armero Meeting on Relativistic Astrophysics*, 1–2 August, Bucaramanga, Colombia

2018 *The Third Zeldovich meeting*, 23–27 April, Minsk, Belarus

2017 *15th Italian-Korean Symposium on Relativistic Astrophysics*, 3–7 July, Seoul, South Korea

2017 *The Fifth Galileo-Xu Guangqi Meeting*, 25–30 June, Chengdu, China

2016 *Supernovae, Hypernovae and Binary Driven Hypernovae - An Adriatic Workshop*, 20-30 June, Pescara, Italy

2015 *14th Italian-Korean Symposium on Relativistic Astrophysics*, 20–24 July, Pescara, Italy

2015 *First Sandoval Vallarta Caribbean Meeting*, 30 November-3 December, Mexico City, Mexico

2015 *First Julio Garavito Armero Meeting on Relativistic Astrophysics*, 23–27 November, Bucaramanga, Colombia

Reviewer and/or Referee

Journal Referee *The Astrophysical Journal*, *European Journal of Physics*, *Astrophysics and Space Science*, *Researches in Astronomy and Astrophysics*, *Canadian Journal of Physics*, *Advances and Space Research*, *Mathematical Reviews of the American Mathematical Society*

Scientific Advisor National Center of Science and Technology Evaluation, Ministry of Education and Science, Kazakhstan

Projects Referee Agencia Nacional de Promoción Científica y Tecnológica and Fondo para la Investigación Científica y Tecnológica del Ministerio de Ciencia, Tecnología e Innovación Productiva, Argentina

Memberships

Member of the Italian Physical Society

Member of the American Physical Society

Member of the International Astronomical Union – Division D "High Energy Phenomena and Fundamental Physics"

Prizes and Awards

Award 2016 Distinguished Graduate, Universidad Industrial de Santander, Bucaramanga, Colombia

Fellowship 2013-2016 Senior Visiting Professor Fellowship, CAPES-ICRANet Program, Brazil

Fellowship 2010 Postdoctoral Fellowship, Sapienza University of Rome, Rome, Italy

Fellowship 2006-2009 Ph.D. Fellowship, International Relativistic Astrophysics Ph. D. Program, Sapienza University of Rome, Italy

Prize 2005 *National Prize Otto de Greiff to the best undergraduate thesis*, August 2006. Best undergraduate thesis of Natural Sciences in Colombia 2005: *Equilibrium of binary systems involving one extreme object in the stationary vacuum case*, Bucaramanga, Colombia

Award 2005 Awarded undergraduate thesis: *Equilibrium of binary systems involving one extreme object in the stationary vacuum case*, May 2005. Physics Department, Universidad Industrial de Santander, Bucaramanga, Colombia

Fellowship 2002 Distinguished student, Physics Department, Universidad Industrial de Santander, Bucaramanga, Colombia

Award High School Award for the results in the National Test of Knowledge (371/400) in 1999. Instituto Antonio Nariño, Barrancabermeja, Colombia

Prize Winner of the XV Natural Sciences Olympiad, 1999. Universidad Autónoma de Bucaramanga (UNAB)-Instituto Caldas, Bucaramanga, Colombia

Talks in Conferences

Speaker in Plenary Session

2018 *Nuevos lḿites a la naturaleza de la materia oscura a partir de observables de la Vá Láctea*, 2nd Julio Garavito Armero Meeting on Relativistic Astrophysics, Bucaramanga, Colombia

2018 *Binary-driven hypernovae and the understanding of gamma-ray bursts*, 15th Marcel Grossmann Meeting, Rome, Italy

2018 *Latest news on the induces gravitational collapse scenario of long gamma-ray bursts*, The Third Zeldovich meeting, Minsk, Belarus

2018 *Simulating the induced gravitational collapse scenario of gamma-ray bursts*, Conference on Particles and Cosmology, 5–9 March, Singapore

2017 *Â£Hacia dńde van la astronomá y la astrofísica en Colombia?*, 20 October, Universidad Industrial de Santander, Bucaramanga, Colombia

2017 *Binary-driven hypernovae as multimesseger astrophysical systems*, THESEUS Workshop, 5–6 October, Naples, Italy

2017 *News on neutrino astrophysics from gamma-ray bursts*, 9th European Summer School on Experimental Nuclear Astrophysics, 17–24 September, Santa Tecla, Italy

2017 *On the detection rate of the gravitational-wave emission of short and long gamma-ray bursts*,The Fifth Galileo-Xu Guangqi Meeting, 25–30 June, Chengdu, China

2017 *On the rate and gravitational wave emission of short and long GRBs*, 15th Italian-Korean Symposium on Relativistic Astrophysics, 3–7 July, Seoul, South Korea

2015 *On the binary systems associated with short and long GRBs and their detectability*, 14th Marcel Grossmann Meeting, Rome, Italy

2012 *Extreme systems in relativistic astrophysics*, 3rd Colombian Meeting on Astronomy and Astrophysics, Bucaramanga, Colombia

2012 *Strong, weak, electromagnetic, and gravitational interactions in neutron stars*, 13th Marcel Grossmann Meeting, Stockholm, Sweden

2011 *On the Einstein-Maxwell-Thomas-Fermi equations for white dwarfs and neutron stars*, 3rd Galileo-Xu Guangqi Meeting, Beijing, China

2009 *A the self-consistent treatments of neutron star configurations*, 11th Italian-Korean Symposium on Relativistic Astrophysics, Seoul, Korea

2009 *The role of compressed electrons: from nuclei to neutron stars*, 1st Galileo-Xu Guangqi Meeting, Shanghai, China

Speaker in Ordinary Sessions

2018 *15th Marcel Grossmann Meeting on Relativistic Astrophysics*, 1-7 July, Rome, Italy

2018 *2nd Julio Garavito Armero Meeting on Relativistic Astrophysics*, 1–2 August, Bucaramanga, Colombia

2018 *The Third Zeldovich meeting*, 23–27 April, Minsk, Belarus

2017 *15th Italian-Korean Symposium on Relativistic Astrophysics*, 3–7 July, Seoul, South Korea

2017 *The Fifth Galileo-Xu Guangqi Meeting*, 25–30 June, Chengdu, China

2016 *Supernovae, Hypernovae and Binary Driven Hypernovae - An Adriatic Workshop*, Pescara, Italy

2015 *14th Italian-Korean Symposium on Relativistic Astrophysics*, Pescara, Italy

2013 *13th Italian-Korean Symposium on Relativistic Astrophysics*, Seoul, South Korea

2012 *26th Texas Symposium on Relativistic Astrophysics*, Sao Paulo, Brazil

2012 *III National Meeting on GRBs "Lampi su Napoli"*, Naples, Italy

2012 *39th COSPAR Assembly*, Mysore, India

2012 *13th Marcel Grossmann Meeting*, Stockholm, Sweden

2011 *12th Italian-Korean Symposium on Relativistic Astrophysics*, Pescara, Italy

2011 *Recent News from the Mev, GeV and TeV Gamma-Ray Domains*, Pescara, Italy

2010 *2nd Galileo-Xu Guangqi Meeting*, Ventimiglia, Italy

2009 *6th Italian-Sino Workshop on Relativistic Astrophysics*, Pescara, Italy

2009 *1st Sobral Meeting*, Fortaleza, Brazil

2008 *3rd Stueckelberg Workshop on Relativistic Field Theories*, Pescara, Italy

2009 *12th Marcel Grossmann Meeting On General Relativity*, Paris, France

2008 *APS April Meeting*, St. Louis, USA

2007 *4th Italian-Sino Workshop on Relativistic Astrophysics*, Pescara, Italy

2006 *Centro de Física Fundamental-Universidad de Los Andes*, Merida, Venezuela

2005 *Laboratorio de Astronomía y Física Teórica-Universidad del Zulia*, Maracaibo, Venezuela

2005 *Primera Reunión Colombo-Venezolana de Relatividad y Gravitación*, Cartagena, Colombia

Outreach

2018 *Three-dimensional view of hypernovae and gamma-ray bursts.* Delivered at the inauguration of the exhibition "Einstein Fermi e Heisenberg e la nascita della Astrofisica Relativistica" e "ICRANet e Cina", 12 December 2017 - 12 January 2018, Fondazione Marco Besso, Roma, Italy

2017 *"Vida" después de la "muerte": estrellas de neutrones y las explosiones más potentes del Universo.* Delivered in the "Café Científico" at Casa del Libro Total, Bucaramanga, Colombia

2017 *"Vida" después de la "muerte": estrellas de neutrones y las explosiones más potentes del Universo.* Delivered at Instituto Antonio Nariño, Barrancabermeja, Colombia

2017 *Simulando le onde gravitazionali.* Delivered at "La Notte dei Ricercatori", Pescara, Italy

2016 *Dai nuclei atomici alle stelle di neutroni ai lampi di raggi gamma.* Delivered at "La Notte dei Ricercatori", Pescara, Italy

2016 *Dai nuclei atomici alle stelle di neutroni ai lampi di raggi gamma.* Delivered at "La Notte dei Ricercatori", Pescara, Italy

2015 *Stelle di neutroni nelle esplosioni più potenti dell'universo: supernove e lampi di raggi gamma.* Delivered at "La Notte dei Ricercatori", Pescara, Italy

2014 *Dai nuclei alle pulsar ai gamma-ray bursts.* Delivered at the ICRANet for high-school students, Pescara, Italy

Scientific Interests

- *Nuclear and atomic astrophysics*: I apply nuclear and atomic physics in the description of the interior of compact stars such as white dwarfs and neutron stars. I focus on the properties of nuclear matter under extreme conditions of density and pressure found in these objects. The matter equation of state in compact star interiors is studied in detail taking into account all the interactions between the constituents within a full relativistic framework.

- *White dwarf and neutron star physics and astrophysics*: I focus on the construction of a self-consistent theory of self-gravitating systems obeying relativistic quantum statistics, electromagnetic, weak and strong interactions within the framework of general relativity. Particular attention is given to the study of the effects of the electromagnetic interactions coupled to gravity, which lead for instance to macroscopic gravito-polarization in neutron stars. In the case of white dwarfs, we study the macroscopic influence of the microphysical charge screening between the nuclei lattice and the electronic fluid. The structure properties e.g. the mass-radius relations of both white dwarfs and neutron stars are studied within the above framework. The effects of rotation as well as of high-temperatures on the structure of white dwarfs and neutron stars are also investigated.

- *Radiation mechanisms of white dwarfs and neutron stars*: I am also interested in the magnetospheres white dwarfs and neutron stars. Both energetics and spectrum of different radiation mechanisms operating in the magnetosphere of compact objects are analyzed and applied to the observations of white dwarfs and neutron star pulsars, soft gamma ray repeaters, anomalous X-ray pulsars, and similar systems.

- *Critical fields in neutron stars and black holes*: Another topic I am interested at are the conditions under which critical electromagnetic fields can develop in neutron stars and black holes. In particular, the evolution of the electromagnetic fields during the gravitational collapse of a neutron star to a black hole is investigated and applied to the physics of extreme astrophysical phenomena such as gamma-ray bursts. The general properties of electrovacuum spacetimes e.g. the Kerr-Newman one are also studied from the theoretical viewpoint. In particular, the physics and astrophysics related to the "dyadosphere" of the Reissner-Nordström black hole and the "dyadotorus" of the Kerr-Newman black hole are addressed.

- *Critical fields and nonlinear electrodynamics effects in neutron stars and black holes*: Following the above lines, I study the effects of nonlinear electrodynamics, minimally coupled to gravity. Analytic and numerical solutions to the Einstein-Maxwell equations representing black holes or the exterior field of a compact star are obtained and analyzed. Some astrophysical applications are studied in detail e.g. the magnetosphere of a neutron star or the extractable energy of black holes and the emission of gamma-ray bursts.

- *Exact electrovacuum solutions of the Einstein-Maxwell equations in astrophysics*: I pay particular attention to analyze the ability of analytic exact solutions of the Einstein-Maxwell equations to describe the exterior spacetime of compact stars such as neutron stars. I address in detail the problem of matching between interior and exterior spacetimes. The effect of the quadrupole moment on the properties of the spacetime is also investigated. I apply exact solutions in astrophysics, e.g. in the dynamics of particles around compact stars and its relevance in astrophysical systems such as X-ray binaries.

- *Physics and astrophysics of gamma-ray bursts*: I give special attention to study the progenitors and emission mechanisms leading to the most energetic systems observed in the Universe, the gamma-ray bursts. Focus is given to the GRB-Supernova connection and to short GRBs. I study the progenitors of these astrophysical phenomena with emphasis on the role played by neutron stars, accretion disks and binary systems.

- *Dark matter*: I focus on the description of the distribution of dark matter particles in galaxies within a self-consistent general relativistic framework. Special emphasis is given to self-gravitating systems of massive keV fermions, their distribution at all galactic scales, and the consequences of their existence in cosmology.

Publication List Jorge A. Rueda H.

[1] R. Ruffini, J. A. Rueda, L. Becerra, C. L. Bianco, Y. C. Chen, C. Cherubini, S. Filippi, M. Karlica, J. D. Melon Fuksman, R. Moradi, et al., submitted to Phys. Rev. Lett. (2018), arXiv:1811.01839.

[2] R. Yunis, C. R. Argüelles, N. E. Mavromatos, A. Moliné, A. Krut, J. A. Rueda, and R. Ruffini, submitted to J. Cosm. Astrop. Phys. (2018), arXiv:1810.05756.

[3] J. A. Rueda, R. Ruffini, Y. Wang, C. L. Bianco, J. M. Blanco-Iglesias, M. Karlica, P. Loren-Aguilar, R. Moradi, and N. Sahakyan, submitted to J. Cosm. Astrop. Phys. (2018), arXiv:1807.07905.

[4] R. Ruffini, R. Moradi, J. A. Rueda, Y. Wang, Y. Aimuratov, L. Becerra, C. L. Bianco, Y.-C. Chen, C. Cherubini, S. Filippi, et al., ApJ, in press (2018), arXiv:1803.05476.

[5] L. Becerra, C. L. Ellinger, C. L. Fryer, J. A. Rueda, and R. Ruffini, submitted to ApJ (2018), arXiv:1803.04356.

[6] R. Ruffini, M. Muccino, Y. Aimuratov, M. Amiri, C. L. Bianco, Y.-C. Chen, B. Eslam Panah, G. J. Mathews, R. Moradi, G. B. Pisani, et al., submitted to ApJ (2018), arXiv:1802.07552.

[7] R. Ruffini, L. Becerra, C. L. Bianco, Y. C. Chen, M. Karlica, M. Kovacevic, J. D. Melon Fuksman, R. Moradi, M. Muccino, G. B. Pisani, et al., ApJ, in press (2017), arXiv:1712.05001.

[8] R. Ruffini, M. Karlica, N. Sahakyan, J. A. Rueda, Y. Wang, G. J. Mathews, C. L. Bianco, and M. Muccino, ApJ, in press (2017), arXiv:1712.05000.

[9] J. A. Rueda, R. Ruffini, Y. Wang, Y. Aimuratov, U. Barres de Almeida, C. L. Bianco, Y. C. Chen, R. V. Lobato, C. Maia, D. Primorac, et al., J. Cosm. Astrop. Phys. **10**, 006 (2018), 1802.10027.

[10] R. Ruffini, Y. Wang, Y. Aimuratov, U. B. de Almeida, L. Becerra, C. L. Bianco, Y. C. Chen, M. Karlica, M. Kovacevic, L. Li, et al., VizieR Online Data Catalog **185** (2018).

[11] C. R. Argüelles, A. Krut, J. A. Rueda, and R. Ruffini, Physics of the Dark Universe **21**, 82 (2018), 1810.00405.

[12] J. A. Rueda, R. Ruffini, Y. Wang, U. Barres de Almeida, C. L. Bianco, Y. C. Chen, R. V. Lobato, C. Maia, D. Primorac, R. Moradi, et al., in *Talk presented at The Fifteenth Marcel Grossmann Meeting - MG15, University of Rome "La Sapienza" - Rome, July 1-7, 2018* (2018).

[13] R. Ruffini, J. Rodriguez, M. Muccino, J. A. Rueda, Y. Aimuratov, U. Barres de Almeida, L. Becerra, C. L. Bianco, C. Cherubini, S. Filippi, et al., ApJ **859**, 30 (2018).

[14] L. Becerra, J. A. Rueda, P. Lorén-Aguilar, and E. García-Berro, ApJ **857**, 134 (2018), 1804.01275.

[15] J. F. Rodríguez, J. A. Rueda, and R. Ruffini, J. Cosm. Astrop. Phys. **2**, 030 (2018), 1706.07704.

[16] A. Krut, C. R. Argüelles, J. A. Rueda, and R. Ruffini, in *European Physical Journal Web of Conferences* (2018), vol. 168 of *European Physical Journal Web of Conferences*, p. 04015.

[17] J. D. Melon Fuksman, L. Becerra, C. L. Bianco, M. Karlica, M. Kovacevic, R. Moradi, M. Muccino, G. B. Pisani, D. Primorac, J. A. Rueda, et al., in *European Physical Journal Web of Conferences* (2018), vol. 168 of *European Physical Journal Web of Conferences*, p. 04009.

[18] D. Primorac, R. Ruffini, G. B. Pisani, Y. Aimuratov, C. L. Biancol, M. Karlica, J. D. Melon Fuksman, R. Moradi, M. Muccino, A. V. Penacchioni, et al., in *European Physical Journal Web of Conferences* (2018), vol. 168 of *European Physical Journal Web of Conferences*, p. 04008.

[19] G. B. Pisani, R. Ruffini, Y. Aimuratov, C. L. Bianco, M. Karlica, M. Kovacevic, R. Moradi, M. Muccino, A. V. Penacchioni, D. Primorac, et al., in *European Physical Journal Web of Conferences* (2018), vol. 168 of *European Physical Journal Web of Conferences*, p. 04002.

[20] J. F. Rodríguez, J. A. Rueda, and R. Ruffini, in *European Physical Journal Web of Conferences* (2018), vol. 168 of *European Physical Journal Web of Conferences*, p. 02006, 1706.06440.

[21] L. M. Becerra, C. Bianco, C. Fryer, J. Rueda, and R. Ruffini, in *European Physical Journal Web of Conferences* (2018), vol. 168 of *European Physical Journal Web of Conferences*, p. 02005.

[22] M. Muccino, R. Ruffini, Y. Aimuratov, L. M. Becerra, C. L. Bianco, M. Karlica, M. Kovacevic, J. D. Melon Fuksman, R. Moradi, A. V. Penacchioni, et al., in *European Physical Journal Web of Conferences* (2018), vol. 168 of *European Physical Journal Web of Conferences*, p. 01015.

[23] J. A. Rueda, R. Ruffini, J. F. Rodriguez, M. Muccino, Y. Aimuratov, U. Barres de Almeida, L. Becerra, C. L. Bianco, C. Cherubini, S. Filippi, et al., in *European Physical Journal Web of Conferences* (2018), vol. 168 of *European Physical Journal Web of Conferences*, p. 01006.

[24] L. Becerra, M. M. Guzzo, F. Rossi-Torres, J. A. Rueda, R. Ruffini, and J. D. Uribe, ApJ **852**, 120 (2018), 1712.07210.

[25] R. Ruffini, Y. Wang, Y. Aimuratov, U. Barres de Almeida, L. Becerra, C. L. Bianco, Y. C. Chen, M. Karlica, M. Kovacevic, L. Li, et al., ApJ **852**, 53 (2018), 1704.03821.

[26] R. Ruffini, Y. Aimuratov, C. L. Bianco, Y. C. Chen, D. M. Fuksman, M. Karlica, R. Moradi, D. Primorac, J. A. Rueda, N. Sahakyan, et al., GRB Coordinates Network, Circular Service, No. 23066, #1 (2018) **23066** (2018).

[27] R. Ruffini, Y. Aimuratov, C. L. Bianco, Y. C. Chen, D. M. Fuksman, M. Karlica, R. Moradi, D. Primorac, J. A. Rueda, N. Sahakyan, et al., GRB Coordinates Network, Circular Service, No. 23019, #1 (2018) **23019** (2018).

[28] L. G. Gómez and J. A. Rueda, Phys. Rev. D **96**, 063001 (2017), 1706.06801.

[29] F. Cipolletta, C. Cherubini, S. Filippi, J. A. Rueda, and R. Ruffini, Communications in Computational Physics **22**, 863

(2017).
[30] L. M. Becerra, C. L. Fryer, J. A. Rueda, and R. Ruffini, in *Revista Mexicana de Astronomia y Astrofisica Conference Series* (2017), vol. 49 of *Revista Mexicana de Astronomia y Astrofisica Conference Series*, pp. 83–83.
[31] F. Cipolletta, C. Cherubini, S. Filippi, J. A. Rueda, and R. Ruffini, Phys. Rev. D **96**, 024046 (2017), 1612.02207.
[32] Y. Aimuratov, R. Ruffini, M. Muccino, C. L. Bianco, A. V. Penacchioni, G. B. Pisani, D. Primorac, J. A. Rueda, and Y. Wang, ApJ **844**, 83 (2017), 1704.08179.
[33] M. Malheiro, J. G. Coelho, D. L. Cáceres, R. C. R. de Lima, R. V. Lobato, J. A. Rueda, and R. Ruffini, in *Journal of Physics Conference Series* (2017), vol. 861 of *Journal of Physics Conference Series*, p. 012003.
[34] D. L. Cáceres, S. M. de Carvalho, J. G. Coelho, R. C. R. de Lima, and J. A. Rueda, MNRAS **465**, 4434 (2017), 1611.07653.
[35] J. G. Coelho, D. L. Cáceres, R. C. R. de Lima, M. Malheiro, J. A. Rueda, and R. Ruffini, A&A **599**, A87 (2017).
[36] R. C. R. de Lima, J. G. Coelho, M. Malheiro, J. A. Rueda, and R. Ruffini, in *International Journal of Modern Physics Conference Series* (2017), vol. 45 of *International Journal of Modern Physics Conference Series*, p. 1760030.
[37] R. Ruffini, Y. Aimuratov, L. Becerra, C. L. Bianco, M. Karlica, M. Kovacevic, J. D. Melon Fuksman, R. Moradi, M. Muccino, A. V. Penacchioni, et al., International Journal of Modern Physics D **26**, 1730019-367 (2017).
[38] J. A. Rueda, Y. Aimuratov, U. B. de Almeida, L. Becerra, C. L. Bianco, C. Cherubini, S. Filippi, M. Karlica, M. Kovacevic, J. D. M. Fuksman, et al., International Journal of Modern Physics D **26**, 1730016-309 (2017).
[39] N. E. Mavromatos, C. R. Argüelles, R. Ruffini, and J. A. Rueda, International Journal of Modern Physics D **26**, 1730007 (2017).
[40] L. G. Gómez, C. R. Argüelles, V. Perlick, J. A. Rueda, and R. Ruffini, Phys. Rev. D **94**, 123004 (2016), 1610.03442.
[41] G. B. Pisani, R. Ruffini, Y. Aimuratov, C. L. Bianco, M. Kovacevic, R. Moradi, M. Muccino, A. V. Penacchioni, J. A. Rueda, S. Shakeri, et al., ApJ **833**, 159 (2016), 1610.05619.
[42] L. Becerra, C. L. Bianco, C. L. Fryer, J. A. Rueda, and R. Ruffini, ApJ **833**, 107 (2016), 1606.02523.
[43] R. Ruffini, J. A. Rueda, M. Muccino, Y. Aimuratov, L. M. Becerra, C. L. Bianco, M. Kovacevic, R. Moradi, F. G. Oliveira, G. B. Pisani, et al., ApJ **832**, 136 (2016), 1602.02732.
[44] R. Ruffini, M. Muccino, Y. Aimuratov, C. L. Bianco, C. Cherubini, M. Enderli, M. Kovacevic, R. Moradi, A. V. Penacchioni, G. B. Pisani, et al., ApJ **831**, 178 (2016), 1607.02400.
[45] C. R. Argüelles, N. E. Mavromatos, J. A. Rueda, and R. Ruffini, J. Cosm. Astrop. Phys. **4**, 038 (2016), 1502.00136.
[46] K. A. Boshkayev, J. A. Rueda, B. A. Zhami, Z. A. Kalymova, and G. S. Balgymbekov, in *International Journal of Modern Physics Conference Series* (2016), vol. 41 of *International Journal of Modern Physics Conference Series*, p. 1660129, 1510.02024.
[47] R. Ruffini, C. Fryer, M. Muccino, and J. Rueda Hernandez, in *APS Meeting Abstracts* (2016), p. M13.001.
[48] J. Rueda Hernandez, C. Fryer, M. Muccino, and R. Ruffini, in *APS Meeting Abstracts* (2016), p. H15.007.
[49] R. Ruffini, Y. Aimuratov, L. Becerra, C. L. Bianco, M. Kovacevic, R. Moradi, M. Muccino, A. V. Penacchioni, G. B. Pisani, D. Primorac, et al., GRB Coordinates Network, Circular Service, No. 19456, #1 (2016) **19456** (2016).
[50] K. A. Boshkayev, J. A. Rueda, and B. A. Zhami, in *Gravitation, Astrophysics, and Cosmology*, edited by J.-P. Hsu and et al. (2016), pp. 189–190, 1512.00052.
[51] C. L. Fryer, F. G. Oliveira, J. A. Rueda, and R. Ruffini, Physical Review Letters **115**, 231102 (2015), 1505.02809.
[52] A. Krut, C. R. Argüelles, J. Rueda, and R. Ruffini, in *American Institute of Physics Conference Series* (2015), vol. 1693 of *American Institute of Physics Conference Series*, p. 070005.
[53] L. G. Gómez and J. A. Rueda, in *American Institute of Physics Conference Series* (2015), vol. 1693 of *American Institute of Physics Conference Series*, p. 060003.
[54] C. R. Argüelles, R. Ruffini, J. A. Rueda, and N. E. Mavromatos, in *American Institute of Physics Conference Series* (2015), vol. 1693 of *American Institute of Physics Conference Series*, p. 060002.
[55] R. C. R. de Lima, J. G. Coelho, J. A. Rueda, M. Malheiro, and R. Ruffini, in *American Institute of Physics Conference Series* (2015), vol. 1693 of *American Institute of Physics Conference Series*, p. 030009.
[56] R. Belvedere, F. Cipolletta, C. Cherubini, S. M. de Carvalho, S. Filippi, R. Negreiros, J. P. Pereira, J. A. Rueda, and R. Ruffini, in *American Institute of Physics Conference Series* (2015), vol. 1693 of *American Institute of Physics Conference Series*, p. 030001.
[57] L. Becerra, C. L. Bianco, F. Cipolletta, M. Enderli, C. L. Fryer, L. Izzo, M. Kovacevic, R. C. R. de Lima, M. Muccino, F. G. de Oliveira, et al., in *American Institute of Physics Conference Series* (2015), vol. 1693 of *American Institute of Physics Conference Series*, p. 020002.
[58] R. Ruffini, Y. Aimuratov, V. Belinski, C. L. Bianco, M. Enderli, L. Izzo, M. Kovacevic, G. J. Mathews, R. Moradi, M. Muccino, et al., in *American Institute of Physics Conference Series* (2015), vol. 1693 of *American Institute of Physics Conference Series*, p. 020001.
[59] A. Mesquita, M. Razeira, R. Ruffini, J. A. Rueda, D. Hadjimichef, R. O. Gomes, and C. A. Z. Vasconcellos, Astronomische Nachrichten **336**, 880 (2015).
[60] R. Ruffini, Y. Aimuratov, C. L. Bianco, M. Enderli, M. Kovacevic, R. Moradi, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, et al., International Journal of Modern Physics A **30**, 1545023-372 (2015).
[61] L. Becerra, F. Cipolletta, C. L. Fryer, J. A. Rueda, and R. Ruffini, ApJ **812**, 100 (2015), 1505.07580.
[62] 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, et al., ApJ **808**, 190 (2015), 1412.1018.
[63] F. Cipolletta, C. Cherubini, S. Filippi, J. A. Rueda, and R. Ruffini, Phys. Rev. D **92**, 023007 (2015), 1506.05926.
[64] R. Ruffini, C. R. Argüelles, and J. A. Rueda, MNRAS **451**, 622 (2015), 1409.7365.
[65] Y. Wang, R. Ruffini, M. Kovacevic, C. L. Bianco, M. Enderli, M. Muccino, A. V. Penacchioni, G. B. Pisani, and J. A.

Rueda, Astronomy Reports **59**, 667 (2015).
[66] R. Ruffini, L. Izzo, C. L. Bianco, J. A. Rueda, C. Barbarino, H. Dereli, M. Enderli, M. Muccino, A. V. Penacchioni, G. B. Pisani, et al., Astronomy Reports **59**, 626 (2015), 1311.7432.
[67] 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, Astronomy Reports **59**, 581 (2015).
[68] K. Boshkayev, J. Rueda, and M. Muccino, Astronomy Reports **59**, 441 (2015).
[69] J. P. Pereira, J. G. Coelho, and J. A. Rueda, Phys. Rev. D **91**, 069901 (2015).
[70] J. P. Pereira and J. A. Rueda, Phys. Rev. D **91**, 064048 (2015), 1503.02441.
[71] J. P. Pereira and J. A. Rueda, ApJ **801**, 19 (2015), 1501.02621.
[72] S. M. de Carvalho, J. A. Rueda, and R. Ruffini, in *Thirteenth Marcel Grossmann Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics and Relativistic Field Theories*, edited by K. Rosquist (2015), pp. 2481–2483.
[73] K. Boshkayev, J. A. Rueda, R. Ruffini, and I. Siutsou, in *Thirteenth Marcel Grossmann Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics and Relativistic Field Theories*, edited by K. Rosquist (2015), pp. 2468–2474, 1503.04171.
[74] K. Boshkayev, J. A. Rueda, and R. Ruffini, in *Thirteenth Marcel Grossmann Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics and Relativistic Field Theories*, edited by K. Rosquist (2015), pp. 2295–2300, 1503.04176.
[75] G. B. Pisani, L. Izzo, R. Ruffini, C. L. Bianco, M. Muccino, A. V. Penacchioni, J. A. Rueda, and Y. Wang, in *Thirteenth Marcel Grossmann Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics and Relativistic Field Theories*, edited by K. Rosquist (2015), pp. 1789–1793.
[76] A. V. Penacchioni, R. Ruffini, C. L. Bianco, L. Izzo, M. Muccino, G. B. Pisani, and J. A. Rueda, in *Thirteenth Marcel Grossmann Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics and Relativistic Field Theories*, edited by K. Rosquist (2015), pp. 1768–1772.
[77] J. A. Rueda and R. Ruffini, in *Thirteenth Marcel Grossmann Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics and Relativistic Field Theories*, edited by K. Rosquist (2015), pp. 191–209.
[78] R. Belvedere, J. A. Rueda, and R. Ruffini, ApJ **799**, 23 (2015), 1411.2621.
[79] R. Ruffini, Y. Wang, M. Enderli, M. Muccino, M. Kovacevic, C. L. Bianco, A. V. Penacchioni, G. B. Pisani, and J. A. Rueda, ApJ **798**, 10 (2015), 1405.5723.
[80] R. Ruffini, Y. Aimuratov, U. Barres, R. Belvedere, C. L. Bianco, M. Enderli, M. Kovacevic, R. Moradi, M. Muccino, A. Penacchioni, et al., GRB Coordinates Network, Circular Service, No. 18555, #1 (2015) **18555** (2015).
[81] R. Ruffini, C. L. Bianco, M. Enderli, M. Kovacevic, L. Li, M. Muccino, R. Moradi, G. B. Pisani, J. A. Rueda, and Y. Wang, GRB Coordinates Network, Circular Service, No. 18296, #1 (2015) **18296** (2015).
[82] R. Ruffini, C. L. Bianco, M. Enderli, M. Kovacevic, M. Muccino, G. B. Pisani, J. A. Rueda, and Y. Wang, GRB Coordinates Network, Circular Service, No. 17871, #1 (2015) **17871** (2015).
[83] F. G. Oliveira, J. A. Rueda, and R. Ruffini, in *Gravitational Wave Astrophysics*, edited by C. F. Sopuerta (2015), vol. 40 of *Astrophysics and Space Science Proceedings*, p. 43.
[84] L. M. Becerra Bayona, C. L. Bianco, M. Enderli, C. L. Fryer, L. Izzo, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda Hernandez, R. Ruffini, et al., in *Proceedings of Swift: 10 Years of Discovery (SWIFT 10), held 2-5 December 2014 at La Sapienza University, Rome, Italy. Online at ¡A href="http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=233"¿http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=233¡/A¿, id.171* (2014), p. 171.
[85] G. B. Pisani, R. Ruffini, M. Muccino, C. L. Bianco, M. Enderli, A. V. Penacchioni, J. A. Rueda Hernandez, Y. Wang, E. Zaninoni, and L. Izzo, in *Proceedings of Swift: 10 Years of Discovery (SWIFT 10), held 2-5 December 2014 at La Sapienza University, Rome, Italy. Online at ¡A href="http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=233"¿http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=233¡/A¿, id.97* (2014), p. 97.
[86] M. Muccino, F. G. Oliveira, R. Ruffini, M. Kovacevic, L. Izzo, J. A. Rueda, C. L. Bianco, M. Enderli, A. V. Penacchioni, G. B. Pisani, et al., in *Proceedings of Swift: 10 Years of Discovery (SWIFT 10), held 2-5 December 2014 at La Sapienza University, Rome, Italy. Online at ¡A href="http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=233"¿http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=233¡/A¿, id.86* (2014), p. 86.
[87] M. Enderli, C. L. Bianco, L. Izzo, M. Kovacevic, M. Muccino, G. B. Pisani, J. A. Rueda Hernandez, R. Ruffini, and Y. Wang, in *Proceedings of Swift: 10 Years of Discovery (SWIFT 10), held 2-5 December 2014 at La Sapienza University, Rome, Italy. Online at ¡A href="http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=233"¿http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=233¡/A¿, id.73* (2014), p. 73.
[88] J. P. Pereira, J. G. Coelho, and J. A. Rueda, Phys. Rev. D **90**, 123011 (2014), 1412.1848.
[89] S. M. de Carvalho, R. Negreiros, J. A. Rueda, and R. Ruffini, Phys. Rev. C **90**, 055804 (2014), 1411.5316.
[90] K. Boshkayev, D. Bini, J. Rueda, A. Geralico, M. Muccino, and I. Siutsou, Gravitation and Cosmology **20**, 233 (2014), 1412.8214.
[91] J. G. Coelho, R. M. Marinho, M. Malheiro, R. Negreiros, D. L. Cáceres, J. A. Rueda, and R. Ruffini, ApJ **794**, 86 (2014), 1306.4658.
[92] C. L. Fryer, J. A. Rueda, and R. Ruffini, ApJL **793**, L36 (2014), 1409.1473.
[93] R. Belvedere, J. A. Rueda, and R. Ruffini, Journal of Korean Physical Society **65**, 897 (2014).
[94] S. M. de Carvalho, J. A. Rueda, and R. Ruffini, Journal of Korean Physical Society **65**, 861 (2014).
[95] K. Boshkayev, J. A. Rueda, R. Ruffini, and I. Siutsou, Journal of Korean Physical Society **65**, 855 (2014), 1412.8208.
[96] D. L. Cáceres, J. A. Rueda, and R. Ruffini, Journal of Korean Physical Society **65**, 846 (2014).

[97] M. Razeira, A. Mesquita, C. A. Z. Vasconcellos, R. Ruffini, J. A. Rueda, and R. O. Gomes, Astronomische Nachrichten **335**, 739 (2014).

[98] M. Razeira, A. Mesquita, C. A. Z. Vasconcellos, R. Ruffini, J. A. Rueda, and R. O. Gomes, Astronomische Nachrichten **335**, 733 (2014).

[99] R. Ruffini, L. Izzo, M. Muccino, G. B. Pisani, J. A. Rueda, Y. Wang, C. Barbarino, C. L. Bianco, M. Enderli, and M. Kovacevic, A&A **569**, A39 (2014), 1404.1840.

[100] J. P. Pereira, H. J. Mosquera Cuesta, J. A. Rueda, and R. Ruffini, Physics Letters B **734**, 396 (2014).

[101] F. G. Oliveira, J. A. Rueda, and R. Ruffini, ApJ **787**, 150 (2014), 1205.6915.

[102] R. Ruffini, M. Muccino, C. L. Bianco, M. Enderli, L. Izzo, M. Kovacevic, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, and Y. Wang, A&A **565**, L10 (2014), 1404.3946.

[103] J. A. Rueda, R. Ruffini, Y.-B. Wu, and S.-S. Xue, Phys. Rev. C **89**, 035804 (2014), 1305.1974.

[104] S. M. de Carvalho, M. Rotondo, J. A. Rueda, and R. Ruffini, Phys. Rev. C **89**, 015801 (2014).

[105] R. Belvedere, K. Boshkayev, J. A. Rueda, and R. Ruffini, Nuclear Physics A **921**, 33 (2014), 1307.2836.

[106] R. Ruffini, C. L. Bianco, M. Enderli, M. Kovacevic, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, and Y. Wang, GRB Coordinates Network, Circular Service, No. 15794, #1 (2014) **15794** (2014).

[107] R. Ruffini, C. L. Bianco, M. Enderli, M. Kovacevic, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, and Y. Wang, GRB Coordinates Network, Circular Service, No. 15707, #1 (2014) **15707** (2014).

[108] R. Ruffini, C. R. Argüelles, B. M. O. Fraga, A. Geralico, H. Quevedo, J. A. Rueda, and I. Siutsou, International Journal of Modern Physics D **22**, 1360008 (2013).

[109] J. A. Rueda and R. Ruffini, International Journal of Modern Physics D **22**, 1360007 (2013).

[110] J. A. Rueda, K. Boshkayev, L. Izzo, R. Ruffini, P. Lorén-Aguilar, B. Külebi, G. Aznar-Siguán, and E. García-Berro, ApJL **772**, L24 (2013), 1306.5936.

[111] D. Pugliese, H. Quevedo, J. A. Rueda H., and R. Ruffini, Phys. Rev. D **88**, 024053 (2013), 1305.4241.

[112] C. Argüelles, I. Siutsou, R. Ruffini, J. Rueda, and B. Machado, in *Probes of Dark Matter on Galaxy Scales* (2013), vol. 1.

[113] L. Izzo, G. B. Pisani, M. Muccino, J. A. Rueda, Y. Wang, C. L. Bianco, A. V. Penacchioni, and R. Ruffini, in *EAS Publications Series*, edited by A. J. Castro-Tirado, J. Gorosabel, and I. H. Park (2013), vol. 61 of *EAS Publications Series*, pp. 595–597, 1210.8034.

[114] K. Boshkayev, L. Izzo, J. A. Rueda Hernandez, and R. Ruffini, A&A **555**, A151 (2013), 1305.5048.

[115] G. B. Pisani, L. Izzo, R. Ruffini, C. L. Bianco, M. Muccino, A. V. Penacchioni, J. A. Rueda, and Y. Wang, A&A **552**, L5 (2013), 1304.1764.

[116] A. V. Penacchioni, R. Ruffini, C. L. Bianco, L. Izzo, M. Muccino, G. B. Pisani, and J. A. Rueda, A&A **551**, A133 (2013), 1301.6014.

[117] S. M. de Carvalho, J. A. Rueda, M. Rotondo, C. Argüelles, and R. Ruffini, in *International Journal of Modern Physics Conference Series* (2013), vol. 23 of *International Journal of Modern Physics Conference Series*, pp. 244–247, 1312.2434.

[118] K. Boshkayev, J. Rueda, and R. Ruffini, in *International Journal of Modern Physics Conference Series* (2013), vol. 23 of *International Journal of Modern Physics Conference Series*, pp. 193–197.

[119] R. Belvedere, J. A. Rueda, and R. Ruffini, in *International Journal of Modern Physics Conference Series* (2013), vol. 23 of *International Journal of Modern Physics Conference Series*, pp. 185–192.

[120] K. Boshkayev, J. A. Rueda, R. Ruffini, and I. Siutsou, ApJ **762**, 117 (2013), 1204.2070.

[121] R. Ruffini, C. L. Bianco, M. Enderli, M. Kovacevic, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, and Y. Wang, GRB Coordinates Network, Circular Service, No. 15576, #1 (2013) **15576** (2013).

[122] R. Ruffini, C. L. Bianco, M. Enderli, M. Kovacevic, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, and Y. Wang, GRB Coordinates Network, Circular Service, No. 15560, #1 (2013) **15560** (2013).

[123] R. Ruffini, C. L. Bianco, M. Enderli, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, N. Sahakyan, Y. Wang, and L. Izzo, GRB Coordinates Network, Circular Service, No. 15322, #1 (2013) **15322** (2013).

[124] R. Ruffini, C. L. Bianco, M. Enderli, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, N. Sahakyan, and Y. Wang, GRB Coordinates Network, Circular Service, No. 14913, #1 (2013) **14913** (2013).

[125] R. Ruffini, C. L. Bianco, M. Enderli, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, N. Sahakyan, Y. Wang, and L. Izzo, GRB Coordinates Network, Circular Service, No. 14888, #1 (2013) **14888** (2013).

[126] R. Ruffini, C. L. Bianco, M. Enderli, M. Muccino, A. V. Penacchioni, G. B. Pisani, J. A. Rueda, N. Sahakyan, Y. Wang, and L. Izzo, GRB Coordinates Network, Circular Service, No. 14526, #1 (2013) **14526** (2013).

[127] L. Izzo, J. A. Rueda, and R. Ruffini, A&A **548**, L5 (2012), 1206.2887.

[128] J. A. Rueda and R. Ruffini, ApJL **758**, L7 (2012), 1206.1684.

[129] L. A. Pachón, J. A. Rueda, and C. A. Valenzuela-Toledo, ApJ **756**, 82 (2012), 1112.1712.

[130] R. Ruffini, C. L. Bianco, B. Patricelli, M. Grazia Bernardini, L. Caito, G. Vereshchagin, A. Nandi, G. De Barros, S. K. Chakrabarti, J. A. Rueda Hernandez, et al., in *39th COSPAR Scientific Assembly* (2012), vol. 39 of *COSPAR Meeting*, p. 1628.

[131] J. A. Rueda Hernandez, in *39th COSPAR Scientific Assembly* (2012), vol. 39 of *COSPAR Meeting*, p. 1627.

[132] K. Boshkayev, R. Ruffini, and J. A. Rueda Hernandez, in *39th COSPAR Scientific Assembly* (2012), vol. 39 of *COSPAR Meeting*, p. 221.

[133] R. Belvedere, R. Ruffini, S.-S. Xue, and J. A. Rueda Hernandez, in *39th COSPAR Scientific Assembly* (2012), vol. 39 of *COSPAR Meeting*, p. 136.

[134] L. Izzo, R. Ruffini, A. V. Penacchioni, C. L. Bianco, L. Caito, S. K. Chakrabarti, J. A. Rueda, A. Nandi, and B. Patricelli, A&A **543**, A10 (2012), 1202.4374.

[135] M. Malheiro, J. A. Rueda, and R. Ruffini, Publ. Astron. Soc. J. **64**, 56 (2012), 1102.0653.
[136] R. Belvedere, D. Pugliese, J. A. Rueda, R. Ruffini, and S.-S. Xue, Nuclear Physics A **883**, 1 (2012), 1202.6500.
[137] R. Negreiros, R. Ruffini, C. L. Bianco, and J. A. Rueda, A&A **540**, A12 (2012), 1112.3462.
[138] M. Rotondo, J. A. Rueda, R. Ruffini, and S.-S. Xue, in *International Journal of Modern Physics Conference Series* (2012), vol. 12 of *International Journal of Modern Physics Conference Series*, pp. 203–212.
[139] J. A. Rueda, R. Ruffini, and S.-S. Xue, in *Twelfth Marcel Grossmann Meeting on General Relativity*, edited by A. H. Chamseddine (2012), pp. 1042–1044.
[140] J. A. Rueda, M. Rotondo, R. Ruffini, and S.-s. Xue, in *Twelfth Marcel Grossmann Meeting on General Relativity*, edited by A. H. Chamseddine (2012), pp. 1039–1041.
[141] M. Rotondo, J. A. Rueda, R. Ruffini, and S.-S. Xue, in *Twelfth Marcel Grossmann Meeting on General Relativity*, edited by A. H. Chamseddine (2012), pp. 1036–1038.
[142] D. Pugliese, J. A. Rueda, R. Ruffini, and S. S. Xue, in *International Journal of Modern Physics Conference Series* (2012), vol. 12 of *International Journal of Modern Physics Conference Series*, pp. 198–202.
[143] J. A. Rueda, R. Ruffini, and S.-S. Xue, Nuclear Physics A **872**, 286 (2011), 1104.4062.
[144] M. Rotondo, J. A. Rueda, R. Ruffini, and S.-S. Xue, Phys. Rev. D **84**, 084007 (2011), 1012.0154.
[145] R. Belvedere, J. Rueda, and R. Ruffini, in *X-ray Astrophysics up to 511 keV* (2011).
[146] M. Malheiro, J. Rueda, and R. Ruffini, in *The X-ray Universe 2011*, edited by J.-U. Ness and M. Ehle (2011), p. 248.
[147] M. Rotondo, J. A. Rueda, R. Ruffini, and S.-S. Xue, Physics Letters B **701**, 667 (2011), 1106.4911.
[148] M. Rotondo, J. A. Rueda, R. Ruffini, and S.-S. Xue, Phys. Rev. C **83**, 045805 (2011), 0911.4622.
[149] R. Ruffini, A. G. Aksenov, M. Grazia Bernardini, C. L. Bianco, L. Caito, P. Chardonnet, M. Giovanna Dainotti, G. De Barros, R. Guida, L. Izzo, et al., in *The Sun, the Stars, the Universe and General Relativity*, edited by S. E. Perez Berliaffa, M. Novello, and R. Ruffini (2011), pp. 67–164.
[150] J. A. Rueda and R. Ruffini, International Journal of Modern Physics E **20**, 141 (2011).
[151] K. Boshkayev, J. Rueda, and R. Ruffini, International Journal of Modern Physics E **20**, 136 (2011), 1210.7088.
[152] J. A. Rueda, M. Rotondo, R. Ruffini, and S.-S. Xue, International Journal of Modern Physics D **20**, 1789 (2011).
[153] J. A. Rueda, M. Rotondo, R. Ruffini, and S.-S. Xue, Journal of Korean Physical Society **57**, 560 (2010).
[154] J. A. Rueda, R. Ruffini, and S.-S. Xue, in *American Institute of Physics Conference Series*, edited by R. Ruffini and G. Vereshchagin (2010), vol. 1205 of *American Institute of Physics Conference Series*, pp. 143–147.
[155] D. Pugliese, J. A. Rueda Hernandez, S. S. Xue, and R. Ruffini, in *25th Texas Symposium on Relativistic Astrophysics* (2010), p. 271.
[156] R. Belvedere, J. A. Rueda, R. Ruffini, and S.-S. Xue, in *25th Texas Symposium on Relativistic Astrophysics* (2010), p. 270.
[157] J. A. Rueda Hernandez, M. Rotondo, R. Ruffini, and S. S. Xue, in *25th Texas Symposium on Relativistic Astrophysics* (2010), p. 269.
[158] L. J. Rangel Lemos, C. L. Bianco, H. J. Mosquera Cuesta, J. A. Rueda, and R. Ruffini, in *25th Texas Symposium on Relativistic Astrophysics* (2010), p. 204.
[159] B. Patricelli, M. Rotondo, J. A. Rueda H., and R. Ruffini, in *American Institute of Physics Conference Series*, edited by D.-S. Lee and W. Lee (2008), vol. 1059 of *American Institute of Physics Conference Series*, pp. 68–71.
[160] R. Ruffini, M. G. Bernardini, C. L. Bianco, L. Caito, P. Chardonnet, C. Cherubini, M. G. Dainotti, F. Fraschetti, A. Geralico, R. Guida, et al., in *The Eleventh Marcel Grossmann Meeting On Recent Developments in Theoretical and Experimental General Relativity, Gravitation and Relativistic Field Theories*, edited by H. Kleinert, R. T. Jantzen, and R. Ruffini (2008), pp. 368–505, 0804.2837.
[161] J. Rueda, in *3rd Stueckelberg Workshop on Relativistic Field Theories* (2008), p. 24.
[162] J. Rueda, B. Patricelli, M. Rotondo, and R. Ruffini, in *APS Meeting Abstracts* (2008), p. 8HE.093.
[163] C. Cherubini, A. Geralico, J. Rueda, and R. Ruffini, in *APS Meeting Abstracts* (2008), p. 8HE.050.
[164] C. Cherubini, A. Geralico, J. A. Rueda H., and R. Ruffini, in *Relativistic Astrophysics*, edited by C. L. Bianco and S.-S. Xue (2008), vol. 966 of *American Institute of Physics Conference Series*, pp. 123–126.
[165] R. Ruffini, C. Cherubini, A. Geralico, B. Patricelli, J. A. Rueda Hernandez, M. Rotondo, and S.-S. Xue, in *37th COSPAR Scientific Assembly* (2008), vol. 37 of *COSPAR Meeting*, p. 2667.
[166] J. A. Rueda H and L. A. Núñez, in *Journal of Physics Conference Series* (2007), vol. 66 of *Journal of Physics Conference Series*, p. 012042, gr-qc/0612008.
[167] L. A. Pachón, J. A. Rueda, and J. D. Sanabria-Gómez, Phys. Rev. D **73**, 104038 (2006), gr-qc/0606060.
[168] L. Herrera, G. A. González, L. A. Pachón, and J. A. Rueda, Classical and Quantum Gravity **23**, 2395 (2006), gr-qc/0602040.
[169] J. A. Rueda, V. S. Manko, E. Ruiz, and J. D. Sanabria-Gómez, Classical and Quantum Gravity **22**, 4887 (2005), gr-qc/0508101.

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- Member Institute for Advanced Study, Princeton, N.J., 1968-70.
- Instructor, Princeton Univ., 1970-71.
- Assistant Professor, Princeton University, 1971-74.
- Member Institute for Advanced Study, Princeton, N.J. 1974-76 .
- Visiting professor Kyoto University (Japan), 1975.
- Visiting professor University of Western Australia, Nedlands (Australia), 1975.
- Professor University of Catania, Italy, 1976-78.
- Professor, Chair of Theoretical Physics, University of Rome "la Sapienza", 1978-2012
- Member Council of Center. International Physics, Bogotà, Colombia, 1984-
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- Director of ICRANet, 2005-present
- Member of Task Force Scientific Use of Space Station NASA, Washington, 1986-88.
- Chairman International Organizing Committee of Marcel Grossmann Meetings, 1984-
- Member International Forum on the Scientific Use of Space Station, Washington, 1986-90.
- Member of Consiglio Ricerche Astronomiche, Rome, 1987-91.
- Co-Chairman Italian-Korean Meetings on Relativistic Astrophysics, Rome and Seoul, 1987-
- Chairman William Fairbanks Meetings, 1990-
- President of the Scientific Committee of the Italian Space Agency, Rome, 1989-93.
- Member of the Board of ENEA, 2004-

- Co-Director Advanced Series in Astrophysics and Cosmology-World Scientific, Singapore, 1986
- Editor Internat. Jour. Modern Phys. D World Scientific Singapore, 1992-
- Editor of the series "The Marcel Grossmann meetings on relativistic Field Theories", 1985-
- Co- Editor of the Series" Italo-Korean meetings on Relativistic Astrophysics".
- Member Sigma Xi.
- Member Italian Physical Society.
- Founding Member of European Physical Society.
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- Fellow recipient:
  - Cressy Morrison award of the New York Academy of Sciences , 1972.
  - Fellow of the American Physical Society 1974-
  - Alfred P. Sloan Foundation fellow, 1974-76.
  - Space Scientist of the Year Award, 1992.
  - Honorary Professor of University of Kirghizia 1998-

Main Scientific Publications:

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1. (with J. Bardeen, B. Carter, H. Gursky, S. Hawking, I. Novikov and K. Thorne) "*Black holes*", Ed. B. and C. de Witt, Gordon and Breach, New York, 1973,
2. (with M. Rees and J.A. Wheeler) "*Black Holes, Gravitational Waves and Cosmology*", Gordon and Breach N.Y. 1974, also translated in Russian as "*Cernie Diri Gratazionnie Volni I Kosmologia*", Mir, Moscow 1974,
3. (with H.Gursky) "*Neutron Stars, Black Holes and Binaries Sources*", D. Reidel, Dordrecht, 1975,
4. (with R. Giacconi et al.) "*Physics and Astrophysics of Neutron Stars Black Holes*", North Holland Pub. Co. Amsterdam 1978
5. (with Humitaka Sato) "*Black Holes*", in Japanese, Chuo Koron-Sha, Tokyo 1976,
6. (with Fang Li Zhi) "*Basic Concepts in Relativistic Astrophysics*", in Chinese, Science Press, Beijing 1981, also translated into english,, World Scientific, Singapore 1983,
7. (with Francesco Melchiorri) "*Gamow Cosmology*", North Holland Pub. Co., Amsterdam,1986,
8. (with H. Ohanian) "*Gravitation and Spacetime*" W.W. Norton and Co., New York 1976,
9. (with H. Ohanian) "*Gravitazione e Spazio-Tempo*" Zanichelli, Bologna 1997
10. (with H. Ohanian) "*Gravitation and Spacetime*" W.W. Norton and Shin Won Agency Co., Seoul 2001

Most recent scientific articles (2016-2017-2018)

1. 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.; "*GRB 090510: A Genuine Short GRB from a Binary Neutron Star Coalescing into a Kerr-Newman Black Hole*"; The Astrophysical Journal, 831 (2016) 178

2. 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*"; ArXiv e-prints, (2016) arXiv:1610.05619

3. Gomez, L. Gabriel, Arguelles, C. R., Perlick, Volker, Rueda, J. A., & Ruffini, R.; "*Strong lensing by fermionic dark matter in galaxies*"; ArXiv e-prints, (2016) arXiv:1610.03442

4. Batebi, S., Mohammadi, R., Ruffini, R., Tizchang, S., & Xue, S.-S.; "*Generation of circular polarization of gamma ray bursts*"; Physical Review D, 94 (2016) 065033

5. Arguelles, C. R., Rueda, J. A., & Ruffini, R.; "*Theoretical evidence of 50 keV fermionic dark matter from galactic observables*"; ArXiv e-prints, (2016) arXiv:1606.07040

6. Becerra, L., Bianco, C. L., Fryer, C. L., Rueda, J. A., & Ruffini, R.; "*On the induced gravitational collapse scenario of gamma-ray bursts associated with supernovae*"; ArXiv e-prints, (2016) arXiv:1606.02523

7. Rodriguez, J. F., Rueda, J. A., & Ruffini, R.; "*What can we really infer from GW 150914? (II)*"; ArXiv e-prints, (2016) arXiv:1605.07609

8. Rodriguez, J. F., Rueda, J. A., & Ruffini, R.; "*What can we really infer from GW 150914?*"; ArXiv e-prints, (2016) arXiv:1605.04767

9. Arguelles, C. R., Mavromatos, N. E., Rueda, J. A., & Ruffini, R.; "*The role of self-interacting right-handed neutrinos in galactic structure*"; Journal of Cosmology and Astro-Particle Physics, 4 (2016) 038

10. Boshkayev, Kuantay, Rueda, Jorge A., Ruffini, Remo, & Zhami, Bakytzhan; "*Induced Compression of White Dwarfs by Angular Momentum Loss*"; ArXiv e-prints, (2016) arXiv:1604.02393

11. Boshkayev, Kuantay, Rueda, Jorge A., Ruffini, Remo, Zhami, Bakytzhan, Kalymova, Zhanerke, & Balgimbekov, Galymdin; "*Mass-radius relations of white dwarfs at finite temperatures*"; ArXiv e-prints, (2016) arXiv:1604.02391

12. Ruffini, R., Rodriguez, J., Muccino, M., Rueda, J. A., Aimuratov, Y., Barres de Almeida, U., Becerra, L., Bianco, C. L., Cherubini, C., Filippi, S., Gizzi, D., Kovacevic, M., Moradi, R., Oliveira, F. G., Pisani, G. B., & Wang, Y.; "*On the rate and on the gravitational wave emission of short and long GRBs*"; ArXiv e-prints, (2016) arXiv:1602.03545

13. Ruffini, R., Rueda, J. A., Muccino, M., Aimuratov, Y., Becerra, L. M., Bianco, C. L., Kovacevic, M., Moradi, R., Oliveira, F. G., Pisani, G. B., & Wang, Y.; "*On the classification of GRBs and their occurrence rates*"; ArXiv e-prints, (2016) arXiv:1602.02732

14. Ruffini, R., Vereshchagin, G. V., & Xue, S.-S.; "*Cosmic absorption of ultra high energy particles*"; Astrophysics and Space Science, 361 (2016) 82

15. Ruffini, R., Aimuratov, Y., Becerra, L., Bianco, C. L., Kovacevic, M., Moradi, R., Muccino, M., Penacchioni, A. V., Pisani, G. B., Primorac, D., Rueda, J., & Wang, Y.; "*GRB 160521B: Theoretical estimate of the redshift and urgent need for further x-ray observations*"; GRB Coordinates Network, 19456 (2016) 1

16. Mavromatos, Nick E.; Arguelles, Carlos R.; Ruffini, Remo; Rueda, Jorge A.; "*Self-interacting dark matter*" (2017 IJMPD);

17. Rueda, Jorge A.; Aimuratov, Y.; de Almeida, U. Barres; Becerra, L.; Bianco, C. L.; Cherubini, C.; Filippi, S.; Karlika, M.; Kovacevic, M.; Fuksman, J. D. Melon; et al.; "*The binary systems associated with short and long gamma-ray bursts and their detectability* (2017 IJMPD);

18. Ruffini, R.; Aimuratov, Y.; Becerra, L.; Bianco, C. L.; Karlika, M.; Kovacevic, M.; Melon Fuksman, J. D.; Moradi, R.; Muccino, M.; Penacchioni, A. V.; et al.; "*The cosmic matrix in the 50th anniversari of relativistic astrophysics*" (2017 IJMPD);

19. Lemos, Luis Juracy Rangel; Bianco, Carlo L.; Ruffini, Remo; "*Luminosity Function Statistics Applied in GRB Samples*" (2017 IJMPS);

20. de Lima, Rafael C. R.; Coelho, Jaziel G.; Malheiro, Manuel; Rueda, Jorge A.; Ruffini, Remo; "*SGRs/AXPs as Rotation-Power Neutron Stars*" (2017 IJMPS);

21. 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*" (2017 A&A);

22. Ruffini, R.; Vereshchagin, G. V.; Wang, Y.; "*Thermal emission in the early afterglow of gamma-ray bursts from their interaction with supernova ejecta*" (2017 A&A);

23. Pugliese, D.; Quevedo, H.; Ruffini, R.; "*General Classification of charged test particle circular orbits in Reissner-Nordström spacetime*" (2017 EPJC);

24. 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*" (2017 JPhCS);

25. Aimuratov, Y.; Ruffini, R; Muccino, M.; Bianco, C. L.; Penacchioni A. V.; Pisani, G. B.; Primorac, D.; Rueda, J. A.; Wang, Y.; "*GRB 081024B and GRB 140402°: Two Additional Short GRBs from Binary Neutron Stars Mergers*" (2017 ApJ);

26. Cipolletta, F.; Cherubini, C.; Filippi, S.; Rueda, J. A.; Ruffini, R.; "*Last stable orbit around rapidly rotating neutron stars*" (2017 PhRvD);

27. Becerra, L. M.; Fryer, C. L.; Rueda, J. A.; Ruffini, R.; "*Hypercritical Accretion in the Induced Gravitational Collapse*" (2017 RMxAC);

28. Cipolletta, Federico; Cherubini, Christian; Filippi, Simonetta; Rueda, Jorge A.; Ruffini, Remo; "*Equiibrium Configurationsof Classical Polytropic Stars with a Multi-Parametric Differential Rotation Law: A Numerical Analysis*" (2017 CCoPh);

29. Eslam Panah, B.; Bordbar, G. H.; Hendi, S. H.; Ruffini, R.; Rezaei, Z.; Moradi, R.; "*Expansion of Magnetic Neutron Stars in an Energy (in) Dependent Spacetime*" (2017 ApJ);

30. Ruffini, R.; Wang, Y.; Aimuratov, Y.; Barres de Almeida, U.; Becerra, L.; Bianco, C. L.; Chen, Y. C.; Karlika, M.; Kovacevic, M.; Li, L. et al.; "*Early X-Ray Flares in GRBs*" (2018 ApJ);

31. Becerra, L.; Guzzo, M. M.; Rossi-Torres, F.; Rueda, J. A.; Ruffini, R.; Uribe, J. D.; "*Neutrino Oscillations within the Induced Gravitational Collapse Paradigm of Long Gamma-Ray Bursts*" (2018 ApJ);

32. Rueda, J. A.; Ruffini, R.; Rodriguez, J. F.; Muccino, M.; Aimuratov, Y.; Barres de Almeida, U.; Becerra, L.; Bianco, C. L.; Cherubini, C.; Filipi, S.; et al.; "*The binary progenitors of short and long GRBs and their gravitational-wave emission*" (2018 EPJWC);

33. Muccino, Marco; Ruffini, Remo; Aimuratov, Yerlan; Becerra, Laura M.; Bianco, Carlo L.; Karlika, Mile; Kovacevic, Milos; Melon Fuksman, Julio D.; Moradi, Rahim; Penacchioni, Ana V.; et al.; "*What can we learn from GRBs*" (2018 EPJWC);

34. Becerra, Laura M.; Bianco Carlo; Fryer, Chris; Rueda, Jorge; Ruffini, Remo; "*On the Induced Gravitational Collapse*" (2018 EPJWC);

35. Rodriguez, J. F.; Rueda, J. A.; Ruffini, R.; "*Strong-field gravitational-wave emission in Schwarzschild and Kerr geometries: some general considerations*" (2018 EPJWC);

36. Pisani, G. B.; Ruffini, R.; Aimuratov, Y.; Bianco, C. L.; Karlika, M.; Kovacevic, M.; Moradi, R.; Muccino, M.; Penacchioni, A. V.; Primorac, D.; et al.; "*The first ICRANet catalog of binary-driven hypernovae*" (2018 EPJWC);

37. Primorac, Daria; Ruffini, Remo; Pisani, Giovanni Battista; Aimuratov, Yerlan; Bianco, Carlo Luciano; Karlika Mile; Melon Fuksman, Julio David; Moradi Rahim; Muccino, Marco; Penacchioni, Ana Virginia; et al.; "*GRB 110731° within the IGC paradigm*" (2018 EPJWC);

38. Melon Fuksman, J. D.; Becerra, L.; Bianco, C. L.; Karlika, M.; Kovacevic, M.; Moradi, R.; Muccino, M.; Pisani, G. B.; Primorac, D.; Rueda, J. A.; et al.; "*Evolution o fan electron-positron plasma produced by induced gravitational collapse in binary-driven hypernovae*" (2018 EPJWC);

39. Krut, A.; Argüelles, C. R.; Rueda, J. A. ; Ruffini, R. ; "*Universal relations with fermionic dark matter*" (2018 EPJWC);

40. Aimuratov, Y.; Moradi, R.; Peresano, M.; Ruffini, R.; Shakeri, S; Wang, Y.; "*Revisiting the statistics of x-ray flares in gamma-ray bursts*" (2018 SAIt);

41. Rodríguez, J. F.; Rueda, J. A.; Ruffini, R.; "*Comparison and contrast of test-particle and numerical-relativity waveform templates*" (2018 JCAP);

42. Cherubini, Christian; Filippi, Simonetta; Loppini, Alessandro; Moradi, Rahim; Ruffini, Remo; Wang, Yu; Xue, She-Sheng, "*Perfect relativistic magnetohydrodynamics around black holes in horizon penetrating coordinates*" (2018 PhRv);

43. Amati, L.; O'Brien, P.; Götz, D.; Bozzo, E.; Tenzer, C.; Frontera, F.; Ghirlanda, G.; Labanti, C.; Osborne, J. P.; Stratta, G.; Tanvir, N.; Willingale, R.; Attina, P.; Campana, R.; Castro-Tirado, A. J.; Contini, C.; Fuschino, F.; Gomboc, A.; Hudec, R.; Orleanski, P.; Renotte, E.; Rodic, T.; Bagoly, Z.; Blain, A.; Callanan, P.; Covino, S.; Ferrara, A.; Le Floch, E.; Marisaldi, M.; Mereghetti, S.; Rosati, P.; Vacchi, A.; D'Avanzo, P.; Giommi, P.; Piranomonte, S.; Piro, L.; Reglero, V.; Rossi, A.; Santangelo, A.; Salvaterra, R.; Tagliaferri, G.; Vergani, S.; Vinciguerra, S.; Briggs, M.; Campolongo, E.; Ciolfi, R.; Connaughton, V.; Cordier, B.; Morelli, B.; Orlandini, M.; Adami, C.; Argan, A.; Atteia, J.-L.; Auricchio, N.; Balazs, L.; Baldazzi, G.; Basa, S.; Basak, R.; Bellutti, P.; Bernardini, M. G.; Bertuccio, G.; Braga, J.; Branchesi, M.; Brandt, S.; Brocato, E.; Budtz-Jorgensen, C.; Bulgarelli, A.; Burderi, L.; Camp, J.; Capozziello, S.; Caruana, J.; Casella, P.; Cenko, B.; Chardonnet, P.; Ciardi, B.; Colafrancesco, S.; Dainotti, M. G.; D'Elia, V.; De Martino, D.; De Pasquale, M.; Del Monte, E.; Della Valle, M.; Drago, A.; Evangelista, Y.; Feroci, M.; Finelli, F.; Fiorini, M.; Fynbo, J.; Gal-Yam, A.; Gendre, B.; Ghisellini, G.; Grado, A.; Guidorzi, C.; Hafizi, M.; Hanlon, L.; Hjorth, J.; Izzo, L.; Kiss, L.; Kumar, P.; Kuvvetli, I.; Lavagna, M.; Li, T.; Longo, F.; Lyutikov, M.; Maio, U.; Maiorano, E.; Malcovati, P.; Malesani, D.; Margutti, R.; Martin-Carrillo, A.; Masetti, N.; McBreen, S.; Mignani, R.; Morgante, G.; Mundell, C.; Nargaard-Nielsen, H. U.; Nicastro, L.; Palazzi, E.; Paltani, S.; Panessa, F.; Pareschi, G.; Pe'er, A.; Penacchioni, A. V.; Pian, E.; Piedipalumbo, E.; Piran, T.; Rauw, G.; Razzano, M.; Read, A.; Rezzolla, L.; Romano, P.; Ruffini, R.; Savaglio, S.; Sguera, V.; Schady, P.; Skidmore, W.; Song, L.; Stanway, E.; Starling, R.; Topinka, M.; Troja, E.; van Putten, M.; Vanzella, E.; Vercellone, S.; Wilson-Hodge, C.; Yonetoku, D.; Zampa, G.; Zampa, N.; Zhang, B.; Zhang, B. B.; Zhang, S.; Zhang, S.-N.; Antonelli, A.; Bianco, F.; Boci, S.; Boer, M.; Botticella, M. T.; Boulade, O.; Butler, C.; Campana, S.; Capitanio, F.; Celotti, A.; Chen, Y.; Colpi, M.; Comastri, A.; Cuby, J.-G.; Dadina, M.; De Luca, A.; Dong, Y.-W.; Ettori, S.; Gandhi, P.; Geza, E.; Greiner, J.; Guiriec, S.; Harms, J.; Hernanz, M.; Hornstrup, A.; Hutchinson, I.; Israel, G.; Jonker, P.; Kaneko, Y.; Kawai, N.; Wiersema, K.; Korpela, S.; Lebrun, V.; Lu, F.; MacFadyen, A.; Malaguti, G.; Maraschi, L.; Melandri, A.; Modjaz, M.; Morris, D.; Omodei, N.; Paizis, A.; Páta, P.; Petrosian, V.; Rachevski, A.; Rhoads, J.; Ryde, F.; Sabau-Graziati, L.; Shigehiro, N. Sims, M.; Soomin, J.; Szécsi, D.; Urata, Y.; Uslenghi, M.; Valenziano, L.; Vianello, G.; Vojtech, S.; Watson, D.; Zicha, J.; "*The THESEUS space mission concept: science case, design and expected performances*" (2018 AdSpR);

44. Argüelles, C. R.; Krut, A.; Rueda, J. A.; Ruffini, R.; "*Novel constraints on fermionic dark matter from galactic observables I: The Milky Way*" (2018 PDU);

45. Rueda, J. A.; Ruffini, R.; Wang, Y.; Aimuratov, Y.; Barres de Almeida, U.; Bianco, C. L.; Chen, Y. C.; Lobato, R. V.; Maia, C.; Primorac, D.; Moradi, R.; Rodriguez, J. F.; "*GRB 170817A-GW170817-AT 2017gfo and the observations of NS-NS, NS-WD and WD-WD mergers*" (2018 JCAP);

46. Rueda, J. A.; Ruffini, R.; Becerra, L. M.; Fryer, C. L.; *"Simulating the induced gravitational collapse scenario of long gamma-ray bursts"* (2018IJMPA);

47. Ruffini, R.; Karlica, M.; Sahakyan, N.; Rueda, J. A.; Wang, Y.; Mathews, G. J.; Bianco, C. L.; Muccino, M.; *"A GRB Afterglow Model Consistent with Hypernova Observations"* (2018 ApJ);

48. Ruffini, R.; Becerra, L.; Bianco, C. L.; Chen, Y. C.; Karlica, M.; Kovačević, M.; Melon Fuksman, J. D.; Moradi, R.; Muccino, M.; Pisani, G. B.; Primorac, D.; Rueda, J. A.; Vereshchagin, G. V.; Wang, Y.; Xue, S. S., "*On the Ultra-relativistic Prompt Emission, the Hard and Soft X-Ray Flares, and the Extended Thermal Emission in GRB 151027A*" (2018 ApJ);

49. Becerra, L.; Ellinger, C.; Fryer, C.; Rueda, J. A.; Ruffini, R.; "*On the Induced Gravitational Collapse: SPH Simulations*" (2018A Rep);

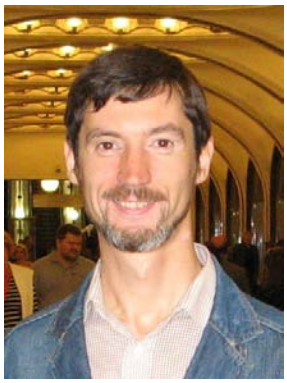
50. Krut, A.; Arguëlles, C. R.; Rueda, J.; Ruffini, R., *"Galactic Constraints on Fermionic Dark Matter"* (2018 ARep);

51. Moradi, R.; Ruffini, R.; Bianco, C. L.; Chen, Y.-C.; Karlica, M.; Melon Fuksman, J. D.; Primorac, D.; Rueda, J. A.; Shakeri, S.; Wang, Y.; Xue, S. S.; "*Relativistic Behavior and Equitemporal Surfaces in Ultra-Relativistic Prompt Emission Phase of Gamma-Ray Bursts*" (2018 ARep);

52. Primorac, D.; Muccino, M.; Moradi, R.; Wang, Y.; Melon Fuksman, J. D.; Ruffini, R.; Bianco, C. L.; Rueda, J. A.; "Structure of the Prompt Emission of GRB 151027A Within the Fireshell Model" (2018 ARep);

53. Rodriguez, J. F.; Rueda, J. A.; Ruffini, R.; "*On the Final Gravitational Wave Burst from Binary Black Holes Mergers*" (2018 ARep);

Surname Name **Photo**



Vereshchagin Gregory

Position: professor
Period covered: 2018

I Scientific Work

The work focused on the following aspects:

- Photon-photon scattering and absorption of high energy photons in the Universe

Photon-photon scattering of gamma-rays on the cosmic microwave background has been studied using the low energy approximation of the total cross section by Zdziarski and Svensson. The cosmic horizon due to photon-photon scattering is accurately determined using the exact cross section and we find that photon-photon scattering dominates over the pair production at energies smaller than 1.68 GeV and at redshifts larger than 180.

- Thermalization of relativistic plasma with quantum (with I.A. Siutsou and N.O. Prakapenia)

We present a new efficient method to compute Uehling–Uhlenbeck collision integral for all two-particle interactions in relativistic plasma with drastic improvement in computation time with respect to existing methods. Plasma is assumed isotropic in momentum space. The set of reactions consists of: Moeller and Bhabha scattering, Compton scattering, two-photon pair annihilation, and two-photon pair production, which are described by QED matrix elements. In our method exact energy and particle number conservation laws are fulfilled. Reaction rates are compared, where possible, with the corresponding analytical expressions and convergence of numerical rates is demonstrated.

- The role of two-particle and three-particle interactions in thermalization of electron-positron plasma: (with I.A. Siutsou and N.O. Prakapenia)

Interactions in homogeneous electron-positron-photon plasma are studied numerically using the relativistic kinetic Boltzmann equation, with collision integrals given by QED. Efficient method for computations of reaction rates of two-particle interactions is developed. The results are compared with analytical approximations, showing excellent agreement. The non-equilibrium electron-positron-photon plasma thermalization process is studied using relativistic Boltzmann solver with

Uehling-Uhlenbeck collision integral, taking into account quantum corrections both in non-relativistic and relativistic cases.

- Inflationary measure in loop quantum cosmology (with S. Bedic)

We study the measure on the set of initial conditions in remote past for Loop Quantum Cosmology with massive scalar field motivated by various choices of the measure present in the literature. The main finding of the analysis is existence of an attractor at contracting phase of the universe, which, in addition to the well known attractor at expanding phase, predicts a very specific duration of inflationary stage with the number of e-foldings about 140.

- On the cosmological gravitational waves and cosmological distances (with V. Belinski)

We show that solitonic cosmological gravitational waves propagated through the Friedmann universe and generated by the inhomogeneities of the gravitational field near the Big Bang can be responsible for increase of cosmological distances..

II Conferences and educational activities

II a Conferences and Other External Scientific Work

- Fifteenth Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theory, University of Rome Sapienza, Italy, July 1 - 7, 2018. Member of LOC. Co-chaired (with Damien Begue) the parallel session “GB4 - Photospheric Emission in GRBs”.

- The Third Zeldovich meeting, held on 23-27 of April 2018 in the National Academy of Sciences of Belarus, Minsk, Belarus.

II b Work With Students

- David Melon Fursman (IRAP PhD): on generation of multiple shocks in GRB outflows

- Nikolai Prakapenia (NASB): reaction rates in relativistic plasma

- Susana Bedic (IRAP PhD): inflationary measure in loop quantum cosmology

- Rafael Yunis (IRAP PhD): dark matter distribution and temperature evolution

II c Diploma thesis supervision

II d Other Teaching Duties

- *Preparation of the lecture course on astrophysics for the students of the department of theoretical physics and astrophysics at the Belarusian State University (together with I.A. Siutsou)*

II e. Work With Postdocs

- Ivan Siutsou: relativistic plasma thermalization with quantum degeneracy; photospheric emission

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

- Member of the IRAP PhD Faculty
- coordination of cooperation with the Belarusian State University
- coordination of cooperation with the National Academy of Sciences of Belarus
- coordination of activities in ICRANet-Minsk center
- organizational work for Fifteenth Marcel Grossmann Meeting
- organizational work for Third Zeldovich Meeting
- supervision of the ICRANet newsletter
- supervision of ICRANet press releases

III b. Outside ICRANet

- Co-PI of the scientific program “Relativistic astrophysical objects and phenomena” within the Belorusian state program “Convergence-2020”, subprogram “Microworld and Universe”.

IV. Other

This year the monograph "Relativistic Kinetic Theory With Applications in Astrophysics and Cosmology" written in co-authorship with Alexey Aksenov from ICAD, RAS, published by Cambridge University Press in 2017, has been translated in Russian. The publication of the translation is supported by the grant of the Russian Foundation for Basic Research, project ID: 18-12-00027. The book is published with the leading Russian publishing house "Nauka" in Moscow.

2018 List of Publication

1. G.V. Vereshchagin and A. G. Aksenov, "Relativistic Kinetic Theory With Applications in Astrophysics and Cosmology", Moscow, Nauka (in Russian), 2018, in press.
2. G. V. Vereshchagin, “Cosmic horizon for GeV sources and photon-photon scattering”, Astrophysics and Space Science, Vol. 363:29 (2018).

3. M. A. Prakapenia, I. A. Siutsou, and G. V. Vereshchagin, “Numerical scheme for treatment of Uehling–Uhlenbeck equation for two-particle interactions in relativistic plasma”, Journal of Computational Physics, Volume 373 (2018), p. 533.
4. M. A. Prakapenia, I. A. Siutsou, and G. V. Vereshchagin, “Numerical scheme for treatment of Uehling–Uhlenbeck equation for two-particle interactions in relativistic plasma”, Astronomy Reports, 2018, Vol. 62, No. 12, pp. 925–931.
5. M. A. Prakapenia, I. A. Siutsou and G. V. Vereshchagin, “Thermalization of electron-positron plasma with quantum degeneracy”, Physics Letters A Volume 383 (2019), p.306.
6. G.V. Vereshchagin and S. Bedic, “Inflationary measure in loop quantum cosmology”, submitted to Phys. Rev. D.
7. G.V. Vereshchagin and S. Bedic, “Loop Quantum Cosmology and Probability of Inflation”, Astronomy Reports, 2018, Vol. 62, No. 12, pp. 958–963.
8. V. A. Belinski and G. V. Vereshchagin, “On the cosmological gravitational waves and cosmological distances”, Physics Letters B, Volume 778 (2018), pp. 332-338.

Surname Name **Xue She-Sheng** **Photo**

Position: ICRANet Faculty

Period covered: 2017 -- 2018

I Scientific Work

Strong and pulsating electromagnetic field in gravitational collapse and heavy atoms, as well as its relevance to Gamma-Ray Bursts (GRBs) and heavy atom physics.

Strong electromagnetic field in compact stars and heavy atoms and its relevance to their structure and properties.

Pair production rates and radiation in strong and time-varying electromagnetic fields, and its applications in physics and astrophysics.

Pair production and interactions of fields and matter in the cosmological evolution within the framework of Einstein-Maxwell theory.

Four-fermion interactions of Einstein-Cartan theory and its resulted particle spectra for matter and dark matter.

The opacity of high energy cosmic particles in terms of their energy and travelling distance.

See the following list of publications.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

Participating the organizations of ICRANet meetings in Korea and China: the 15th Italian-Korean meeting (July, 2017, Seoul, Korea) and 5th Galileo –Xu Guangqi meeting (GX5, June, 2017).
Participating the organization of MG15 Rome, July 2018.
Participating the preparation of ICRANet agreements with Institutions of China (2017-2018).

Participating the preparation of ICRANet outreach activities: ICRANet exhibitions in Pescara and Rome, la Notte Europea dei Ricercatori 2017-2018 and Besso foundation.

II b Work With Students

Wang Yu and Rahim Moradi (IRAP Ph.D. students), Li Liang and Luis Gabriel Gómez Díaz, (Erasmus Mundus Ph.D. students), David Melon Fuksman, Yu Ling Chang and Yen-Chen Chen, Iranian Ph.D. students, Soroush Shakeri, Maryam Amiri, B. Eslam Panah and Rashid Riahi, Somayye Mahmoudi, S. Vamegh, as well as Takahiro Hayashinaka, Cheng-Jun Xia (supported by their nation).

II c Diploma thesis supervision (2012-2018)

Yuanbin Wu, Handrik Ludwig, Eckhard Strobel, and Clement Stahl (all are Erasmus Mundus Ph.D. students), their main publications: 12 in Phys. Rev. , and 6 in Nucl. Phys., Phys. Lett.

II d Other Teaching Duties (2012-2018)

Teaching courses in Nice and Les Houches schools for IRAP Ph.D. Erasmus Mundus students.

II e. Work With Professors and Postdocs inside and outside ICRANet (2012-2018)

R. Ruffini, H. Kleinert, G. Vereshchagin, J. Rueda, C. Bianco, W.B. Han, I. Siutsou, C. Argulles, C. Gruber, R. Mohammadi, D. Bégué, E. Bavarsad and Sang Pyo Kim.

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

Participating organization of ICRANet Seminars and ICRANet outreach activity. Participating preparation of ICRANet Newsletter. Working with ICRANet administration.

III b. Outside ICRANet

Visiting Chinese Institutions IHEP and ITP, CAS as well as Tsinghua University that are in cooperation with ICRANet .

IV. Other

The List of Publications (2017 -- 2018)

S.-S. Xue, ``An effective strong-coupling theory in UV-domain'' JHEP 05, 146 (2017).
S. Shakeri, S. Z. Kalantari, and S.-S. Xue, ``Polarization of a probe laser beam due to nonlinear QED effects'', Physical Review A 95, 012108 (2017).
S. Shakeri, M. Haghighat, S.-S. Xue, ``Nonlinear QED effects in X-ray emission of pulsars'', JCAP 10, 014 (2017).
R. Moradi, C. Stahl, J. Firouzjaee, S.-S. Xue, `` Charged cosmological black hole'', Phys. Rev. D 96, 104007, 2017.
C. Cherubini, S. Filippi, A. Loppini, R. Ruffini, R. Moradi, Y. Wang, and S.-S. Xue, `` On Perfect Relativistic magnetohydrodynamics around black holes in horizon penetrating coordinates'' Phys. Rev. D 97, 064038 (2018)
E. Bavarsad, S. P. Kim, C. Stahl, S.-S. Xue, ``Effect of a magnetic field on Schwinger mechanism in de Sitter spacetime'', Phys. Rev. D 97, 025017 (2018).
R. Ruffini, et al., "Early X-Ray Flares in GRBs", ApJ...852...53R (2018).
T. Hayashinaka, S.-S. Xue, ``Physical renormalization condition for de Sitter QED'', Phys. Rev. D 97, 105010 (2018).
H. Kleinert and S.-S. Xue `` Composite fermions and their pair states in a strongly-coupled Fermi liquid '', Nuclear Physics B. Volume 936, November 2018, Pages 352-363
R. Ruffini, et.al. ``On the role of the Kerr-Newman black hole in the GeV emission of long gamma-ray bursts'', Submitted to ApJ

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C. Stahl, S. Eckhard and S.-S. Xue, `` Pair creation in the early universe'', the proceedings of Fourteenth Marcel Grossmann Meeting - MG14, World scientific. 2017.

T. Seddigheh, B. Saghar; M. Rohollah, R. Ruffini, G. Vereshchagin, S.-S. Xue, `` On the interaction of high energy photons with the cosmic microwave background'', the proceedings of Fourteenth Marcel Grossmann Meeting - MG14, World scientific, 2017.

B. Saghar, T. Seddigheh, M. Rohollah, R. Ruffini, S.-S. Xue, `` On the interaction of high energy photons with the cosmic microwave background'', the proceedings of Fourteenth Marcel Grossmann Meeting - MG14, World scientific, 2017

E. Bavarsad, S. P. Kim, C. Stahl, S.-S. Xue, ``Schwinger mechanism in electromagnetic field in de Sitter space time '', EPJ Web of Conferences **168**, 03002 (2018).

E. Bavarsad, S. P. Kim, C. Stahl, S.-S. Xue , ``Effect of Schwinger Pair Production on the Evolution of the Hubble Constant in de Sitter Spacetime" , The proceedings of The Fifteenth Marcel Grossmann Meeting - MG15, University of Rome "La Sapienza" - Rome, July 1-7, 2018

Adjunct Professors of the Faculty

Thomas Buchert

Position: Professor of Cosmology
Staff Member of CRAL, Head of Cosmology Group :
Université Lyon 1 and École Normale Supérieure Lyon
Adjunct Professor of the Faculty : ICRANet
PI: ERC advanced Grant ARThUs

Period covered: January 2018 - December 2018

I Scientific Work

(i) Investigation of Lagrangian perturbative models in relativistic cosmology including gravitational waves and pressure at first order.

(ii) Backreaction in Newtonian Cosmology.

(iii) Generalization of scalar averaging schemes for arbitrary 3+1 foliations of space-time and arbitrary fluid content. Foliation dependence of Backreaction. Covariant formulation of the averaging framework.

(iv) New statistical tools: homology and persistence, and application to the Cosmic Microwave Background.

II Conferences and educational activities

II a Conferences and Other External Scientific Work
- LOC and SOC : Workshop "Cosmoback", Marseille, France (May 2018).
- LOC and SOC : Workshop "Inhomogeneous Cosmologies III", Krakow, Poland (September 2018).

- 2nd World Summit "Exploring the Dark Side of the Universe", Pointe-à-Pitre, Guadeloupe (June 2018).

II b Work With Students
1 PhD student: Pierre Mourier (ongoing). 3 new PhD students: Quentin Vigneron, Martin France and Étienne Jaupart.

II c Diploma thesis supervision:
1 Master student M1 (Francesco Sartini, ENS) ; 1 pre-Master student (Célia Desgrange, ENS).

II d Other Teaching Duties see below.

II e. Work With Postdocs :
Collaboration with Jan J. Ostrowski, postdoc LIO (Lyon Institut of Origins). Collaboration with Pratyush Pranav and Léo Brunswic, ERC postdocs, financed by the ERC advanced Grant "ARTHUS, PI: T. Buchert".

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet : None.

III b. Outside ICRANet :

Mannagement of ERC advanced grant "ARTHUS, PI: T. Buchert", since September 2017.
Exercises in "Introduction to General Relativity", all at École Normale Supérieure, Lyon.

IV. Other Memberships in the *Euclid consortium* ("Theory" and "Clustering"), and in *4MOST*.

2018 List of Publications

peer-reviewed – published and submitted

ad (i) - Li Y.-Z., Mourier P., Buchert T., Wiltshire D.L. : 'Lagrangian theory of structure formation in relativistic cosmology, V. Irrotational fluids'. Phys. Rev. D 98, 043507 (2018).

ad (ii) - Buchert T. : 'On Backreaction in Newtonian cosmology',
Mon. Not. Roy. Astron. Letters 473, L46–L49 (2018).

ad (iii) - Buchert T., Mourier P., Roy X. : 'Cosmological backreaction and its dependence on spacetime foliation',
Class. Quant. Grav. 35, 24LT02 (2018).

ad (iii) - Heinesen A., Mourier P., Buchert T. : 'On the covariance of scalar averaging and backreaction in relativistic inhomogeneous cosmology', Class. Quant. Grav., submitted (2018).

ad (iv) - Pranav P., van de Weygaert R., Vegter G., Jones B.J.T., Adler R.J., Feldbrugge J., Park C., Buchert T., Kerber M. : 'Topology and Geometry of Gaussian random fields I : on Betti Numbers, Euler characteristic and Minkowski functionals', Mon. Not. Roy. Astron. Soc., submitted (2018).

ad (iv) - Pranav P., Adler R.J., Buchert T., Edelsbrunner H., Jones B.J.T., Schwartzmann A., Wagner H., van de Weygaert R. : 'Unexpected Topology of the Temperature Fluctuations in the Cosmic Microwave Background',
Astron. Astrophys., submitted (2018).

invited papers:

Buchert T. : 'Is Dark Energy Simulated by Structure Formation in the Universe?'.
in : Proceedings of the 2nd World Summit on Exploring the Dark Side of the Universe,
University of Antilles, Guadeloupe, June 2018; Proceedings of Science EDSU2018, Conf-Id 335, 038 (2018).

Fisher Robert

Position: **Associate Professor** in Physics
Graduate Program Director
University of Massachusetts Dartmouth
285 Old Westport Road
North Dartmouth, Ma. 02740
Tel. +1-508-999-8353
Email: robert.fisher@umassd.edu

Memberships: International Astronomical Union, American Physical Society, American Astronomical Society, National Society of Black Physicists

Period covered: 2018

I Scientific Work

- **Type Ia Supernovae**
- **Star Formation**
- **Physics of the Interstellar Medium**
- **Turbulence and Combustion**
- **Computational Fluid Dynamics**

II Conferences and educational activities

II a Conferences and Other External Scientific Work

Invited American Astronomical Society (AAS) 231 Meeting Plenary Lecture 1/12/18: "Fate of Exploding White Dwarfs"

II b Work With Students

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

III b. Outside ICRANet

- Research advisor to 3 graduate students and 2 undergraduate students
- Graduate program director
- Instructor for classical mechanics, modern physics, and astrophysics courses

IV. Other

2018 List of Publication

C. Byrohl, R. Fisher, D. Townsley, "The Intrinsic Stochasticity of the 56Ni Distribution of Single-Degenerate Type Ia Supernovae," submitted.

R. Kashyap, T. Haque, P. Lorén-Aguilar, E. García-Berro, R. Fisher, "Double-Degenerate Carbon-Oxygen and Oxygen-Neon White Dwarf Mergers: A New Mechanism for Faint and Rapid Type Ia Supernovae," The Astrophysical Journal, 869, 2, 2018.

R. Fisher, P. Mozumdar, and G. Casabona, "Carbon Detonation Initiation in Turbulent Electron-Degenerate Matter," submitted.

O. Graur, D. Zurek, A. Rest, I. Seitenzahl, B. Shappee, R. Fisher, J. Guillochon, M. Shara, A. Reiss, “Observations of SN 2015F suggest a correlation between the intrinsic luminosity of Type Ia supernovae and the shape of their light curves > 900 days after explosion,” The Astrophysical Journal, 859, 79, 2018.

Name Surname Filippo Frontera

Position: Adjunct Professor of ICRANET, Contract Professor of the University of Ferrara, AssociatedSenior Scientist of INAF-OAS Bologna
Period covered: January - December 2018

I Scientific Work

Experimental and observational X-/gamma-ray astronomy, in particular:

a. Prosecution of the advanced process development of a focusing Laue lens of gamma-rays for space astrophysics;

b. Contribution to the mission, THESEUS, accepted by ESA for a 0/A study phase, devoted to high z GRBs, multi-messenger astronomy and monitoring of the X-ray sky for the search of new transient phenomena.

c. Prosecution of the study of a space mission concept ASTENA (Advanced Surveyor of Transient Events and Nuclear Astrophysics) based on a Laue lens (30-600 keV) with unprecedented sensitivity and on a very large wide field (>1sr) broad band (1 keV-20 MeV) monitor (WFM-IS) with imaging, spectroscopy and polarimetric capabilities. A paper on the mission concept is in preparation for A&A.

d. Contribution to the scientific exploitation of the Chinese satellite mission Insight-HXMT launched on 15 June 2017, now in the Science Verification Phase.

II Conferences and educational activities

II a. Conferences and Other External Scientific Work

a. *Attendance, with an invited talk on "Historical overview on GRBs and prospects", to the workshop on "Clues on GRB origin from chemical evolution models", held 28 January - 2 February, 2018 in Sexten, Italy.*
b. *Co-Chair of a parallel session devoted to the HXMT mission first results, at the Marcel Grossmann meeting No. 15 held in Roma in July 2018.*
c. *Invited talk on "The ASTENA mission concept" at the MG15 meeting, parallel session on future missions, July 2018*

d. *Lecture at the Academy of Sciences of Bologna, 15 May 2018, on "First steps and development of the Space Astrophysics in Bologna"*
e. *Tele-attendance to the calibration meeting of the Chinese satellite HXMT held in Beijing on 12-14 April 2018.*

II b. Work With Students

yes, with

a) 1 PhD student Renato Martone, IRAP-PhD program

II c Other Teaching Duties

Course at the Master's Degree in Physics, University of Ferrara, on "Measures and Observations of Celestial X- and gamma-rays".

II d. Work With Postdocs

Yes, with 2PostDoc: E.Virgilli and TaisMaiolino at the Physics and Earth Sciences Department, University of Ferrara

III. Service activities

III a. Member of the IRAP-PhD Faculty

IV. Other

none

2018 List of Publications

- Campana, R.; Fuschino, F.; Labanti, C.; Amati, L.; Mereghetti, S.; Fiorini, M.; Frontera, F.; Baldazzi, G.; Bellutti, P.; Borghi, G.; and 13 coauthors, *The X-Gamma ImagingSpectrometer (XGIS) onboard THESEUS*, Memorie della Societa Astronomica Italiana, v.89, p.137 (2018)
- Frontera, F.; Amati, L.; O'Brien, P.; Götz, D.; Bozzo, E.; Tenzer, C.; Campana, R.; Fuschino, F.; Labanti, C.; Orlandini, M.; and 4 coauthors, *Observingstrategy of the THESEUS mission*, Memorie della Societa Astronomica Italiana, v.89, p.157 (2018).
- Frontera, F.,*Historical overview on GRBs and prospects*, in "Clues on GRB origin from chemical evolution models", held 28 January - 2 February, 2018 in Sexten, Italy. http://www.sexten-cfa.eu/conferences/2018/details/97-clues-on-grb-origin-from-chemical-evolution-models.html, id.1.
- Amati, L.; O'Brien, P.; Götz, D.; Bozzo, E.; Tenzer, C.; Frontera, F.; Ghirlanda, G.; Labanti, C.; Osborne, J. P.;Stratta, G.; and 201 coauthors, *The THESEUS space mission concept: science case, design and expected performances*, Advances in Space Research, Volume 62, Issue 1, p. 191-244.

- Stratta, G.; Ciolfi, R.; Amati, L.; Ghirlanda, G.; Tanvir, N.; Bozzo, E.; Gotz, D.; O'Brien, P.; Frontera, F.; Osborne, J. P.; and 48 coauthors, *THESEUS: a key space mission for Multi-Messenger Astrophysics*, Advances in Space Research, Volume 62, Issue 3, p. 662-682.

Surname Name Photo

Quevedo Hernando

Position: Full Professor - National Autonomous University of Mexico
Period covered: 2018

I Scientific Work

II Conferences and educational activities

II a Conferences and Other External Scientific Work

VIII Congress of Physics and Mathematics, talk: "The GPS of the future: A theoretical proposal" Puebla, Mex. (March 1 - 2, 2018)
Conference: International Conference Actual Problems of Modern Physics, talk: "Abdildin's formalism for rotating relativistic compact objects" Almaty, Kazakhstan (April 12 – 15, 2018)
Annual Meeting of the Division of Gravitation and Mathematical Physics, talk: "Geometrothermodynamics of the Universe" Mexico City (April 19, 2018)
Conference: Fifteenth Marcel Grossmann Meeting – MG15, talk: "Geometrothermodynamic cosmology" Rome, Italy (July 1 – 7, 2018)
Visit: Al-Farabi Kazakh National University, collaboration with M. Abishev, K. Boshkayev y S. Toktarbay, Almaty, Kazakhstan (September 13 – 30, 2018)
Visit: New Granada Military University and National University of Colombia collaboration in Black holes in modified theories of gravity and Applications of geometrothermodynamics in econophysics (November 26 – December 10, 2018)

II b Work With Students

II c Diploma thesis supervision

- Viridiana Pineda (PhD)
  Topic: Microscopic models for black holes
- Daniel Flores (PhD)
  Topic: Topological quantization of minisuperspaces
- Pedro Sánchez (PhD)
  Topic: Geometrothermodynamics in relativistic astrophysics
- Juan José Vega (PhD)
  Topic: Topological quantization of mechanical systems
- Servando Vargas (PhD)
  Topic: Mathematical structure of quadrupolar spacetimes
- Raúl Meléndez (MSc)

Topic: Relativistic geometrothermodynamics

- Andrés Solís (MSc)

Topic: Matching conditions in general relativity

- Luis Miguel Sánchez (MSc)
  Topic: Induced gravity
- Luis Fernando Aragón (MSc)
  Topic: Geometrothermodynamic cosmology

- Moisés E. Jiménez (BSc)
  Topic: Nacked shells
- Brandon A. Hernández (BSc)
  Topic: Black shells

II d Other Teaching Duties

II e. Work With Postdocs
- Francisco L. Escamilla, UNAM
- Daniel F. Higuita,

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

III b. Outside ICRANet

Course: Relativistic Cosmology

IV. Other

2018 List of Publication

SELF-ACCELERATED UNIVERSE INDUCED BY REPULSIVE EFFECTS AS AN ALTERNATIVE TO DARK ENERGY AND MODIFIED GRAVITIES
Luongo, Orlando, Quevedo, Hernando
FOUNDATIONS OF PHYSICS 48 Issue 1, 17-26 (2018)
https://doi.org/10.1007/s10701-017-0125-0

COMPARISON OF VACUUM STATIC QUADRUPOLAR METRICS
Frutos-Alfaro, F; Quevedo, H; Sanchez, PA
ROYAL SOCIETY OPEN SCIENCE 5, Issue 5, 170826(2018)
https://doi.org/10.1098/rsos.170826

NON-VALIDITY OF I-LOVE-Q RELATIONS FOR HOT WHITE DWARF STARS
Boshkayev, K; Quevedo, H
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY 478, Issue 2, 1893-1899 (2018)
https://doi.org/10.1093/mnras/sty1227

OBSERVERS IN KEER SPACETIMES: THE ERGOREGION ON THE EQUATORIAL PLANE
Pugliese, D; Quevedo, H
European Physical Journal C: Particles and Fields 78 Issue 1, 69(2018)
DOI: 10.1140/epjc/s10052-018-5569-7

TOPOLOGICAL CHARACTERIZATION OF HIGHER DIMENSIONAL CHARGED TAUB-NUT INSTANTONS
Flores-Alfonso, Daniel; Quevedo, Hernando
arXiv:1806.10135 Accepted in Journal of Geometry and Symmetry in Physics

FLUX QUANTIZATION IN DILATONIC TAUB-NUT DYONS
Flores-Alfonso, D; Quevedo, H.
arXiv:1801.02586 Accepted in Journal of Geometry and Symmetry in Physics

CHERN INDEX OF TAUB-BOLT INSTANTONS IN EINSTEIN-BORN-INFELD GRAVITY
Flores-Alfonso, D; Quevedo, H
arXiv:1807.00808 Accepted in Journal of Geometry and Symmetry in Physics

NONPERTURBATIVE QUANTIZATION A LA HEISENBERG AND THERMO-DYNAMICS OF MONOPOLE CONFIGURATIONS
Vladimir Dzhunushaliev, Vladimir Folomeev, Hernando Quevedo
arXiv:1708.06381 Accepted in Gravitation and Cosmology

KINEMATIC AND STATISTICAL INCONSISTENCIES OF HORAVA-LIFSHITZ COSMOLOGY
Luongo, O; Muccino, M; Quevedo, H
arXiv:1811.05227 Submitted to Physics of the Darh Universe

QUASI-HOMOGENEOUS BLACK HOLE THERMODYNAMICS
Hernando Quevedo, Maria N. Quevedo, Alberto Sanchez
arXiv:1812.10599 Submitted to European Physical Journal C

STATISTICAL ORIGIN OF LEGENDRE INVARIANT METRICS
V. Pineda-Reyes, Lenin F. Escamilla-Herrera, Christine Gruber, Francisco Nettel, Hernando Quevedo
arXiv:1811.09970 Submitted to Journal of Mathematical Physics

MODELING REPARAMETRIZATIONS IN THERMODYNAMIC PHASE SPACE
Viridiana Pineda-Reyes, Lenin F. Escamilla-Herrera, Christine Gruber, Francisco Nettel, Hernando Quevedo
arXiv:1808.06976 Submitted to Journal of Mathematical Physics

NON-EXTENSIVE STATISTICAL MECHANICS OF A SELF-GRAVITATING GAS IN THE TSALLIS FRAMEWORK
Lenin Escamilla-Herrera, Christine Gruber, Viridiana Pineda, Hernando Quevedo

Lecturers

Wiltshire, David L.

Position: Professor, School of Physical & Chemical Sciences, University of Canterbury, Christchurch, New Zealand

Period at ICRANet: 29 July 2008 – 30 October 2008

I Scientific Work

Inhomogeneous Cosmology, Backreaction, the Averaging Problem in General Relativity.

II Conferences and educational activities

II a Conferences and Other External Scientific Work, presented talks at:

- *New Zealand Square Kilometre Array Forum, Auckland, NZ, 13-14 February, 2018*
- *CosmoBack – From inhomogeneous Cosmology to Cosmological Backreaction, Marseille, France,28-31 May, 2018*
- *Birthday Colloquium for JörgFrauendiener, Dunedin, NZ, 29 August 2018*

II b Studentsupervision: Supervised 2 PhD students– *Yong-Zhuang Li, AstaHeinesen*

II d Other Teaching Duties – Gave three lecture courses at University of Canterbury: *PHYS203 Quantum Physics; PHYS326 Classical Mechanics and Symmetry Principles; PHYS415 General Relativity.*

III. Service activities*III b. Outside ICRANet:* Inhomogeneous Cosmologies Workshop Organizing Committee; Editorial Board of *Classical and Quantum Gravity*; Academic Board at the University of Canterbury; President of NZ Institute of Physics; Australasian Society for General Relativity and Gravitation Committee; International Society on General Relativity and Gravitation Committee.

IV. Other activities Presented seminars at *University of Melbourne, Australia*, 1/5/2018; *University of Canterbury, NZ, 27*/7/2018

2018 List of Publications

- Y.-Z. Li, P. Mourier, T.Buchertand D.L. Wiltshire,*"Lagrangiantheory of structure formation in relativisticcosmology. V. Irrotationalfluids"*, Physical Review D **98** (2018) 043507 [28pp]

Research Scientists

ARGÜELLES CARLOS RAÚL

Position: Assistant Professor - La Plata National University (UNLP) – Physics Department & Researcher (permanent position) at CONICET (IALP-UNLP)– Argentina.
Period covered: 2016 - Present

I Scientific Work

Theoretical and phenomenological aspects of particle Dark Matter, self-gravitating systems, General Relativity and extensions, compact objects, Black Hole Physics, galactic dynamics, Cosmology, Neutrino Physics beyond standard model.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

Invited speaker and member of the International Coordinating Commitee at the Fifteenth Marcel Grossmann Meeting MG15 – Rome, Italy, July 1 –7 2018

Assistant at LAPIS 2018: La Plata International School on Astronomy and Geophysics (FCAGLP-UNLP), La Plata, Argentina, April 23 –27 2018

Invited speaker at the II South American Dark Matter Workshop (ICTP-SAIFR) – Sao Paulo, Brazil, November 21 –23 2018

Invited speaker (plenary) at the 3rd Colombian Meeting on High Energy COMHEP (Santiago de Cali University) – Cali, Colombia, December 3 –7 2018

II b Work With Students

Master in Science Thesis supervisor of two graduate students. Area: Physics.

- Graduate Student: Manuel Ignacio Díaz - University of Buenos Aires (UBA).

Thesis Title: "Thermodynamics of self-gravitating systems of fermions in General Relativity and its applications to Dark Matter and Cosmology". Mark: 10/10. Year of finalization: 2018.

- Graduate Student: Rafael Yunis - University of Buenos Aires (UBA).

Thesis Title: "Study of fermionic Dark Matter with indirect detection methods". Mark: 10/10. Year of finalization: 2018.

II c Diploma thesis supervision

Ph.D. co-advisor

Ph.D. Student: Andreas Krut. Thesis: Dark matter and galactic structures. Institution: ICRANet-Erasmus Mundus Joint Doctorate (fifth cicle) Pheriod covered: (2014-2018). Director: Prof. Dr. R. Ruffini

II d Other Teaching Duties

Assistant Professor position in Theoretical Physics at La Plata National University (UNLP – Physics department)

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

Scientific collaborator with the Astroparticle Physics and Dark Matter group of ICRANet; Ph.D advisor of Mr. Rafael Yunis; Meeting conferences.

III b. Outside ICRANet

Researcher (permanent position) at CONICET – Argentina. Working place: FCAGLP - UNLP, La Plata, Argentina. Paseo del Bosque, Casco Urbano, B1900FWA La Plata, Buenos Aires. Phone: +54 0221 4236593 Int. 1052. Teaching activities as Assistant Professor at UNLP.

IV. Other

2018 List of Publication

[1] ARGÜELLES, C. R.; GRANDI, NICOLÁS E., "Fermionic halos at finite temperature in AdS/CFT". JOURNAL OF HIGH ENERGY PHYSICS - (Online).: SPRINGER. 2018 vol.2018 n°5. DOI: 10.1007/JHEP05(2018)118, arXiv:1712.05866

[2] ARGÜELLES, C.R.; KRUT, A.; RUEDA, J.A.; RUFFINI, R., "Novel constraints on fermionic dark matter from galactic observables I: The Milky Way". Physics of the Dark Universe.: Elsevier. 2018 vol.21 n°. p82 - 89. DOI: 10.1016/j.dark.2018.07.002

[3] KRUT, A.; ARGÜELLES, C.R; RUEDA, J.A.; RUFFINI, R., "Galactic Constraints on Fermionic Dark Matter". Astronomy Reports. SPRINGER. Vol. 62, Issue 12, pp.898-904. DOI: 10.1134/S1063772918120247

[4] ARGÜELLES, C.R.; KRUT, A.; RUEDA, J.A.; RUFFINI, R., "Novel constraints on fermionic dark matter from galactic observables II: Galaxy scaling relations". Physics of the Dark Universe (submitted), arXiv:1810.00405

[5] YUNIS R.; ARGÜELLES, C.R.; MAVROMATOS, N. E.; MOLINÉ, A.; KRUT, A.; RUEDA, J.A.; RUFFINI, R., "New constraints on sterile neutrino dark matter from the Galactic Center". JCAP (submitted), arXiv:1810.05756

Sigismondi Costantino

Position: Professor
Period covered: 11/2017-1/2019

I Scientific Work

Positional Astronomy and History of Astronomy: study of the measurements of the tropical year.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

Organ Symposium, St. Guilhem-le-Désert, Montpellier 19-21 May 2018, invited
Marcel Grossmann Meeting XV Rome 1-8 July 2018, invited
IAU General Assembly XXX Vienna 27 August 2018, invited
XXVI GAD Gruppo di Astronomia Digitale meeting Osservatorio Montagna Pistoiese 12-14 october 2018, invited
II week of Asiago Astronomy Summer School 23-30 August 2018, invited

II b Work With Students

"Alternanza Scuola-Ricerca" Introduzione all'Astrofisica Relativistica ITIS Marconi, Civitavecchia (30 ore); ITIS Ferraris, Roma (80 ore); Liceo Galilei, Pescara (30 ore).

Asiago Summer School of Astronomy for Lyceum: 3 nights of observations (Giacobini Zinner Comet; the last Supernova AT2018fjy; the Nova of Ohpiuchs 2018 no.3) with the Galileo Telescope of 122 cm.

II c Diploma thesis supervision Tycho Brahe, with Giorgio Rossi, UPRA

II d Other Teaching Duties

Conference on the Relation Science-Faith, Asiago Observatory, 28 August 2018

La Notte dei Ricercatori @ ICRANet 28 september 2018 organization and

Conference on the 50th Anniversary of the Man on the Moon + observation of Mars in Opposition, Pescara 28 september 2018

Conference on Astronomical Refraction, Liceo Galilei Pescara 10 november 2018

Conference on Ultima Thule and the next Eclipse, Liceo Galilei Pescara 19 january 2019

II e. Work With Postdocs with Ahmed Altafi, Tehran Observatory.

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

Organization and Chair of Angelo Secchi Bicentennial at the Marcel Grossmann Meeting XV: 2 July 2018.

Organization and Chair of the 2018 Gerbertus Meeting on May 8 in Museum of the Terme of Diocleziano and in the sala Cappuzzo at St. Maria Odigitria, via del Tritone 84 Rome.

III b. Outside ICRANet

Science and Faith Institute, University Regina Apostolorum, Rome: Astronomy in Basilica, meridian observations in S. Maria degli Angeli at the Meridian Line. Measure of the Tropical year using observations made only with this meridian line in 1703 and 2018.

IV. Other

Publication of GERBERTVS International Academic Journal on History of Science numbers 10 and 11 online

2018 List of Publication

1 2018Gerb...11...27S 10/2018

Sigismondi, Costantino

Il profilo d'intensità della penombra durante l'eclissi lunare

2 2018iau3.book...13S 09/2018

Sigismondi, Costantino; Sterken, Christiaan; Pietroni, Silvia

The rediscovery of the obliquity meter in the meridian line of St. Maria degli Angeli in Rome

3 2018iau3.book...12S 09/2018

Sigismondi, Costantino; Sterken, Christiaan; Regoli, Irene

The orientation of the Constantinian Basilica of St. Peter in Vatican

4 2018Gerb...11...21S 08/2018

Sigismondi, Costantino

Summer solstice decorations on the meridian line of S. Maria degli Angeli in Rome are forgotten obliquity meters

5 2018Gerb...11...13S 05/2018

Sigismondi, Costantino; Altafi, Hamed

Visual and H-alpha measurements of solar diameter of 9 may 2016 mercury transit

6 2018arXiv180202056S 12/2017

Sigismondi, Costantino

Differential refraction, 2017 winter solstice timing and true ecliptic obliquity measured at the meridian line of Santa Maria degli Angeli in Rome

Visiting Scientists

Ansoldi Stefano

Position: Researcher, permanent, full time, University of Udine
Period covered:

I Scientific Work

1. Vacuum decay with wormhole creation, and its effects in the early universe (in collaboration with Takahiro Tanaka)
2. Study of generalized covariant Galileon models, and phenomenological bounds coming from ISW-galaxy cross-correlations (in collaboration with F. Gaicomello, Antonio de Felice)
3. Realization of the maximum curvature hypothesis in *f(R)* theories (in collaboration with Eduardo Guendelman, Hideki Ishihara, Yuki Sakakihara)
4. Realization and maintenance of an automated Fermi data analysis and alert system for target of observations in very high energy gamma rays (MA4U, Magic Automated Analyzing And Alerting Unit)
5. Preliminary development of an automated system for selection of gravitational wave and other alerts using VOEvents (TATA, The Automated Transient Advocate)
6. Development of MPSS (MAGIC Proposal Submission System), a WEB tool for submission of observation proposals to the MAGIC telescope

II Conferences and educational activities

II a Conferences and Other External Scientific Work

Talks

1. 2018, July 5: *A solved problem and future perspectives in baby/child universe formation*, BASIC, Bahamas

Outreach activities

1. 2018, April 20: "Stephen Hawking, black holes and the future of our universe" (in Italian "L'eredità di Stephen Hawking, I buchi neri e il destino dell'universo"), AFAM seminar, Remanzacco, Italy

II b Work With Students

Please, see the sections below about thesis/dissertation supervision, and internship supervision

II c Diploma thesis supervision

Undergraduate thesis

1. Francesco Pisani (supervisor): *Schwarzschild geometry and black holes* (in Italian, Geometria di Schwarzschild e buchi neri)
2. Alessandro Longo (supervisor): *Geometrical and physical properites of spacetime singularities* (in Italian, Proprietà fisiche e geometriche delle singolarità nello spaziotempo)
3. Davide De Biasio (supervisor): *Goedel's solution to Einstein field equations*
4. Vito Dichio (supervisor): *Dynamics on differentiable manifolds* (in Italian, Dinamica su varietà differenziabili)
5. Gabriele Degano (supervisor): *Geometry and physics of the Lense-Thirring effect*
6. Giovanni Fasiolo (supervisor): *Non inertial observers and the concept of quantum vacuum* (in Italian, Osservatori non inerziali ed il concetto di vuoto quantistico)
7. Marco Matteini (supervisor): *Basics of vacuum decay in presence of gravity*
8. Pietro Smaniotto (supervisor): *Basic ideas behind the concept of black hole entropy* (in Italian, Alcune idee fondamentali per la comprensione del concetto di entropia dei buchi neri)

Master thesis

1. Francesco Giacomello (supervisor, in collaboration with Antonio De Felice): *Analysis of the Galileon Tracker solution's parameter space through ISW-galaxy cross correlation*
2. Nico Sama` (supervisor, in collaboration with Yuki Sakakihara): *Massive gravity and bigravity*
3. Filippo Sottocorona (supervisor):

Udine school of excellence end of year dissertations

1. Paolo Arnaudo (supervisor): *Basic ideas in cosmology* (in Italian, Alcuni concetti fondamentali in cosmologia)
2. Diego Perissutti (supervisor): *Relativistic magnetohydrodynamics* (in Italian, Magneto-idrodinamica relativistica)
3. Claudio Verardo (supervisor): *Relativistic electrodynamics* (in Italian, Elettrodinamica relativistica)

II d Other Teaching Duties

Supervisor of about 10 internships about theoretical physics, differential geometry, and gravitational physics

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

III b. Outside ICRANet

Teaching:

1. General Relativity (within the joint master course between the universities of Trieste and Udine)
2. Advanced General Relativity (within the joint master course between the universities of Trieste and Udine)
3. General relativity (School of excellence, Udine University)

IV. Other

2018 List of Publication

[PREPRINT] *Bounds of ISW-galaxy cross-correlations on generalized covariant Galileon models*, F. Giacomello, A. De Felice, S. Ansoldi, **arXiv:1811.10885** [astro-ph.CO]

1 *From Black Holes to Baby Universes: Exploring the Possibility of Creating a Cosmos in the Laboratory*, S. Ansoldi, Z. Merali, E. I. Guendelman, arXiv:1801.04539 [gr-qc], Bulg. J. Phys. **45** (2018) 203

2 *Discovery of TeV gamma-ray emission from the neighbourhood of the supernova remnant G24.7+0.6 by MAGIC*, V. A. Acciari, S. Ansoldi, et al. (MAGIC collaboration), arXiv:1812.04854 [astro-ph.HE], DOI:10.1093/mnras/sty3387, Mon. Not. Roy. Astron. Soc. **483** (2019) 4578

3 *Periastron Observations of TeV Gamma-Ray Emission from a Binary System with a 50-year Period,* A. U. Abeysekara, …, S. Ansoldi, et al. (VERITAS and MAGIC collaborations), arXiv:1810.05271 [astro-ph.HE], DOI:10.3847/2041-8213/aae70e, Astrophys. J. Lett. **867** (2018) L19

4 *Constraining very-high-energy and optical emission from FRB 121102 with the MAGIC telescopes*, V. A. Acciari, S. Ansoldi, et al. (MAGIC collaboration), arXiv:1809.00663 [astro-ph.HE], DOI:10.1093/mnras/sty2422, Mon. Not. Roy. Astron. Soc. **481** (2018) 2479

5 *The extreme HBL behaviour of Markarian 501 during 2012*, (M. L. Ahnen, S. Ansoldi, et al. (MAGIC, FACT and VERITAS collaborations), arXiv:1808.04300 [astro-ph.HE], DOI:10.1051/0004-6361/201833704, Astron. Astrophys. **620** (2018) A181

6 *Multimessenger observations of a flaring blazar coincident with high-energy neutrino IceCube-170922A*, M. G. Aartsen, …, S. Ansoldi, et al. (IceCube, Fermi-LAT, MAGIC, AGILE, ASAS-SN, HAWC, H.E.S.S., INTEGRAL and Kanata, Kiso, Kapteyn, Liverpool Telescope, Subaru, Swift, NuSTAR, VERITAS and VLA/17B-403 collaborations), arXiv:1807.08816 [astro-ph.HE], DOI:10.1126/science.aat1378, Science **361** (2018) 6398, eaat1378

7 *The blazar TXS 0506+056 associated with a high-energy neutrino: insights into extragalactic jets and cosmic ray acceleration,* S. Ansoldi, et al. (MAGIC collaboration), arXiv:1807.04300 [astro-ph.HE], DOI:10.3847/2041-8213/aad083, Astrophys. J .Lett. **863** (2018) L10

8 *The broad-band properties of the intermediate synchrotron peaked BL Lac S2 0109+22 from radio to VHE gamma-rays*, S. Ansoldi, et al. (MAGIC and Fermi-LAT collaborations), arXiv:1807.02095 [astro-ph.HE], 10.1093/mnras/sty1753, Mon. Not. Roy. Astron. Soc. **480** (2018) 879

9 *Multi-wavelength characterization of the blazar S5 0716+714 during an unprecedented outburst phase*, M. L. Ahnen, S. Ansoldi, et al. (MAGIC, MWL and Fermi-LAT collaborations), arXiv:1807.00413 [astro-ph.HE], DOI:10.1051/0004-6361/201832677, Astron. Astrophys. **619** (2018) A45

10 *Constraining Dark Matter lifetime with a deep gamma-ray survey of the Galaxy Cluster with MAGIC*, V. A. Acciari, S. Ansoldi, et al. (MAGIC collaboration), arXiv:1806.11063 [astro-ph.HE], DOI:10.1016/j.dark.2018.08.002, Phys. Dark Univ. **22** (2018) 38-47

11 *Detection of persistent VHE gamma-ray emission from PKS 1510-089 by the MAGIC telescopes during low states between 2012 and 2017*, V. A. Acciari, S. Ansoldi, et al. (MAGIC and Fermi-LAT collaborations), arXiv:1806.05367 [astro-ph.GA], DOI:10.1051/0004-6361/201833618, Astron. Astrophys. **619** (2018) A159

12 *Gamma-ray flaring activity of NGC1275 in 2016–2017 measured by MAGIC*, S. Ansoldi et al.(MAGIC collaboration), arXiv:1806.01559 [astro-ph.HE], DOI:10.1051/0004-6361/201832895, Astron. Astrophys. **617** (2018) A91

13 *Limits on the flux of tau neutrinos from 1 PeV to 3 EeV with the MAGIC telescopes*, M. L. Ahnen, S. Ansoldi, et al. (MAGIC collaboration), arXiv:1805.02750 [astro-ph.IM], DOI:10.1016/j.astropartphys.2018.05.002, Astropart Phys. **102** (2018) 77-88

14 *Detection of the blazar S4 0954+65 at very-high-energy with the MAGIC telescopes during an exceptionally high optical state*, M. L. Ahnen, S. Ansoldi, et al. (MAGIC collaboration), arXiv:1801.04138 [astro-ph.HE], DOI:10.1051/0004-6361/201832624, Astron. Astrophys. **617** (2018) A30

15 *Constraints on particle acceleration in SS433/W50 from MAGIC and H.E.S.S. observations*, M. L. Ahnen, S. Ansoldi, et al. (MAGIC and H.E.S.S. collaborations), arXiv:1707.03658 [astro-ph.HE], DOI:10.1051/0004-6361/201731169, Astron. Astrophys. **612** (2018) A14

16 *Indirect dark matter searches in the dwarf satellite galaxy Ursa Major II with the MAGIC Telescopes*, M. L. Ahnen, S. Ansoldi, et al. (MAGIC collaboration), arXiv:1712.03095 [astro-ph.HE], DOI:10.1088/1475-7516/2018/03/009, JCAP **03** (2018) 009

Surname Name Arkhangelskaja Irene

Position:
senior lecturer,
Department of Experimental Nuclear Physics and Cosmophysics,
National Research Nuclear University "MEPhI",
Moscow, Russia
Period covered: 2018

I Scientific Work

Gamma-Ray Bursts investigation (spectra, temporal profiles, models) on data of detectors onboard near-Earth satellites,

Background condition at near-earth orbits in energy range 5 keV-100 MeV and appearance of magnetosphere phenomena on such orbits in this energy range,

Gamma-emission processes in astrophysics sources,

Dark matter and dark energy presence observation possibilities in satellite experiments,

Methods of gamma-quanta and charged particles identification due detectors based on schintillators,

Participation in gamma-telescope GAMMA 400 prototype calibrations on synchrotron "PAKHRA".

Fractal analysis application to data of gamma-detectors onboard satellites both at near-Earth and high apogee orbits.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

I took part in 26th Extended European Cosmic Ray Symposium and 35th Russian Cosmic Ray Conference held in Barnaul (Russia) July 6 - 10, 2018 with 3 talks as presented author and was co-author in other 3 talks. Also I took part in IV international conference on particle physics and astrophysics held in NRNU MEPhI (Moscow, Russia) October 22 –26, 2018 with 1 talk as presented author and was co-author in other 5 talks.

II b Work With Students

I'm mentor of first year students in Department of Experimental Nuclear Physics and Cosmophysics NRNU MEPhI

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

I'm member of Marcel Grossmann Meeting International Coordinating Committee since 2009

III b. Outside ICRANet

As senior lecturer in National Research Nuclear University "MEPhI" I read 4 courses of lections for the students at Master's degrees:

1) Actual problems of micro- and cosmophysics (in Russian)

2) Nuclear physics (in Russian and in English)

3) Electroweak interaction (in Russian)

4) C and C++ programming

and course Introduction to Nuclear physics for bachelors

IV. Other

I was Scientific Secretary of Program Committee of the International Symposium on Cosmic Rays and Astrophysics held in NRNU MEPhI (Moscow) 20 –22 June 2017 and up to end of 2018 I provide proceeding editing process

2018 List of Publication

1. Arkhangelskaja, I. V. The sources of long GRBs: population inhomogeneity or possibility its using as standard candles, Journal of Physics: Conference Series, in press (2018)

2. Arkhangelskaja, I. V.; Arkhangelskiy, A. I.; Chasovikov, E. N. et al, Additional aperture detectors of gamma-telescope GAMMA 400 calibrations on synchrotron "PAKHRA": possibility of temporal profiles fractal analysis, Journal of Physics: Conference Series, in press (2018)

Boçi Sonila

Position: Visiting Researcher at ICRANet
Period covered: 30/04/2018 to 13/05/2018

I Scientific Work

In the field of Astrophysics, I have been working on the physics of Gamma Ray Bursts since 2006, participating in many scientific activities and publishing some papers. In the framework of agreement between ICRANet and University of Tirana, I visited ICRANet Pescara Center to work on the emission mechanisms of Gama Ray Bursts in the fireshell model.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

II b Work With Students

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

III b. Outside ICRANet

IV. Other

2018 List of Publication

S. Boci , M. Hafizi "*On the PDS of GRB light curves" (2018)* Memorie della Società Astronomica Italiana, Vol. 89 n. 2, p. 288

Surname and Name **Hoang Ngoc Long**

Position: Head of Particle Physics section, Graduate School, Institute of Physics

Vietnamese Academy of Science and Technology

Period covered: From 2000 --- now

I. Scientific Work (5 papers)

1. A highly predictive A_4 flavour 3-3-1 model with radiative inverse seesaw mechanism, A. E. C\'arcamo Hern\'andez, H. N. Long, J. Phys. G: Nucl. Part. Phys. 45 (2018) 045001 (31 pages). DOI: 10.1088/1361-6471/aaace7
2. Baryogenesis in the Zee-Babu model, Vo Quoc Phong, Nguyen Chi Thao and Hoang Ngoc Long, Phys. Rev. D 97, 115008 (2018), (9 pages), DOI: 10.1103/PhysRevD.97.115008,
3. A novel 3-3-1 model for the generation of the SM fermion mass and mixing pattern, A. E. C\'arcamo Hern\'andez, Sergey Kovalenko, H. N. Long, and Ivan Schmidt, J. High Energy Phys. 07 (2018) 144 (37 pages), DOI:10.1007/JHEP07(2018)144.
4. The first $\Delta(27)$ flavor 3-3-1 model with low scale seesaw mechanism, A. E. C\'arcamo Hern\'andez, H. N. Long, and V. V. Vien, Eur. Phys. J. C 78, No 10 (2018) 804 (12 pages). DOI: 10.1140/epjc/s10052-018-6284-0,

5. General one-loop formulas for decay $h\rightarrow Z\gamma$, L. T. Hue, A. B. Arbuzov, T. T. Hong, T. Phong Nguyen, D. T. Si and H. N. Long, Eur. Phys. J. C 78, No 11 (2018) 885 (17 pages). DOI: 10.1140/epjc/s10052-018-6349-0

II. Conferences and educational activities

II a. Conferences and Other External Scientific Works:

- *Editor of journal of Vietanm:* ***Communications in Physics****.*

II b. Work With Students: I give lectures on Quantum Field Theory for Undergraduate students, Hanoi University of Education, Standard Model for Graduate students, Can Tho Unicersity

II c. Diploma thesis supervision: I am supervisor for5 Ph. D. students and 6 Master Students.

II d. Other Teaching Duties: I am a referee for some Ph. D. Theses.

II e. Work With Postdocs: Now I work with Postdoc: V. Q. Phong and L. T. Hue

III. Service activities

III a. Within ICRANet: I hope to visit ICRANET next year 2019

III b. Outside ICRANet:

IV. Other I am referee for some International Journal such as: Phys. Rev. D, Physics Letters B, Int. J. Mod. Phys. A,…

Lee Hyung Won

Position:
Period covered:

I Scientific Work

The effect of eccentric waveform for parameter estimation with student Jeongcho Kim and Dr. Chunglee Kim

Code development for parameter estimation with new gravitational waveforms with student Jeongcho Kim

II Conferences and educational activities

II a Conferences and Other External Scientific Work

Participating 15th Marcel-Grossman Meeting, 2~7 July, 2018, University of Rome, Italy

II b Work With Students

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities

III a. Within ICRANet

III b. Outside ICRANet

Teaching activities : C Programming, Game Engine Development

IV. Other

2018 List of Publication

A. LIGO-Virgo Collaboration papers published in 2018.

Surname Name Lin Wenbin **Photo** 

Position: Distinguished Professor, University of South China
Period covered: Jan. 2018 – present

Position: Adjunct Professor, Southwest Jiaotong University
Period covered: Jun. 2018 – present

Position: Professor, Southwest Jiaotong University
Period covered: Oct. 2009 – Dec. 2017

I Scientific Work

I have been working in the several fields including Gravitation and Cosmology, Electromagnetic Field and Microwave Technology, and Scientific Computing.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

(1) The 2017 Annual Meeting of Gravitation and Relativistic Astrophysics and The Fifth Galileo-Xu Guangqi Meeting, Chengdu, June 25-30, 2017.

(2) Fifteenth Marcel Grossmann Meeting - MG15, Rome, July 1-7, 2018.

II b Work With Students

I have supervised 10 PhD students and more than 20 Master students, working in the following fields: Gravitation and Relativistic Astrophysics, Electromagnetic Field and Microwave Technology, and Scientific Computing.

II c Diploma thesis supervision

(1) Study of relativistic effects in gravitational field of a moving black hole, PhD thesis (2018)
(2) Theoretical and numerical study of the high power laser pulse self-focusing and filamentation, PhD thesis (2017)
(3) Numerical investigation on femtosecond filamentation in gas, PhD thesis (2016)
(4) Harmonic metric for charged rotating black hole and its post-newtonian dynamics, PhD thesis (2015)

II d Other Teaching Duties

Taught the undergraduate course <<Computational Physics>>.

II e. Work With Postdocs

None

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

(1) Member of International & Local Organizing Committee, The 2017 Annual meeting of the Division of Gravitation and Relativistic Astrophysics of the Chinese Physical Society / The Fifth Galileo-Xu Guangqai Meeting, Chengdu, June 25-30, 2017.

(2) Member of International Coordinating Committee, Fifteenth Marcel Grossmann Meeting - MG15, Rome, July 1-7, 2018.

III a. Within ICRANet

None

III b. Outside ICRANet

None

IV. Other

2018 List of Publication

1. C. Jiang, **W. Lin**, "Post-Newtonian light propagation in Kerr-Newman spacetime", Phys. Rev. D 97, 024045 (2018).
2. Y. Chen, **W. Lin**, S. Li, A. Raza, "A Broadband ± 45°Dual-polarized Multi-Dipole Antenna Fed by Capacitive Coupling", IEEE Trans. Antennas Propagat. 66, 2644 (2018).
3. A. Raza, **W. Lin**, Y. Liu, A. Sharif, Y. Chen, "A magnetic-loop based monopole antenna for GPR applications", Microwave & Opt. Tech. Lett., First published: 29 December, 2018. https://onlinelibrary.wiley.com/doi/pdf/10.1002/mop.31690
4. Y. Chen, **W. Lin**, C. Ma, C. Liao, "A novel unidirectional multi-dipole broadband antenna element", Microwave & Opt. Tech. Lett., First published: 17 October, 2018. https://onlinelibrary.wiley.com/doi/pdf/10.1002/mop.31451
5. Y. Chen, **W. Lin**, C. Liao, S. Li, A. Raza, "A broadband dual-polarized multi-dipole antenna fed by coplanar stripline", Microwave & Opt. Tech. Lett., 60, 2069 (2018).
6. G. Kan, **W. Lin**, C. Liu, D. Zou, "An array antenna based on coplanar parasitic patch structure", Microwave & Opt. Tech. Lett. 60, 1016 (2018).
7. L. Wang, **W. Lin**, X. Wang, "Effects of resonant magnetic perturbation on the triggering and the evolution of double tearing mode", EPL, 121, 45001 (2018).
8. L. Hu, L. Ren, **W. Lin**, "A reconsideration of negative ratings for network-based recommendation", Physica A, 490, 690 (2018).

Surname Name

Photo

Klaudio Peqini

Position: Visiting Researcher
Period covered: 16 September – 30 September 2018

I Scientific Work (before 2018)

1. 05.2015 Duka B., **Peqini K.**, De Santis A., Pavon-Carrasco F.J., 2015. Using "domino" model to study the secular variation of the geomagnetic dipolar moment. Phys. Earth. Planet. Inter. 242, 9–23. **Impact factor: 2.480.** http://dx.doi.org/10.1016/j.pepi. 2015.03.001

2. 09.2015 **Peqini K.**, Duka B., De Santis A., 2015. Insights into pre-reversal paleosecular variation from stochastic models. Front. Earth Sci. 3:52. doi: 10.3389/feart.2015.00052. **Impact factor: 1.970.**

3. 01.2016 **Peqini K.**, Duka B., 2016. Insights into reversals mechanism of the geomagnetic field through stochastic models simulations. Proceedings Book of The International Physics Conference Tirana 2015. https://sites.google.com/site/albanian physics2015/

4. 06.2016 Duka B., Duka E., **Peqini K.**, 2016. Recovering external contribution from the monthly mean series of a given geomagnetic observatory. ANNALS OF GEOPHYSICS, 59, 3, G0321; doi:10.4401/ag-6971. **Impact factor: 1.374.**

5. 07.2017 **Peqini K.**, Duka B., 2017. Statistical Indicators as Potential Early Signals of Transitions in Time Series Obtained by a Statistical Model: Geomagnetic Field Case. Proceedings book of the International Conference on Applied Statistics and Econometrics (ICASE 2017) 27-28 April 2017 Tirana, Albania. http://icase.epoka.edu.al/2017/category- proceedings-1729.html

II Conferences and educational activities

II a Conferences and Other External Scientific Work

1. 05.2014 **K. Peqini** and B. Duka: "Applying "domino" model to study dipolar geomagnetic field reversals and secular variation". Poster presentation in the annual conference of EGU held in Vienna (27 April-2 May 2014).

2. 04.2015 **K. Peqini** and B. Duka: "Comparison of the dipolar magnetic field generated by two Ising-like models". Poster presentation in the annual conference of EGU held in Vienna (12-17 April 2015).

3. 06.2015 E. Filippi, A. De Santis, F. J. Pavon-Carrasco, B. Duka, **K. Peqini**: "Some evidence for a Turbulent Diffusion in the Geodynamo from geomagnetic global models of the last few millennia". Poster presentation in the IUGG Conference 2015 held in Prague (22 June-2 July 2015).

4. 11.2015 **K. Peqini** and B. Duka: "Insights into reversals mechanism of the geomagnetic field through stochastic models simulations". Oral presentation in The International Physics Conference held in Tirana (13-14 November 2015).

5. 04.2016 **K. Peqini** and B. Duka: "Recovering the crustal and unmodelled external contributions to the geomagnetic field of the European area". Oral presentation in the annual conference of EGU held in Vienna (17-22 April 2016).

6. 09.2016 **K. Peqini**: Recent results on recovering the non-modeled external magnetic field and crustal magnetic field from the confrontation of regional and global models of the geomagnetic field. Oral presentation in The Second International Workshop on recent LHC results and related topics held in Tirana (26-27 September 2016). https://indico.cern.ch/event/561738/

7. 04.2017 **K. Peqini** and B. Duka: "Geomagnetic Crustal field Anomalies over small countries (Austria and Albania) according to regional and global models". Poster presentation in the annual conference of EGU held in Vienna (23-28 April 2017).

8. 04.2017 **K. Peqini**, B. Duka and A. Uka: "Statistical indicators as potential early signals of transitions in time series obtained by a statistical model: Geomagnetic field case". Oral presentation at the 1st International Conference on Applied Statistics and Econometrics (ICASE) 2017, held at Epoka University (27-28 April 2017).

9. 09.2017 B. Duka and **K. Peqini**: "Regional geomagnetic field modeling". Oral presentation at the XII Annual Meeting of ALBSHKENCA, Prishtina, Kosovo (01-03 September 2017).

10. 11.2017 **K. Peqini** and B. Duka: "Time variation of the velocity field in core-mantle boundary (CMB)". National conference KSNTEK, Tirana, 17-18 November, 2017.

11. 04.2018 K. Peqini, B. Duka and B. Leichter: "Jerks and the velocity field at the CMB recovered using gufm1 model". Poster presentation in the annual conference of EGU held in Vienna (08-13 April 2017).

12. 08.2018 **K. Peqini** and B. Duka: "The Velocity Field at the Earth's Core-Mantle Boundary". Oral presentation in the BPU (Balkan Physics Union) 10th Conference held in Sofia, Bulgaria (26-30 August, 2018).

13. 10.2018 **K. Peqini**: "Flow at the Core-Mantle Boundary and Jerks". Oral presentation in the III International Workshop on recent LHC Physics results and related topics held in Tirana, Albania (10-12 October 2018).

II b Work With Students

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

III b. Outside ICRANet

I have been teaching various courses at the Department of Physics of the Faculty of Natural Sciences of Tirana University. These courses range from General Physics (Mechanics, Electromagnetism) to courses in Theoretical Physics (Analytical Mechanics, Introductory Classical Electrodynamics and Introductory Statistical Physics)

IV. Other

Below is given a list of the scientific projects that I have been member of:

1. 2012-2014 Participant in the project: "Study of the stability of fluid dynamic systems in cylindrical and spherical geometry", project included in the Executive Program of Scientific and Technological Cooperation between Albania and Italy, for the years 2012 – 2014.

2. 2013-2015 Participant in the project: "Numerical experiments on the natural convection of the fluids between coaxial cylinders and concentric spheres (NUM-EXP-NAT-CONV)", a winning project of "hp-see-pilot-call-awarded- applications" (High Performance Computing in South East Europe).

3. 2013-2014 Participant in the project: "Numerical simulations of natural convection in cylindrical cavities and the determination of the indicators of critical phenomena in the time series of the geomagnetic field variation", funded by the Faculty of Natural Sciences, University of Tirana.

4. 2014-2015 Participant in the project: "Optimization and Scalability testing of a new OpenFoam application". Field of research is: Engineering an Energy Sources.

5. 2015-2017 Participant in the project: "Using ground and satellite data to study the variations of the geomagnetic field over Austria and Albania". This Project is in collaboration between University of Tirana and ZAMG (Zentrale Anstalt für Geophysik und Geodynamik) Vienna, Austria.

2018 List of Publication

1. 03.2018 **Peqini K.**, Duka, B., Dominici, G., 2018. Crustal field recovery and secular variation from regional and global models over Albania. ANNALS OF GEOPHYSICS, 61, 1, GM101, 2018. doi: 10.4401/ag-7419 **Impact factor: 1.374.**

2. 03.2018 **Peqini K.**, Duka B., 2018. Statistical indicators as potential early signals of transitions in time series obtained by a statistical model: geomagnetic field case. International Journal of Applied Statistics and Econometrics (IJASE) doi: 10.26384 /IJASE1807

3. 09.2018 **Peqini K.**, Duka B., Egli R., Leichter B., 2018. Crustal geomagnetic field and secular

variation by regional and global models for Austria. **111, 1, 048–063. doi: 10.17738/ajes.2018.0004 Impact factor: 1.034.**

4. 12.2018 **Peqini K.**, Duka B., 2018. Core-Mantle Boundary Velocity Field Recovering From a Four-Century Geomagnetic Field Model. JNTS (Journal of Natural and Technical Sciences), 46 (XXIII), 3–18.

Surname Name

Perez Martinez Aurora Maria Photo

Position: Senior Researcher/Senior Professor
Period covered: 2019

I Scientific Work

-Study of deformation of magnetized compact object. Proposal of a structure equations and model based on axial symmetric geometry.

-Study of neutral vector boson condensation en presence of magnetic field

-Study of Bose-Einstein Condensate stars.

II Conferences and educational activities 2018

1) INED Mérida Yucatán June 4-8 2018., Work presented: Impact of the magnetic field in EoS, the structure and velocities of the Quark Stars,
2) 2018 NeD (Non Equilibrium Dynamics) 2018, 16-21 abril Varadero: "Anisotropy emission of neutrinos from quark stars, relation with kicks of pulsars.",
3) MG15 Meeting Rome Italy 2-7 July. Work presented: Magnetized compact objects deformation and velocities, , 3 Julio 2018

.

II b Work With Students.

- Supervision of the master thesis of Lismary Suarez Gonzalez "Thermodynamical properties of neutral gases in presence of magnetic field at finite temperature. Astrophysical implications"

-Supervision of the PhD thesis of Gretel Quintero Angulo "Magnetized Bose-Gas. Astrophysical applications: Bose Einstein Condensation stars, Magnetic Collapse and Jets"

II c Diploma thesis supervision

-Diploma thesis of Physics of Samantha Lopez, Havana University. "Deformation of compact objects due to the magnetic field"

II e. Work With Postdocs

Work in collaboration with D. Manreza Paret in topics related to: Kick of magnetized quark stars, deformation of magnetized compact objects

III. Service activities [activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]

II a. **Within ICRANet**

1. Discussion of topics of common interest with Kuantay Boshkayev about rotating White Dwarfs

2. Collaboration with Jorge Rueda ICRAnet in " Time delay of radiation from pulsars due to magnetic field."

III b. ***Outside ICRANet*** **Collaboration:**

1) Collaboration with Gabriella Piccinelli from FES Aragon UNAM, Angel Sanchez from Facultad de Ciencias UNAM, Alejandor Ayala from Instituto de Ciencias Nucleares UNAM in the field: neutrino propagation in magnetized dense media and kicks of magnetized quark stars.

2) Collaboration with Gabriella Piccinelli from FES Aragon UNAM, Quantum Faraday rotation for weak magnetic field and astrophysical and cosmological applications.

3) Collaboration with Pedro Bargueno University of Los Andes Colombia, studies of magnetic collapse to astrophysical phenomenom.

Seminars and conferences

1) Magnetized strange quark stars anisotropies and consequences, University of Alabama, Tuscaloosa USA, Aurora Perez Martinez, 14 February 2018.
2) Objetos compactos, y campos magnéticos. Saint Thomas University, Aurora Perez Martinez 9 February 2018.
3) Magnetized strange quarks stars, structures and connection with kicks velocities, Universidad de Miami, Aurora Perez Martinez, 19 February 2018.
4) Universidad Tor Vergata, Departamento de Física work presented: velocities and deformations of magnetized compact objects, 6 July 2018
5) Conference in CINVESTAV Mérida, Impacto del campo magnético en la deformación y velocidad de traslación de objetos compactos¨ October 18, 2018.
6) Objetos compactos y Ondas Gravitacionales, , FES-Aragón UNAM, México City, México October 30 2018.

IV. Other

Awards

- Medal Carlos J Finlay 2018, Relevant Scientist, awarding by the Consejo de Estado de la República de Cuba.
- AENTA 2018 " Efecto Faraday cuántico: implicaciones astrofísicas y cosmológicas"
- Award of Cuban Academy of Science "Efecto del campo magnético en la deformación y velocidades de objetos compactos"

Organization of conferences and school:

Organization of Non Equilibrium Dynamics (NED) 2018, Varadero Abril 2018

List of Publications

1. Effects of magnetic fields and slow rotation in white dwarfs Diana Alvear Terrero, D. Manreza Paret, Aurora María Pérez Martínez. International Journal of Modern Physics D. Vol. 27, 2018, Pp. 19. http://dx.doi.org/10.1142/S0218271818500165

2.Kicks of magnetized strange quark stars induced by anisotropic emission of neutrinos," A.Ayala, D.M.Paret, A.Pérez Martínez, G.Piccinelli, A.Sánchez and J.S.R.Montaño, Phys.Rev. D **97**, no. 10, 103008 (2018)

3. Exact solutions of Einstein equations for anisotropic magnetic sources, D. Alvear Terrero, P. Bargueño, E. Contreras, Angulo,A. Perez Martinez G. Quintero and arXiv:1804.01439v1 [gr-qc] (submitted to IJMPD)

4. Modeling anisotropic magnetized White Dwarfs with metric D. Alvear Terrero, P. Bargueño, E. Contreras, Angulo,A. Perez Martinez G. Quintero . arXiv:1807.09943 accepted in PRD 2019

5. (Self-)Magnetized Bose-Einstein Condensate stars, G. Quintero Angulo, A Perez Martinez, H. Perez Rojas, D. Manreza Paret. arXiv:1812.07657v1 [astro-ph.HE] submitted to PRD

Proceedings

1. A non-relativistic magnetized vector boson gas at any temperature. L. Suarez , G. Quintero, A Perez Martinez and H. Perez Rojas arXiv:1811.00541v1 [cond-mat.quant-gas] (accepted as AIP Conferences Series INED 2018
2. Modeling anisotropic magnetized compact objects D. Alvear Terreroa, V. Hernandez Mederos, S. Lopez Perez, MG15 Proceedings World Scientific Series Conferences.

Other publications:

La Ciencia en la Cuba del siglo XXI: importancia de las Ciencias Básicas. Hugo Celso Pérez Rojas, Aurora Pérez Martínez, Diana Alvear Terrero, Gretel Quintero Angulo (accepted to publish in Temas, 2018)

Soroush Shakeri

Current position: **Post-Doctoral researcher at IPM Since Sept, 2017**
Researcher Visitor at ICRANet : **1 year-Since 2016-February**

I Scientific Area

- **Gamma Ray Bursts (GRBs)**

Data analysis and their phenomenological aspects-data reduction of GRBs, from Swift-BAT and XRT, Fermi-GBM and LAT and BATSE by using XSPEC, RMFIT, and the Swift-BAT and XRT pipelines to create spectra and light curves;

Circular polarization of GRB from different types of interaction such as photon-photon, photon-graviton, photon-axion and ..

Gravitational waves from Short Gamma Ray Bursts (SGRBs) and its impact on their electromagnetic signals

- **Strong Field QED Phenomena**

Strong field QED phenomena in astrophysics medium (Pulsars and GRBs) and Ground Based Laser Experiments

Phenomenology of particle interactions in the strong field regimes.

- **Pulsar Physics**

Nonlinear QED interactions in pulsar's magnetosphere

Investigation the impact of light by light scattering in X-ray emission of pulsars

Dark matter detection using Pulsar Timing Array (PTA)

- **Axion Dark Matter**

Light by Light Scattering as a Probe for Axion Dark Matter

Cavity Search for Axion Dark Matter

Axion-photon interaction and its impact on CMB polarization

- **Early Universe Cosmology**

Circular polarization of CMB from primordial perturbations and fundamental interactions

QCD phase transition and its cosmological consequences in the early Universe

Particle pair production in the early universe

Schwinger-pair production in the inflationary models

Skills

OS: Linux, Mac, Microsoft Windows

Software : Mathematica(xact-CMB quick-numerical methods) Maple(GRtensor)

Programming: Python-Fortran

Astrophysical Package: NASA Heasoft package for Spectral fitting of high energy emissions-

II Conferences and educational activities

II a Conferences and Other External Scientific Work

-Summer school on particle physics , 15-26 Jun 2015, ICTP Trieste, Italy
-The 21st international symposium on particles, strings and cosmology, 29 June to 3 July 2015, Trieste, Italy
- Fourteenth Marcel Grossmann Meeting - MGXIV of Rome (12-18 July, 2015), Rome, Italy
-IRAP Ph.D. Erasmus Mundus school, May 30th - June 3rd, 2016,Villa Ratti, Nice-France -Adriatic Workshop" Supernovae, Hypernovae and Binary Driven Hypernovae"-Pescara -Italy- June 20-30-2016.

-YITP long-term workshop Gravity and Cosmology 2018,January 29 - March 9, 2018
Yukawa Institute for Theoretical Physics, Kyoto University, Japan.
-Fifthteenth Marcel Grossmann Meeting, July 1 - 7, 2018 - MGXIV of Rome , Rome, Italy

III Within ICRANet

Visiting ICRANet June 18-July 18

Participatin at Fifthteenth Marcel Grossmann Meeting, July 1 - 7, 2018 - MGXIV of Rome , Rome, Italy

Presenting Two Oral Talks at MGXIV :

Oral Talk : Probing the vacuum structure from astrophysical objects to ground based laboratories, *July 3, 2018, Fifthteenth Marcel Grossmann Meeting, Rome, Italy*

Oral Talk : Probing Magnetic Field Configuration oF GRBs and afterglow from the polarized Emission*, July 6 Fifthteenth Marcel Grossmann Meeting, Rome, Italy*

III Outside ICRANet

Teaching Experiences :

Undergraduate Courses: *Quantum Mechanic(I), Basic Lab Physics, Payame Noor University of Ahvaz-IRAN-2012-2014*

Teacher Subjects at Isfahan University of Technology(IUT)-Isfahan-IRAN: *Foundations of Electromagnetic theory and Basic Lab Physics as undergraduate course,* ***2015-2016***

Organizer

-One Day Meeting on Cosmology,Cosmology: from theory to observations 28 February, 2018, IPM, Tehran, IRAN

2018 List of Publication

``***X-ray Flares in Early Gamma-ray Burst Afterglow'***' R. Ruffini, Y. Wang, Y. Aimuratov, L. Becerra, C.L.Bianco, M. Karlica, M. Kovacevic, L. Li, J.D. Melon Fuksman, R. Moradi, M. Muccino, A.V. Penacchioni,G.B. Pisani, D. Primorac, J.A. Rueda, S. Shakeri, G.V. Vereshchagin, S.-S. Xue**,Astrophys.J. 852 (2018)no.1, 53** [arXiv:1704.03821]

Circularly Polarized EM Radiation from GW Binary Sources. Soroush Shakeri, Alireza Allahyari, Published in ***JCAP11(2018)042*****,** [arXiv:1808.05210]

What can we learn from GRBs? Marco Muccino , Remo Ruffini, Yerlan Aimuratov, Laura M. Becerra, Carlo L. Bianco, Mile Karlica, Milos Kovacevic, Julio D.Melon Fuksman, Rahim Moradi , Ana V. Penacchioni , Giovanni B. Pisani, Daria Primorac , Jorge A. Rueda, Soroush Shakeri, Gregory V. Vereshchagin, She-Sheng Xue, Yu Wang **EPJ Web Conf. 168 (2018) 01015**

Revisiting the Statistics of X-ray Flares in Gamma-ray Bursts, Y. Wang, Y. Aimuratov , R. Moradi , M. Peresano, R. Ruffini, S. Shakeri, **THESEUS Workshop 2017,05-06 Oct 2017.** Naples, Italy [arXiv: 1802.01693]

In preparation 2019

Schwinger Effect in Anisotropic Inflation, Soroush Shakeri, Mohammad Ali Gorji and Hassan Firouzjahi In Preparation 2019
Light by Light Scattering as a Probe for Axion Dark Matter, Soroush Shakeri and She-Sheng Xue, is going to submit for Physical Review, 2019
Cavity Search for Axion Dark Matter, Soroush Shakeri, Moslem Zarei and Mehdi Abdi, In Preparation 2019

Vallejo Peña Sergio Andrés

Position: Visiting PhD. Student from the University of Antioquia
Period covered: 9th of July 2018 – 7th of September 2018

I Scientific Work

I have done scientific research about:

- Cosmological perturbations theory and its applications to the early Universe cosmology.
- The effects of local inhomogeneities on local cosmological observations. Modeling the local structure with the Lemaître-Tolman-Bondi exact solution of Einstein's field equations of General Relativity.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

- XV Marcel Grossmann Meeting
  1st – 7th of July 2018, Rome, Italy.
- II Workshop on Current Challenges in Cosmology
  29th of October – 2nd of November 2018, Bogotá, Colombia.

II b Work With Students

- Pulgarín M. Juan F. "Inflationary models" (in progress)
  University of Antioquia, Colombia.

II c Other Teaching Duties

- **First term of 2018:**
  Newtonian Mechanics (Mecánica), undergraduate course of 96 hours.
  Faculty of Engineering, University of Antioquia, Colombia.
- **Second term of 2018:**
  Relativity and Gravitation, undergraduate course of 96 hours.
  Institute of Physics, University of Antioquia, Colombia.

III. Service activities

III a. Within ICRANet

Seminars:

- The MESS of cosmological perturbations.
- The effects of anisotropy and non-adiabaticity on the evolution of the curvature perturbation.

2018 List of Publication

- Romano, A. E. and Vallejo Peña, S. A. ***The MESS of cosmological perturbations,*** **Phys. Lett. B 784 (2018) 367-372,** e-Print: arXiv:1806.01941

International Relativistic Astrophysics Ph. D.

Bedić Suzana

Position: IRAP PhD Student, ICRANet, University of Rome la Sapienza

Period covered: November 2016 onwards

I Scientific Work

- Hopf-algebra approach to quantum gravity

- geometric operators in noncommutative spacetimes, spinning spacetime

- relative locality

- Loop Quantum Cosmology, phase space probability measure

- deformed special relativity, quantum relativity

- PhD supervisor: Giovanni Amelino-Camelia, Università degli Studi di Napoli Federico II

II Conferences and educational activities

The Sixth Physics and Philosophy Meeting in Conjunction with the summer school, 4-7 July, 2017, Split, Croatia

Bayrischzell Workshop on Noncommutativity and Physics:
Hopf algebras in Noncommutative Geometry, April 20-23 2018, Bayrischzell, Germany

Conference on Symmetries, Geometry and Quantum Gravity
18-22 June 2018, Primošten, Croatia

15th Marcel Grossmann Meeting, July 1-7, 2018, Rome, Italy;
given talk "Loop Quantum Cosmology and Probability of Inflation"

Campion Stefano

Position: PhD. student
Period covered: January 2017-January 2020

I Scientific Work

Neutrino production from proton-proton interaction in different phases of a GRB event

II Conferences and educational activities
II a Conferences and Other External Scientific Work

1)Workshop "ISU2015 Quest for visible and invisible strange stuff in the Universe" to INFN-LNF, Frascati (Italy), 27/11/2015;

Title:"A model for spheroidal galaxies with prevalence of radial component in the velocity distribution of stars"

2) Fifth Bego Rencontre, 15-19 May 2017 (without contribution);

3) MG15-Rome, 1-7 July 2018

- *Title:"DM haloes in spheroidal galaxies with prevalence of radial component in the velocity profile", 5/7/18;*
- *Title:"Neutrinos production from GRBs", 6/7/18;*

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc...]*

2018 List of Publication

Carinci, Massimo Luca Emiliano

Position: IRAP PhD
Period covered: 2018

I Scientific Work

Dark matter and galaxy structure – Supermassive Black holes

My research activity is on Bose-Einstein condensate dark matter with numerical codes (RAR model) based on the so-called TOV approximation in the framework of general relativity, starting from the Gross-Pitaevskii equation, and obtaining, in particular, the density profiles. Furthermore, I'm studying the accretion of SMBHs in the center of galaxies, using the Eddington limit.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

- *15th Marcel Grossmann Meeting (July 1 – 7, 2018)*
- *Colloquium Guido Castelnuovo: Dynamics, numerical analysis and some geometry (December 2018)*

II b Work With Students

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

- *Talk at 15th Marcel Grossmann Meeting, Rome, Italy, July 1 – 7, 2018, with the title:*

" Quantitative analysis of the Inflationary model: the reheating process"

III b. Outside ICRANet

IV. Other

2018 List of Publication

Yen Chen Chen

Position: IRAP Ph.D. student
Period covered: 2016-2019

I. Scientific Work

I am interested in AGNs. A part of my work is to investigate correlation between host galaxies and AGNs. I also use machine learning as a tool for classification between different types of the AGNs. Besides, I do data analysis of high energy bands which include X-ray and gamma ray for GRBs.

II. Conferences and educational activities

a. Conferences and Other External Scientific Work

- *15TH AGILE Workshop, May 23-24, 2017, Rome-ASI headquarters, Italy*
- *The Third Zeldovich meeting, April 23-27, 2018, Minsk, Belarus*
  - *oral presentation: Morphology of Seyfert galaxies*
- *Fifteenth Marcel Grossmann Meeting, July 1-7, 2018, Rome, Italy*
  - *oral presentation: Photon and electron spectrum evolution of GRB 130427A and 160625B*

III. Service activities

b. Outside ICRANet

- *Work with Paolo Giommi who is a senior scientist in ASI on Blazars*

2018 List of Publication

- R. Ruffini, Y. Aimuratov, C. L. Bianco, **Y. C. Chen**, D. M. Fuksman, M. Karlica, R. Moradi, D. Primorac, J. A. Rueda, N. Sahakyan, and Y. Wang. GRB 180720B: Testing the universality of the newly born neutron st=. *GRB Coordinates Network*, 23019:1, January 2018.

- R. Ruffini, Y. Aimuratov, C. L. Bianco, **Y. C. Chen**, D. M. Fuksman, M. Karlica, R. Moradi, D. Primorac, J. A. Rueda, N. Sahakyan, and Y. Wang. GRB 180728A: A long GRB of the X-ray flash (XRF) subclass, expecti=. *GRB Coordinates Network*, 23066:1, January 2018.

- R. Ruffini, R. Moradi, J. A. Rueda, L. Becerra, C. L. Bianco, C. Cherubini, S. Filippi, **Y. C. Chen**, M. Karlica, N. Sahakyan, Y. Wang, and S. S. Xue. On the GeV emission of the type I BdHN GRB 130427A. *arXiv e-prints*, page arXiv:1812.00354, December 2018.

- R. Ruffini, R. Moradi, J. A. Rueda, Y. Wang, Y. Aimuratov, L. Becerra, C. L. Bianco, **Y. C. Chen**, C. Cherubini, S. Filippi, M. Karlica, G. J. Mathews, M. Muc- cino, G. B. Pisani, D. Primorac, and S. S. Xue. On the role of the Kerr-Newman black hole in the GeV emission of long gamma-ray bursts. *arXiv e-prints*, page arXiv:1803.05476, March 2018.

- R. Ruffini, M. Muccino, Y. Aimuratov, M. Amiri, C. L. Bianco, **Y. C. Chen**, B. Eslam Panah, G. J. Mathews, R. Moradi, G. B. Pisani, D. Primorac, J. A. Rueda, and Y. Wang. On the Short GRB GeV emission from a Kerr Black hole. *arXiv e-prints*, page arXiv:1802.07552, February 2018.

- R. Ruffini, J. A. Rueda, L. Becerra, C. L. Bianco, **Y. C. Chen**, C. Cherubini, S. Fil- ippi, M. Karlica, J. D. Melon Fuksman, R. Moradi, D. Primorac, N. Sahakyan, G. V. Vereshchagin, Y. Wang, and S. S. Xue. The inner engine of GeV-radiation- emitting gamma-ray bursts. *arXiv e-prints*, page arXiv:1811.01839, November 2018.

- R. Ruffini, Y. Wang, Y. Aimuratov, U. B. de Almeida, L. Becerra, C. L. Bianco, **Y. C. Chen**, M. Karlica, M. Kovacevic, L. Li, J. D. M. Fuksman, R. Moradi, M. Muccino, A. V. Penacchioni, G. B. Pisani, D. Primorac, J. A. Rueda, S. Shakeri, G. V. Vereshchagin, and S. S. Xue. VizieR Online Data Catalog: Early X-ray flares in GRBs (Ruffini+, 2018). *VizieR Online Data Catalog*, page J/ApJ/852/53, September 2018.

Melon Fuksman, Julio David

Position: PhD student
Period covered: 2015-2018

I Scientific Work

Numerical hydrodynamics, plasma physics applied to the study of gamma-ray bursts. Radiation hydrodynamics. Formerly Quantum Field Theory, applied to the study of the Casimir Effect.

II Conferences and educational activities

II a. Conferences and Other External Scientific Work

2017 – Speaker at *13th International Conference on Gravitation, Astrophysics, and Cosmology - 15th Italian-Korean Symposium on Relativistic Astrophysics*, Ewha Womans University, Seoul, Korea. Title of the talk: “Simulation of an electron-positron plasma in the context of the IGC paradigm”.

2017 – Speaker at *2017 Annual meeting of the Division of Gravitation and Relativistic Astrophysics of the Chinese Physical Society / Fifth Galileo-Xu Guangqai Meeting*, Chengdu, China. Title of the talk: “Simulation of an electron-positron plasma in the context of the IGC paradigm”.

2017 – Attended *From laboratories to astrophysics: the expanding universe of plasma physics* (school on plasma physics), École de Physique des Houches, Université Grenoble Alpes, Les Houches, France.

2016 - Speaker at "*Supernovae, Hypernovae and Binary Driven hypernovae*", *an Adriatic Meeting*, International Center for Relativistic Astrophysics, ICRANet headquarters, Pescara, Italy. Title of the talk: “Numerical methods for relativistic plasma physics.”

2016 - Attended *Forth Bego Rencontres (PhD school)*, International Center for Relativistic Astrophysics, Villa Ratti, Nice, France.

2015 - Attended *100º National Physics Reunion*, Asociación Física Argentina, Merlo, Argentina. Poster presented: “Effective Theories for the Casimir Effect.”

2015 - Attended *Workshop on Astrophysics and Relativity: Astro-GR 2015*, ICTP South American Institute for Fundamental Research, Sao Paulo, Brazil.

2015 - Attended *School on Gravitational Waves: from data to theory and back*, ICTP South American Institute for Fundamental Research, Sao Paulo, Brazil.

2014 - Attended *99º National Physics Reunion*, Asociación Física Argentina, Tandil, Argentina. Poster presented: “Characterization of a scintillation detector system and its implementation in the study of the flux of secondary cosmic rays.”

2013 - Attended *98º National Physics Reunion*, Asociación Física Argentina, Bariloche, Argentina.

III. Service activities

III b. Outside ICRANet

2015 - Teaching assistant, Instituto Balseiro, Argentina. Subject: Quantum Mechanics I.

2011-2012 - Undergraduate teaching assistant, Universidad Nacional de Mar del Plata, Argentina. Subjects: Physics I, Mathematical Analysis I, Linear Algebra II.

2018 List of Publications

Regular articles

- R. Moradi et al., “Relativistic Behavior and Equitemporal Surfaces in Ultra-Relativistic Prompt Emission Phase of Gamma-Ray Bursts”, Astronomy Reports, **62**, Issue 12, pp 905-910 (2018).
- D. Primorac et al., “Structure of the Prompt Emission of GRB 151027A Within the Fireshell Model”, Astronomy Reports, **62**, Issue 12, pp 933-939 (2018).
- R. Ruffini et al., “Early X-Ray Flares in GRBs”, The Astrophysical Journal, **852**, 53 (2018).
- J. D. Melon Fuksman, C. D. Fosco, “Casimir Interaction between two smoothly deformed cylindrical surfaces”, Phys. Rev. D **96**, 076015 (2017).

- R. Ruffini et al., “The cosmic matrix in the 50th anniversary of relativistic astrophysics”, International Journal of Modern Physics D, Volume **26**, Issue 10 (2017).
- J. A. Rueda et al., “The binary systems associated with short and long gamma-ray bursts and their detectability”, International Journal of Modern Physics D, Volume **26**, Issue 09 (2017).

Proceedings

- J. D. Melon Fuksman et al., “Evolution of an electron-positron plasma produced by induced gravitational collapse in binary-driven hypernovae”, Joint International Conference of ICGAC-XIII and IK-15 on Gravitation, Astrophysics and Cosmology, EPJ Web of Conferences **168**, 04009 (2018).
- M. Muccino et al., “What can we learn from GRBs?”, Joint International Conference of ICGAC-XIII and IK-15 on Gravitation, Astrophysics and Cosmology, EPJ Web of Conferences **168**, 01015 (2018).
- D. Primorac et al., “GRB 110731A within the IGC paradigm”, Joint International Conference of ICGAC-XIII and IK-15 on Gravitation, Astrophysics and Cosmology, EPJ Web of Conferences **168**, 04008 (2018).
- J. Rueda et al., “The binary systems associated with short and long gamma-ray bursts and their detectability”, Proceedings of the MG14 Meeting on General Relativity, ISBN: 978-981-3226-59-3 (2017).
- R. Ruffini et al., “The cosmic matrix in the 50th anniversary of relativistic astrophysics”, Proceedings of the MG14 Meeting on General Relativity, ISBN: 978-981-3226-59-3 (2017).

Khachatryan Harutyun

Position: Senior Scientific Researcher
Period covered: 2008-2018

I Scientific Work

II Conferences and educational activities

II a Conferences and Other External Scientific Work

June5-17 2016	Summer School in Cosmology, ICTP, Italy
December22-25 2014	High Energy Astrophysics Today and Tomorrow, Space Research Institute, Moscow, Russian Federation
August 4-15 2014	Summer School in Cosmology, ICTP, Italy
December23-26 2013	High Energy Astrophysics Today and Tomorrow, Space Research Institute, Moscow, Russian Federation
June 11 to July 6 2012	Laboratory ofAstrophysics LASTRO, Sauverny, Switzerland
August15-26 2011	Summer School in Modern Observational and Theoretical Cosmology, Nizhniy Arkhyz, Karachay-Cherkessia, Russian Federation
September 6 to November 6 2010	Laboratory ofAstrophysics LASTRO, Sauverny, Switzerland
July 17-31 2010	Summer School in Cosmology, ICTP, Italy
September 20-30 2009	International conference, summer school NOVICOSMO, Rabac, Croatia

July20-30 the 4-th Italian-Sino Workshop on Relativistic Astrophysics,

2007 International Center for Relativistic Astrophysics, Pescara, Italy

II b Work With Students

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities*[activities carried out in collaboration with ICRANet(e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

III b. Outside ICRANet

IV. Other

2018 List of Publication

Lecian Orchidea Maria

Position: Postdoctoral Researcher, Professor, International Visiting Researcher.

Period covered: 2018

Sapienza University of Rome,
Faculty of Civil and Industrial Engineering, DICEA- Department of Civil, Constructional and Environmental Engineering, Via Eudossiana, 18- 00184 Rome, Italy.
Professor: Foundamentals of Physics, Academic Year 2018.

Comenius University in Bratislava,
Faculty of Mathematics, Physics and Informatics,
Department of Theoretical Physics and Physics Education- KTFDF,
Mlynská Dolina F2, 842 48, Bratislava, Slovakia.
International Visiting University Researcher: SAIA NS'P (Slovak Academic Information Agency- The National Stipendium Programme of the Slovak Republic) Fellow,
1 January-15 February 2018
2 June-15 October 2018.

I Scientific Work
General Relativity, Quantum Gravity, Applied Mathematics.
II Conferences and educational activities
II a Conferences and Other External Scientific Work

Conferences attended

July 09-13 2018: Group32- The 32nd International Colloquium on Group Theoretical Methods in Physics , Czech Technical University in Prague, Prague (Czech Republic),
Contribution: Modular structures and extended-modular-group- structures after Hecke pairs.

18- 20 April 2018: The fourth mini symposium of the Roman number theory association, University of Rome RomaTre, Rome, Italy.

16- 17 April 2018: 11th Atelier PARI/GP, University of Rome RomaTre, Rome, Italy.

Seminars

January 15-19 2018: SBAI Geometry and Algebra Seminar Week, Sapienza University of Rome, Faculty of Industrial and Civil Egineering, SBAI- Department of Basic Sciences and Applications for Engineering,
Contribution: OML, Folding, tiling and tori: a Hamiltonian analysis.

II b Work With Students

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

III b. Outside ICRANet

Conference Organization

TPC Member
2018 International Conference on Computer, Communications and Mechatronics Engineering (CCME2018),
December 22-23 2018, Shanghai, China.

International Scientic Committees
2018 International Conference on Electrical, Mechanical and Automation Engineering (EMAE2018),
December 22-23 2018, Shanghai, China.

TPC Member
2018 International Conference on Power, Energy and Materials Engineering (PEME2018),
December 22-23, 2018, Shanghai, China.

Commitees member
2018 International Conference on Mathematics, Modeling, Simulation and Statistics Application (MMSSA2018),
December 22-23, 2018, Shanghai, China.

TPC member/reviewer
2018 International Conference on Energy, Power and Environmental System Engineering (ICEPESE2018),
November 25-26, 2018, Xiamen, China.

TPC member
2018 3rd International Conference on Applied Mechanics, Electronics and Mechatronics Engineering (AMEME2018),
November 25-26, 2018, Xiamen, China.

TPC member
Wireless Communication, Network, Information Technology 2018 (WCNIT2018)
25-26th Nov, 2018, Xiamen, China.

Editor General Chair of Technical Program Committe
Education Reform, Management and Applied Social Sciences (ERMASS2018)
October 28-29, 2018, Bejing, China.

TPC Member
2018 International Workshop on Wireless Communication, Network and Multimedia Engineering (IWWCNME2018),
October 28-29, 2018, Beijing, China.

Technical Program Committee member
2018 4th International Conference on Applied Mechanics and Mechanical Automation (AMMA2018),
October 28-29, 2018, Beijing, China.

TPC Member
2018 International Conference on Information, Electronic and Communication Engineering (IECE2018),
October 28-29, 2018, Beijing, China.

Organizing Panel
3rd International Conference on Quantum Optics and Quantum Computing: Towards Full Stack of Computing and Optical Science in Quantum Era (OCM)
September 10-11, 2018 London, UK.

Organizing committee member
5th World Congress on Catalysis and Chemical Engineering (Catalysis 2018)
August 27-28, 2018 Tokyo, Japan.

Technical Program Committee/Reviewer
3rd International Conference on Control, Automation and Articial Intelligence (3rd-CAAI 2018),
August 26-27, 2018, Beijing, China.

Technical Program Committee Member
2018 International Conference on Applied Mechanics, Mechatronics and Materials (AMMM2018)
August 26-27, 2018, Beijing, China.

Organizing Committee
5th Conference on New Advances in Condensed Matter Physics (NACMP 2018)
August 21-23, 2018, Kunming, China.

Technical Program Committee,
International Conference on Computer, Electronic Information and Communications 2018 (CEIC2018),
May 27-28, 2018, Sanya, China.

TPC member
2018 International Conference on Energy, Environment and Power Engineering (EEPE2018),
May 27-28, 2018, Sanya, China.

Scientic Committees, Reviewer Committee
8th International Advances in Applied Physics and Materials Science Congress and Exhibition (APMAS2018),
April 24-30 2018, Oludeniz, Fethiye/Mugla, Turkey.

Technical Program Committee, member
International Conference on Computer Modeling, Simulation and Algorithm (CMSA2018),
April 22-23, 2018, Beijing, China.

Technical Program Committee
International Conference on Education Reform and Management Science (ERMS2018),
April 22-23, 2018 in Beijing, China.

Technical Program Committee, member
International Conference on Electrical, Control and Mechanical Engineering (ECME2018),
April 22-23, 2018, Beijing, China.

International Scientic Committees
International Conference on Communication, Network and Articial Intelligence (CNAI2018),
April 22-23 2018, Bejing, China.

Technical Program Committee, Chair
2nd International Conference on Electrical Engineering and Automation 2018 (ICEEA2018),
March 25-26, 2018, Chengdu, China.

Technical Program Committee, Member
2nd International Conference on Articial Intelligence: Technologies and Applications (ICAITA2018),
March 25-26, 2018, Chengdu, China.

Conference Technical Committee
Asia-Pacic Conference on Applied Mathematics and Statistics (AMS2018)
March 23-26, 2018, Hanoi, Vietnam.

International Scientic Committees
International Conference on Computer Science, Electronics and Communication Engineering (CSECE2018),
February 7-8, 2018, Wuhan, China.

International Scientic Committee
2nd International Conference on Education, Management and Applied Social Science (EMASS2018),
February 7-8, 2018, Wuhan, China.

Technical Program Committee
International Conference on Mechanical, Automation and Applied Mechanics (MAAM2018)
February 7-8, 2018,Wuhan, China.

International Scientic Committees-Technical Program Committee
International Conference on Modeling, Simulation and Analysis (ICMSA2018)
February 7-8, 2018, Wuhan, China.

International Scientic Committees
2018 3rd International Conference on Education and Management Science (ICEMS2018), January 21-22, 2018, Shenzhen, China.

IV Other

Participation in research activities

e-CA COST Action CANTATA
Cosmology and Astrophysics Network for Theoretical Advances and Training e-Actions (CA15117)

The String Theory Universe COST Action
-European Cooperation in Science and Technology.

Editorial Board Member
SCIREA Journal of Mechanical Engineering

Referee for
Galaxies
Journal of Advances in Mathematics and Computer Science
Symmetry
Journal of Applied Physical Science International
Information
Universe
Entropy
Asian Journal of Physical and Chemical Sciences

2018 List of Publication

Vladimír Balek, OML, Remarks on the Bojowald-Paily paper Deformed general relativity, [arXiv:1810.05469].

Vladimír Balek, OML, Constraints on modied dispersion relations, [arXiv:1806.04257].

OML, Gedanken tests for correlated Michelson interferometers, TPC Chair invited contribution proceeding, 2018 International Conference on Advanced Electrical Engineering and Automation (AEEA2018), Atlantis Press, Series: Advances in Intelligent Systems Research. [arxiv:1806.05498].

Proceedings

OML, Modular structures and extended-modular-group- structures after Hecke pairs, IOP Conference Series, Journal of Physics: Conference Series (JPCS), Proceedings of Group32- The 32nd International Colloquium on Group Theoretical Methods in Physics Czech Technical University, from Monday 9th July 9-13 2018, Prague (Czech Republic), in press [arXiv:1810.00775].

Poster

OML, Measuring gravity in the vicinity of the Earth: spectral analysis and related modular structures after further experimental devices, 4th International Conference and Exhibition on Satellite and Space Missions- Session: Shaping the Future with Latest Advancements in Satellite and Space Missions, June 18-20, 2018, Rome (Italy); https:==satellite.conferenceseries.com=eposter-presentation.php

Book chapters

Satellite Conference Book-4th International Conference and Exhibition on Satellite and Space Missions

Contribution: OML, Measuring gravity in the vicinity of the Earth: spectral analysis and related modular structures after further experimental devices, in press.

Surname Name: **Luongo, Orlando**

Position(s):
Researcher at National Laboratories of the National Institute for Nuclear Physics in Frascati (RM), Italy.
&
Adjunct Professor of Quantum Field Theory at the University of Camerino (MC), Italy.

I Scientific Work

Interested in dark energy, issues of the standard cosmological model, extended theories of gravity, local and cosmological tests of general relativity, cosmography of the observable universe, effective field theories as unified models of dark energy-dark matter and space optics.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

Present in more than 30 scientific conferences on dark energy, cosmology and gravitational physics.
Chairman for the fifteenth Marcel Grossmann Meeting - MG14, University of Rome "La Sapienza"

II b Work With Students

Supervisor of more than 10 students in recognized universities in Italy and abroad

II c Diploma thesis supervision

Supervisor of more than 10 students among bachelors and masters.

II d. Work With Postdocs

Supervisor of about 3 post-docs in recognized universities in Italy and abroad

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

Part of the International PHD program IRAP, VII cycle. Main topics: dark energy and covariant formulation of thermodynamics

III b. Outside ICRANet

1) Adjunct professor for the course of "Quantum Field Theory" at the University of Camerino, Camerino, Italy.

2) Teaching experience for the courses: "Mathematical Methods for Physics", "General Physics", "Cosmology", "Theoretical Physics", "Physics", "Calculus" in several universities, among all: the University of Benevento, Unisannio, Italy, University of Naples "Federico II", University of Camerino, University of Rome "La Sapienza", UNAM University, etc.

IV. Other

1. National Scientific Qualification as Associate Professor in FIS/02 - Theoretical Physics.

2. Italian qualification TFA, Salerno, Italy.

3. Awarded by "Società Italiana di Fisica" (SIF) with Giovanni Polvani Prize for scientific industriousness, Rome, Italy.

4. Awarded for *Progetto di Formazione Specialistica: Una Nuova Frontiera per la Ricerca: Gli Osservatori Sottomarini*, LNS-INFN, Catania, Italy.

5. "Highlights of 2014" of IJMPD gained for the work: *A unified dark energy model from a vanishing speed of sound with emergent cosmological constant*, in collaboration with Dr. Hernando Quevedo,

6. *De Simone Prize 2016* gained for relevant results in the field of Cosmology, Avellino, Italy.

7. Interview for the Journal Contattolab, awarded for merits in Astrophysics, (2015).

8. Interview for the Journal Tuttolocal, awarded for merits in Astrophysics, (2015).

9. Editor for the journal *International Journal of Geometrical Methods in Modern Physics.*

10. Managing Editor for Publishing House: "*Licosia Edizioni*", Rome, Italy.

11. Lead Guest Editor for the special issue: *Model-Independent Techniques of Dark Energy Scenarios in Homogeneous and Inhomogeneous Cosmologies* on Advances in High Energy Physics, Hindawi.

12. Lead Guest Editor for the special issue: *Beyond the Standard Cosmological Model in the Multi-messanger Era* on Symmetry, MDPI.

13. Lead Guest Editor for the special issue: *Theories of Gravity: Alternatives to the Cosmological and Particle Standard Models* on Universe, MDPI.

14. Total number of works: > **80**

2018 List of Publication

1) Salvatore Capozziello, Rocco D'Agostino, **Orlando Luongo**, *Rational approximations of f(R) cosmography through Pad´e polynomials*, Jour. Cosmo. Astrop. Phys., **05**, 1805, 008, pp. 23, (2018).

2) Salvatore Capozziello, Rocco D'Agostino, **Orlando Luongo**, *Cosmographic analysis with Chebyshev polynomials*, Month. Not. of the Ro. Astron. Soc., **476**, 3, 3924, pp. 20, (2018).

3) Salvatore Capozziello, Rocco D'Agostino, **Orlando Luongo**, *Cosmic acceleration from a single fluid description*, Phys. Dark Univ., **20**, 1, pp. 12, (2018).

4) Salvatore Capozziello, **Orlando Luongo**, Richard Pincak, Arvin Ravanpak, *Cosmic acceleration in non-flat f(T) cosmology*, Gen. Rel. Grav., **50**, 5, 53, pp. 21, (2018).

5) Habib Abedi, Salvatore Capozziello, Rocco D'Agostino, **Orlando Luongo**, *Effective gravitational coupling in modified teleparallel theories*, Phys. Rev. D, **97**, 8, 084008, pp. 16, (2018).

6) Rocco D'Agostino, **Orlando Luongo**, *Growth of matter perturbations in non-minimal teleparallel dark energy*, Phys. Rev. D, **98**, 124013, pp. 14, (2018).

7) Salvatore Capozziello, Rocco D'Agostino, **Orlando Luongo**, *Kinematic model-independent reconstruction of Palatini f(R) cosmology*, Gen. Rel. Grav., **51**, 1, 2, (2018).

8) **Orlando Luongo**, Marco Muccino, *Speeding up the universe using dust with pressure*, Phys. Rev. D, **98**, 103520 (2018).

9) Salvatore Capozziello, Konstantinos F. Dialektopoulos, **Orlando Luongo**, *Maximum turnaround radius in f(R) gravity*, DOI: *doi:org*=10*:*1142=*S*0218271819500585 Accepted in Int. Journ. Phys. D, pp. 8, (2018).

10) Salvatore Capozziello, Rocco D'Agostino, Roberto Giamb`o, **Orlando Luongo**, *Effective field description of the Anton-Schmidt cosmic fluid*, ArXiv[gr-qc]:1810.05844, To appear on Phys. Rev. D, pp. 11, (2018).

11) **Orlando Luongo**, Marco Muccino, Hernando Quevedo *Cosmography of Horava-Lifshitz gravity*, ArXiv[gr-qc]:1811.05227,
Currently under review

12) Lorenzo Amati, Rocco D'agostino, **Orlando Luongo**, Marco Muccino, Maria Tantalo, *Addressing the circularity problem in the E_p - E_{iso} relation of Gamma-Ray Bursts*, ArXiv[astro-ph]: 1811.08934, Currently under review

13) Kuantay Boshkayev, Rocco D'Agostino, **Orlando Luongo**, *Extended logotropic fluids as unified dark energy models*, ArXiv[gr-qc]: 1901.01031, Currently under review

Vieira Lobato Ronaldo

Position: IRAP Ph.D. Student
Period covered: 2016-2018

I Scientific Work

Relativistic astrophysics:

Electromagnetic emission mechanisms of white dwarfs and neutron stars, under supervision of Prof. Manuel Malheiro, Prof. Jorge A. Rueda, Dr. Jaziel Coelho and Prof. Remo Ruffini.

Structure and evolution of white dwarfs, in collaboration with Edson Otoniel and Manuel Malheiro.

Gravitation:

Higher-dimensional and alternatives theories of gravity, in collaboration with Prof. Pedro Moraes and Geanderson Carvalho

II Conferences and educational activities

Fifteenth Marcel Grosmann Meeting

XIV International Workshop on Hadron Physics

Gravitational Waves in the strong field limit: 5th Bego Scientific Rencontre

7th International Workshop on Astronomy and Relativistic Astrophysics

14th Italian-Korean Symposium on Relativistic Astrophysics

Minicourse on Numerical Relativity

School on Effective Field Theory across Length Scales

Fourthteenth Marcel Grossmann Meeting

School on gravitational waves

2018 List of Publication

Lobato, R. V., Carvalho, G. A., Martins, A. G., Moraes, P. H. R. S. Energy nonconservation as a link between $f(R,T)$ gravity and noncommutative quantum theory. The European Physical Journal Plus, 2018.

JA Rueda, R Ruffini, Y Wang, Y Aimuratov, U Barres de Almeida, CL Bianco, YC Chen, RV Lobato, C Maia, D Primorac, R Moradi, JF Rodriguez. GRB 170817A-GW170817-AT 2017gfo and the observations of NS-NS, NS-WD and WD-WD mergers. Journal of Cosmology and Astroparticle Physics. 2018

PHRS Moraes, JDV Arbañil, GA Carvalho, RV Lobato, E Otoniel, RM Marinho Jr, M Malheiro. Compact Astrophysical Objects in $f(R,T)$ gravity. Conference: C18-03-18. e-Print: arXiv:1806.04123

Yunis, Rafael Ignacio

Position: IRAP PhD Student
Period covered: 2018-2018

I Scientific Work

PhD on Relativistic Astrophysics (In course)

Currently enrolled at IRAP joint PhD program between Sapienza University in Rome and ICRAnet, since April 2018. Currently working under Dr. Carlos Argüelles (UNLP) on selected topics on Dark Matter self-interactions and its effect on decoupling at the early universe and at structure formation. Current interests are on Cosmology, Structure Formation and out-of-equilibrium Thermodynamics.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

Attendance at MGXV (2018)

Attended the Fifteenth Marcel Grossmann Meeting (MGXV) on recent developments in theoretical and experimental general relativity, astrophysics and relativistic field theories at Rome, Italy.

II b Work With Students

II c Diploma thesis supervision

II d Other Teaching Duties

II e. Work With Postdocs

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

III b. Outside ICRANet

IV. Other

2018 List of Publication

New constraints on sterile neutrino dark matter from the Galactic Center (Submitted for Review)

Authors: R. Yunis, C. R. Argüelles, Nick E. Mavromatos, A. Moliné, A. Krut, J. A. Rueda, R. Ruffini

Abstract: We calculate the most stringent constraints up to date on the parameter space for sterile neutrino warm dark matter models possessing a radiative decay channel into X-rays. These constraints arise from the X-ray flux observations from the Galactic center (central parsec), taken

by the XMM and NuSTAR missions. We compare the results obtained from using different dark matter density profiles for the Milky Way, such as NFW, Burkert or Einasto, to that produced by the Ruffini-Argüelles-Rueda (RAR) fermionic model, which has the distinct feature of depending on the particle mass. We show that due to the novel core-halo morphology present in the RAR profile, the allowed particle mass window is narrowed down to 10 KeV, when analyzed within the νMSM sterile neutrino model. We further discuss on the possible effects in the sterile neutrino parameter-space bounds due to a self-interacting nature of the dark matter candidates.

IRAP Ph. D. Erasmus Mundus Students

Aimuratov Yerlan

Position: PhD student (EMJD IRAP V cycle)
Period covered: January 2015–January 2019

I Scientific Work

Gamma-Ray Bursts and Supernovae: Data Analysis and Theory

II Conferences and educational activities

II a Conferences and Other External Scientific Work

- Weekly ICRANet seminars by invited Professors, PostDocs and Students, March 2015-Dec. 2018
- "NS Merger Training Workshop", PhD school, 2018 November 11th-16th, Bertinoro, Italy
- Seminar at Fesenkov Astrophysical Institute, 2018 July 19th, Almaty, Kazakhstan
- "Fifteenth Marcel Grossmann Meeting", 2018 July 1st-7th, Rome, Italy
- "DIAS-2018 Summer School in HEA", 2018 June 19th-29th, Dublin, Ireland
- "SNAUPS-2018 (Third Zeldovich Meeting)", 2018 April 22nd-25th, Minsk, Belarus
- "Exploring the Energetic Universe", 2017 August 6th-13th, Astana, Kazakhstan
- "BelINP-2017 and ICRANet-Minsk Workshop", 2017 April 26th-28th, Minsk, Belarus
- "An Adriatic Workshop: SNe, Hypernovae and BDHNe", 2016 June 20th-30th, Pescara, Italy
- "Summer School on Cosmology", ICTP, 2016 June 6th-17th, Trieste, Italy
- "4th Bego Rencontres", IRAP PhD Erasmus Mundus School, 2016 May 30th-June 3rd, Nice, France
- Seminar at Fesenkov Astrophysical Institute, 2015 August 5th, Almaty, Kazakhstan
- "14th Italian-Korean Symposium on Relativistic Astrophysics", July 20th-24th, Pescara, Italy
- "Fourteenth Marcel Grossmann Meeting", 2015 July 12th-18th, Rome, Italy
- "1st ICRANet Lecture Series for PhD students" organized by L. Izzo, February-June 2015

II b Work With Students

- GBM data analysis, June 2017-December 2018 with R. Moradi, D. Primorac, Y. Wang,
- LAT-LLE data reduction and analysis, October 2016 with M. Kovacevic
- XRT data analysis, March-September 2016 R. Moradi, M. Peresano, S. Shakeri, Y. Wang

II c Diploma thesis supervision

None

II d Other Teaching Duties

None

II e. Work With Postdocs

- data reduction and analysis with ICRANet PostDoc Y. Wang, Sep.-Dec. 2018
- fireshell model and analysis with RMFIT, XSPEC with M. Muccino, Feb. 2015-Nov. 2017
- data reduction and analysis with HEASOFT with L. Izzo, Nov.-Dec. 2015

III. Service activities *[activities carried out in collaboration with ICRANet (e.g. teaching activities, conferences etc...) and outside ICRANet (teaching activities in your university etc…]*

III a. Within ICRANet

- participation and oral presentation "Short Gamma-Ray Bursts", parallel session BN5
  "Fifteenth Marcel Grossmann Meeting", 2018 July 1st-7th, Rome, Italy
- participation and oral presentation "Gigaelectronvolt emission in Gamma-Ray Bursts"
  "SNAUPS-2018 (Third Zeldovich Meeting)", 2018 April 22nd-25th, Minsk, Belarus
- participation and oral presentation "The Fireshell Model Nomenclature: Subclass of Short GRBs"
  "Exploring the Energetic Universe", 2017 August 6th-13th, Astana, Kazakhstan
- participation and oral presentation "GRB 140402A and Subclass of S-GRBs: Phenomenology"
  "BelINP-2017 and ICRANet-Minsk Workshop", 2017 April 26th-28th, Minsk, Belarus
- participation and oral presentation: "X-ray Flares and Thermal Component"
  "An Adriatic Workshop: SNe, Hypernovae and BDHNe", 2016 June 20th-30th, Pescara, Italy
- participation in "Forth Bego Rencontres" meeting
  IRAP PhD Erasmus Mundus School, 2016 May 30th-June 3rd, Nice, France
- participation and oral presentation: "GRB 081024B Analysis and Redshift Estimation"
  "14th Italian-Korean Symposium on Relativistic Astrophysics", 2015 July 23rd, Pescara, Italy
- participation, proceeding and oral presentation: "Analysis of the GRB 081024B", session GB5-A
  "Fourteenth Marcel Grossmann Meeting", 2015 July 17th, Rome, Italy

III b. Outside ICRANet

- participation in "NS Merger Training Workshop" for PhD students and young researchers
  Centro Residenziale Universitario di Bertinoro, 2018 November 11th-16th, Bertinoro, Italy
- oral presentation: "Gigaelectronvolt emission in Gamma-Ray Bursts"
  seminar at Fesenkov Astrophysical Institute, 2018 July 19th, Almaty, Kazakhstan
- participation in "DIAS-2018 Summer School in HEA" for PhD students and young researchers
  Dublin Institute of Advanced Studies & Dublin City University, 2018 June 19th-29th, Dublin, Ireland
- participation and oral presentation "The Fireshell Model Nomenclature: Subclass of Short GRBs"
  "Exploring the Energetic Universe", 2017 August 6th-13th, Astana, Kazakhstan
- participation in "Summer School on Cosmology" for PhD students and young researchers
  International Centre for Theoretical Physics, 2016 June 6th-17th, Trieste, Italy
- oral presentation: "Gamma-Ray Bursts within the Fireshell Model"
  seminar in Fesenkov Astrophysical Institute, 2015 August 5th, Almaty, Kazakhstan

IV. Other

IV a. Within ICRANet and b. Outside ICRANet

2015-2018 List of Publication

- **https://orcid.org/0000-0001-5717-6523**

Stahl Clément

Position: PostDoc in Valparaiso
Period covered: 2017-present

https://cstahl.cicogna.fr/

I Scientific Work

QED in de Sitter space and Large Scale Structures

II Conferences and educational activities

II a Conferences and Other External Scientific Work

1) 15/19 january-2018: CosmoAndes, Santiago, talk: Charged Cosmological Black hole
2) 6 april 2018, Primordial magnetogenesis, Journal club at Pontifical University of Valparaiso
3) 27 april 2018, QED and Schwinger effect in de Sitter spacetime, Joined seminar on cosmology Valparaiso-Santiago
4) 01/07 july-2018: 15th Marcel Grossmann meeting, Rome, Talks: Relativistic corrections to large scale structures formation AND Schwinger effect impacting primordial magnetogenesis.
5) 03 october 2018, Cosmology and formation of structures, Colloquium of popularization opened for undergraduate students, Valparaiso.
6) 29 october/02 november 2018: 2nd Workshop on Current Challenges in Cosmology : LSS, Dark Energy and Modified Gravity, Bogota.

II c Diploma thesis supervision

I co-supervise the thesis of Lina Castiblanco on structure formation.

IV. Other

I co-chaired the marcel Grossmann parallel session DE2: Dark Energy and Large Scale Structure.

V. 2018 List of Publication

1) E. Bavarsad, C. Stahl, S.P. Kim, S-S. Xue, Effect of a magnetic field background on Schwinger mechanism in de Sitter spacetime, Phys.Rev. D **97** (2018) no.2, 025017, http://arxiv.org/abs/1707.03975

2) C. Stahl Schwinger effect impacting primordial magnetogenesis, Nucl.Phys. B939 (2019) 95-104 https://arxiv.org/abs/1806.06692

3) D. Begue, C. Stahl, S-S. Xue, A model of interacting dark fluids tested with supernovae data, http://arxiv.org/abs/1702.03185, accepted to Nuclear Physics B

4) L. Castiblanco, R. Gannouji, J. Noreña and C. Stahl, Relativistic cosmological large scale structures at one-loop, https://arxiv.org/abs/1811.05452, submitted to JCAP.

CAPES

Administrative, Secretarial and Technical Staff

Adamo Cristina

E mail address	cristina.adamo@icranet.org
Telephone	+39 085 23054205
Fax	+39 085 4219252
Nationality	Italian
Date and place of birth	Vibo Valentia, 12 December 1972

Work experiences

Date	09 November 2009 → present
Name of employer	ICRANet - International Center for Relativistic Astrophysics Network
	Administrative employee
Main activities and responsibilities	Administrative office: accountancy, preparing reimbursement and rewards for scientific visitors, on – line payments, analysis of bank statements.

Date	04 March 2007 → 09 October 2009
Occupation or position held	Head Administrative Office
Main activities and responsibilities	Account and budget General Account. Active and passive billing cycles. Bank settlement. Treasury management and bank relations management. RI.BA. emission. Down-payment and invoice discount management. Payment and takings management. Independent management of the main civil-fiscal fulfilments with a particular attention to the periodical settling and vat statement. General account management. Assets management. Arrangement INTRA model. Arrangement of the financial year ending. Reclassification of the budget. Management of the accounting plan. Implementation of new instruments aiming at improving the efficiency of the administrative services. Administrative management of the staff: recruitment and selection interviews, drawing up of mandatory documents (matriculation and presences books), elaboration of timesheets. Management of clients and suppliers' order. Purchase and choice of suppliers to be qualified. Prices definition, deposit and shipment management.
Name and address of employer	Solaris Srl - Manoppello (PE) - Industrial Springs Production

Date	01 April 2001 - 28 January 2004
Occupation or position held	Responsible for marketing planning
Main activities and responsibilities	Evaluation of markets perspective. Coordination and reduction of commercial plans.

	Survey of the competition sale prices Coordination of marketing plans and commercial budgets
Name and address of employer	Merker SpA - Trucks production
Date	1997 - 2000
Title of qualification awarded	Trainee at a Business Consultant
Principal subjects / occupational skills covered	Ordinary and simplified account. Fiscal fulfilments. European balance. Income tax return. Consultant office Dott. Vincenzo Micozzi - Pescara

Date	1997 - 31/03/2001
Principal subjects / occupational skills covered	Responsible for Quality Insurance (ISO UNI EN 9002) Management Assistance Purchase management Administrative and fiscal fulfilments Definition of Marketing plans and monitoring of mix marketing elements
Name and address of employer	Solaris Srl - Industrial Springs production

Date	1997 - 1997
Occupation or position held	Stageur
Main activities and responsibilities	Implementation of check systems management
Name and address of employer	Software House Polymatic - Chieti Scalo

Education and training

Date	November 1991 - 16 July 1996
Title of qualification awarded	Degree in Economics – Economics of financial middleman
Name and type of organisation providing education and training	University L.U.I.S.S. - Guido Carli – Roma – Final marks: 105/110 – Thesis: "Tax incentive for the occupational development"

Dates	1986 - 1991
Title of qualification awarded	Secondary School Degree
Name and type of organisation providing education and training	Liceo Scientifico Leonardo Da Vinci - Pescara

Dates	1997 - 2000
Title of qualification awarded	Trainee at a Business Consultant
Main Sujects	Ordinary and simplified account. Fiscal fulfilments. European balance.

	Income tax return.
Name and type of organisation providing education and training	Consultant office Dott. Vincenzo Micozzi - Pescara
Date	1998 - 1998
Title of qualification awarded	Brief Master on Tax Law
Name and type of organisation providing education and training	University D'Annunzio - Pescara
Date	1998 - 1998
Title of qualification awarded	Postgraduate Course on " European Union: institutional, juridical and economic aspects"
Name and type of organisation providing education and training	European Commission and University of Lyon: corse in Paris and Lyon. Success on final exams.
Dates	1997 - 1997
Title of qualification awarded	Expert in enterprise management
Main Subjects	Purchase and logistics, financing, administration and control, marketing, production, budget, bringing out of new products
Name and type of organisation providing education and training	Regione Abruzzo - CIFAP
Dates	1997 - 1997
Title of qualification awarded	Evaluator of Quality systems
Main subjects	Expert according to the ISO regulations. Qualification for leading controls according to the UNI EN 9002 regulations.
Personal skills and competences	
Mother tongue	Italian
English	Indipendent User
French	Basic User

Social skills and competences	Communication Ability acquired during the working experiences Aptitude to learn, adaptable to new situations, different from the known ones. Ability to work under pressure. Good aptitude to work in multicultural environment thanks to the experiences spent abroad for education or personal reasons. Team spirit
Organisational skills and competences	Innate sense of organisation both in the working place and in the management of personal and familiar life. I am considered as a reference point by the production operators.
Technical skills and competences	Mastery in quality control processes in small enterprises (I was responsible for the qualily evaluation)
Computer skills and competences	Good Knowledge of Microsoft Office (Word, Excel e PowerPoint) Very good knowledge of Team System – Gamma, Mult program Basic knowledge of graphic application Good knowledge of Internet and web search engines.

Gabriele Attilio Brandolini

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Fax	+39 085 4219252
Nationality	Italian
Place and date of birth	Ortona (CH), 22 April 1986

Work experiences

Date	01 July 2013 - present
Name of employer	Soabit srl c/o ICRANet - International Center for Relativistic Astrophysics Network
Kind of Employment	System manager
Main activities and responsibilities	Network administrator – Web development

Date	2011 - 2011
Name of employer	Tipografia F.lli Brandolini snc
Kind of Employment	Graphic designer
Main activities and responsibilities	Network administrator Graphic design and layout texts

Date	2010-2010
Name of employer	Soabit srl c/o Univesità degli Studi “G. d'Annunzio” - Chieti
Kind of Employment	Help desk
Main activities and responsibilities	Web development: analysis and development of applications for managing stock of average complexity using PHP and MySQL technologies. Network administrator: support to the installation of network devices and updating of its firmware, to the segmentation of local area network (VLAN 802.1q) and support to troubleshooting activities. Network management: implementation of procedures for the historicizing of traffic flows (NetFlow / PMAcct) generated by the various firewalls on the various local networks.

Date	2009 - 2009
Name of employer	Tipografia F.lli Brandolini snc
Kind of Employment	Graphic designer
Main activities and responsibilities	Network administrator Graphic design and layout texts

Education

Date	September 2005 – 18 December 2012
Title of qualification awarded	Degree in Computer Science
Name and type of organisation providing education and training	University of L'Aquila – Final marks: 88/110 Thesis: "Analisi di prestazioni dell'instradamento in reti di sensori wireless"

Dates	September 2009 – July 2005
Title of qualification awarded	Secondary School Degree
Name and type of organisation providing education and training	Istituto Tecnico Industriale Statale "Luigi di Savoia" - Chieti

Personal skills and competences

Mother tongue	Italian
English	Basic User
Social skills and competences	Ability to work in a team matured in many situations where it was necessary collaboration between the figures, both in academia and in the business and sports. Good relational abilities thanks to the past work experience.
Organisational skills and competences	Sense of organization Good experience in project and team management
Computer skills and competences	Excellent knowledge of Operating Systems: Windows, Mac OS X and Linux. Excellent knowledge of Apple and Microsoft applications and Microsoft Office. Excellent knowledge, also, of various graphics and layout software. Excellent ability to use the Internet and manage applications that use them. Management of Local Area Networks LAN and WLAN and implementation of web applications. Excellent knowledge of HTML, PHP, CSS, Javascript, jQuery, MySQL. Good knowledge of C, C++, Java, VPN, Firewalling. Good knowledge of virtualization platforms, with particular reference to XEN Server (v. 7, open-source).

Other skills and competences	Considerable passion for the sport, followed and practiced.
Driving licence	Driving licence cat. A – B.

Di Berardino Federica

NAME	FEDERICA DI BERARDINO
PHONE	0039-085-23054200
FAX	0039-085-4219252
E-MAIL	federica.diberardino@icranet.org
NATIONALITY	Italian
DATE AND PLACE OF BIRTH	31-03-1980 PESCARA

WORK EXPERIENCE

November 2005-present

- Head of Secretariat at ICRANet Pescara: supporting Director, responsible for day-to-day tasks and secretarial duties, overall responsibility for the smooth running of the secretarial office; supervising the work of office juniors and provide advice and training to them; organizing business travels, itineraries and accommodation; organizing and preparing agendas for board/scientific committee meetings, providing facilities, taking minutes; updating processing and filing of documents (both on paper and computer); organizing diaries and making appointments; handling incoming/out coming calls, faxes, e-mails inquiries and post; handling requests for information and data; coordinating and scheduling secretarial tasks; translations; arranging interviews for new administrative/secretarial staff recruitment.

May-October 2005
- Travel Agent at "Beg Viaggi" Pescara;

September-June 2005
- Italian language trainer for foreign students;

April 2005
- Congress Hostess for IN FIERA S.r.l., at "ECOTUR 2005"-Montesilvano;

December 2004
- Congress Hostess for Manoppello Municipality (PE) on the occasion of the commemoration "Marcinelle 2005";

October-December 2004
- Customer service assistant for Terravision S.r.l. at *Aeroporto d'Abruzzo*, Pescara;

January-December 2004
- Trainer/Supporter to elementary and high school Italian students for English language homeworks;

May 2004
- Translations from/to English;
- Distribution of books in the local schools for Ajilon Agency,

March 2004	Pescara; ▪ Customer satisfaction interviews for "NETWORK Research Institute S.r.l." at Iper - Città Sant'Angelo; ▪ Researcher for "Informazione e servizi senza barriere"(Agency: NETWORK S.r.l.);
2001-2004	▪ Conference Hostess for IN FIERA S.r.l., at "ECOTUR –*Turismo in fiera*" 2001, 2002, 2003, 2004 (at *Palacongressi*, Montesilvano – PE);
2001-2003	▪ Hostess and sales promoter for the agency "Image Service", Città Sant'Angelo (PE);
1998-2000	▪ Birthday party organizer for kids; ▪ Educator and entertainment organizer in summer camps of E.N.I. in Cesenatico; additional training courses (*Cooperativa Sociale* D.O.C. S.c.r.l., Turin).

EDUCATION

June 2004	▪ Graduation in "Foreign Language and Literatures", 110/110 *cum laude*, at University G. D'annunzio (Pescara). Final thesis on "Problemi, tendenze e prospettive dello sviluppo socio-economico in Spagna. Casi di studio" (Supervisor: Prof. G. Massimi);
January 2004	▪ Researches in Spain for graduation thesis and improvement of Spanish language skills;
September-December 2002	▪ Four month period mobility at "Nazareth College", Rochester, N.Y. (U.S.A.) and final exams on English language and literature; Marketing; Spanish language, history and culture;
1998	▪ High School diploma at Foreign Languages High School "G. Marconi", Pescara;
October 1996	▪ English language courses at "Irondequoit High-School" in Rochester (N.Y., USA);
1992, 1994, 1995	▪ Multiple visits to England for training courses; ▪ Visits to USA (N.Y. e Massachusetts) to improve oral skills for American-English.

SOCIAL-CULTURAL EXPERIENCES	January-March 2005: Trip to Vanuatu (Melanesian archipelago, former "New Hebrides") for humanitarian-aid experience. Voluntary work in a few islands of the archipelago and elementary-level learning of local idiom, the Bislama.
PERSONAL SKILLS	Main studies and job experiences focused on foreign cultures and languages. Graduation on Spanish and English. Daily practice with both languages through conversation and readings. Good interpersonal and communications skills (both written and oral). Well presented.
MOTHER-TONGUE	ITALIAN
OTHER LANGUAGES	ENGLISH, SPANISH, FRENCH
RELATIONAL ABILITIES	Good attitude to work in multi-cultural contexts. The two main training experiences in the US high school and later in college supported the personal and professional growth, helped to acquire an open-minded attitude towards other cultures, which are essential for cooperation and mutual respect. The work as customer service assistant, hostess and sales promoter have been relevant in acquiring professional skills in the relationship with customers: importance of communication, which is the ability to listen to and to be listened.
ORGANIZING, PERSONAL AND OTHER COMPETENCES	Organizing abilities in team-work, accuracy, punctuality, positive attitude, problem-solving skills and working method based on the achievement of goals. Open and charismatic personality, highly resourceful, motivated, flexible, enthusiastic, active, dynamic, loving challenges. Ability to multitask and managing conflicting demands. Able to work to tight deadlines. Quick learner. Working at ICRANet consented to be experienced in coordinating, planning and organizing a wide range of secretarial activities, and in being a well organized good team-player with a proven ability to work proactively even whilst under pressure and in a complex and busy office environment.
TECHNICAL SKILLS	Computer competences: good knowledge of Windows. Daily use of Outlook, Thunderbird, Word, Excel, Power Point and FileMaker database. 2004: Certificate for Informatics Course on "Basic Office" (Word, Excel, Internet e E-mailing) organized by: "E-Work", Pescara in cooperation with "Ok Work", Milano.
ARTISTIC SKILLS	Photography: Diploma of Basic and advanced courses, Photo-reportage and work flow. Dance. Music. Free time: art, music, travel and photography.
DRIVING LICENCE	Driving license cat. B

di Niccolo Cinzia

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Telephone	+39 085 23054 219
Fax	+39 085 4219252
Nationality	Italian
Date and place of birth	Terlizzi, 23 May 1985

Work experiences

Date	01 August 2013 → present
Name of employer	ICRANet - International Center for Relativistic Astrophysics Network
Main activities and responsibilities	Secretariat Office

Date	12 June → 16 July 2013
Occupation or position held	ISTAO – Project Work
Main activities and responsibilities	Report And Presentation Of The Results Loccioni Group – Our Presence In The World: Germany, USA, China; Country Analysis: Turkey. Results, Report And Final Slide Presentation To Loccioni Managers
Name and address of employer	Loccioni Group, via Fiume 16, 60030 Angeli di Rosora, Ancona Phone +39.0731.8161 | Fax +39.0731.814.700

Date	From October 2012
Occupation or position held	Conference interpreting and translations.
Name and address of employer	OS-Card Srl – Bologna

Date	May 2012 → September 2012
Occupation or position held	Junior Export Manager
Main activities and responsibilities	Brazil country analysis. Brazilian Portuguese website translation. Company profile in Brazilian Portuguese language.
Name and address of employer	Marzoarreda – Novoli (LE)

Date	September 2011 → January 2013
Occupation or position held	Stageur
Main activities and responsibilities	Legal Office – Notary services Drafting of documents concerning: general/special power of attorney, will and testament of citizens living abroad, public acts, certificates of

	authentications, self-certifications and official certificates that can be replaced by self-certifications.
Name and address of employer	Italian General Consulate in Brazil – São Paulo Aveinda Paulista, 1963; CEP 01311-300 São Paulo (SP)
Date	October 2011 → January 2012
Occupation or position held	Italian teacher
Main activities and responsibilities	Italian teacher for native Brazilian students. Private lessons and classes. Conference interpreter for 30th São Paulo *Venice Architecture Biennial* 2012
Name and address of employer	Italian Institute of Culture in Brazil – São Paulo Avenida Higienópolis, 436; CEP 01238-000, São Paulo (SP)
Date	January → July 2011
Occupation or position held	Internship
Main activities	Editing, proofreading.
Name and address of employer	Edizioni dell'Urogallo – Literature from Portuguese-speaking countries

Education and training

Date	February → July 2013
Title of qualification awarded	Postgraduate master course in International Management
Name and type of organisation providing education and training	ISTAO – Istituto Adriano Olivetti di Studi per la gestione dell'economia e delle aziende The Masters Course in International Management prepares highly specialized students in the field of international business and trade. Organized in collaboration with ICE (Governamental Agency for the internationalization of Italian companies), Confindustria Marche (Italian Employers' federation) and the Government of the Marche Region, the Master represents one of the most important and valuable programs for new graduates approaching the business world focused on the themes of internationalization: macroeconomics and global markets, enterprise organization, emerging countries, strategies and decision-making skills, contracts, rules, techniques.
Date	May 2012
Title of qualification awarded	CEDILS Certificate Certified teacher for Italian as foreign language
Name and type of organisation providing education and training	Ca' Foscari – University of Venice

Date	November 2008 → 11 July 2011
Title of qualification awarded	Master degree in *Languages for international communication – Portugues EU/BR and Spanish*
Name and type of organisation providing education and training	Univerità degli Studi di Perugia Final marks: 110/110 cum laude Thesis: "Way to Europe. Portugal and the European integration process"

Date	November – December 2010
Title of qualification awarded	Brief Master on Europroject Management 2007-2013
Name and type of organisation providing education and training	Introduction to European Union: institutional, juridical and economic aspects. Training courses: full lifecycle of an EC funded project: proposal preparation and submission, evaluation, negotiation, technical and financial project management, reporting, technical reviews and post-project audits.

Date	November 2004 → 9 November 2008
Title of qualification awarded	Degree in *Linguistic and Cultural Mediation Sciences – Portugues EU/BR and Spanish*
Name and type of organisation providing education and training	Univerità degli Studi di Perugia Final marks: 110/110 cum laude Thesis: Modern poetry in Portugal.

Dates	1999 - 2004
Title of qualification awarded	Secondary School Degree
Name and type of organisation providing education and training	Liceo Linguistico Carlo Troya – Andria (BT)

Personal skills and competences

Mother tongue	Italian
Portuguese	Second language
Spanish	Very good
English	Good
French	Basic User

Social skills and competences	Good ability to adapt to multicultural environment, gained through my experience of studying and travelling abroad (Brazil and Europe); Very good aptitude in teamwork (working within collective projects in the postgraduate course and in academia); Ability to work under pressure.

Organisational skills and competences	Very good sense of organisation and time planning abilities; Self rigorousness and self discipline; Good analytical and problem-solving abilities gained during all study years and especially during internship at Italian General Consulate in Brazil (the Vice-Consul signed my letter of recommendation)
Computer skills and competences	Very good command of Microsoft Office (Word, Excel e PowerPoint); Very good knowledge of Internet and web search engines; Knowledge of graphic application.

Latorre Silvia

PERSONAL INFORMATION

Place and date of birth	Chieti, 23/09/1982
Nationality	Italian
E- mail	silvia.latorre@icranet.org
Phone	085 – 23054223
Fax	085 - 4219252

WORK EXPERIENCES

• Date	12/02/2008 – present
• Name of employer	ICRANet
• Firm or Sector	International Center for Relativistic Astrophysics Network
• Kind of Employment	Administrative employee
• Main Tasks	Managing the relationship with suppliers, controlling invoices, calculating reimbursement and rewards for our scientific visitors, preparing orders for the bank, executing and verifying on-line payments, meeting our bank referents for particular payment operations, cash holding, using ICRANet cost-accounting system.

• Date	01/12/2006 – 20/01/2008
• Name of employer	DelVerde Industrie Alimentari S.p.A.
• Firm or Sector	Pasta Factory
• Kind of Employment	Trainee
• Main Tasks	Study and analysis of annual financial statements of ten competitor pasta factories for the financial years from 2002 to 2006, as well as reclassification of balance sheets and profit and loss accounts and calculation of the main income and financial indexes. Analysis of export strategies of DelVerde and other Italian pasta factories.

EDUCATION

• Date	11/2005 – 12/2007
• Institution	Università degli Studi "G. D'Annunzio" Pescara
• Main Subjects	Marketing, commercial law, innovation management and economics, business statistics, quality technique and theory
• Achieved Qualification	Degree in Economics and Administration of the enterprises. Final thesis in analysis of balance sheet: "*La leva finanziaria e la leva operative nel settore pastario*" (supervisor Prof. Michele A. Rea)
• Mark	110/110 *cum laude*

• Date	09/2001 – 11/2005
• Institution	Università degli Studi "G. D'Annunzio" Pescara
• Main Subjects	Financial Mathematics, bank technique, business economics, accountancy, microeconomics, macroeconomics, private and public law, work law, analysis of balance sheet, business strategy and politics
• Achieved Qualification	Business Economics Degree. Final thesis in business strategy and politics: "*Gli strumenti di analisi strategica: l'analisi SWOT"* (supervisor Prof. Michele A. Rea)
• Mark	106/110

• Date	09/1996 – 07/2001
• Institution	Secondary School focusing on sciences- Liceo Ginnasio Statale "Publio Virgilio Marone" Vico del Gargano (FG)
• Main Subjects	Mathematics analysis, Italian language and literature, Latin language and literature, Chemistry, Physics
• Achieved Qualification	Scientific school-leaving certificate
• Mark	100/100

FOREIGN LANGUAGES	
MOTHER-TONGUE	ITALIAN
OTHER LANGUAGES	ENGLISH (GOOD) – FRENCH (ELEMENTARY)
RELATIONAL ABILITIES	Good relational abilities thanks to the past work experience at DelVerde and to the present experience at ICRANet. Self-reliant. Good listener.
ORGANIZING COMPETENCES	Good organizing abilities acquired handling the big amount of data at DelVerde and working at ICRANet, where they are essential for managing the large number of guests, mainly during the meetings.
TECHNICAL SKILLS	Computers competences: Windows. Softwares: Word, Excel, Power Point. Very good use of Internet and e-mail accounts. Good use of cost-accounting system HELPAZI and bank system BNL Businessway. Elementary knowledge of HTML e CSS programs for websites. Knowledge of "TOP VALUE" program for financial diagnosis and corporate planning.
ARTISTIC SKILLS	Piano classes attended for 8 years. sol-fa Diploma.
DRIVING LICENCE	Driving licence cat. B
FURTHER INFORMATION	I like travelling, cooking, cinema, listening music, playing the piano. I have a determined, dynamic and flexible personality. I like staying and working with people.

INFORMAZIONI PERSONALI

Elisabetta Natale

Via Cesare Battisti 12, 65029, Torre de' Passeri (PE)

+39 3389465580

elynatale@hotmail.com

Data di nascita 07/11/1991 | Nazionalità Italiana

ESPERIENZA PROFESSIONALE

Da 01/2018 →

ICRANet Secretariat

International Center for Relativistic Astrophysics Network (ICRANet), Pescara

Da 09/2017 a 12/2017 →

Europe and North America Desk Assistant

UNESCO, Parigi

Relazione con Stati membri e Partner istituzionali (MSP), settore Relazioni estere e Public information and communication (ERI)

Da 03/2017 a 09/2017

HR & Project Assistant Intern

INTERSOS, Roma

Da 08/2016 a 02/2017

Intern – Delegazione dell'Unione Europrea presso Agenzie delle Nazioni Unite (FAO, IFAD, WFP), Santa Sede, Ordine di Malta e Repubblica di San Marino

EEAS (European External Action Service), Roma

- Sezione rapporti Unione Europea – ONU, in particolare responsabile delle relazioni UE - FAO
- Partecipazione ai principali meeting FAO in qualità di delegata UE
- Organizzazione e coordinamento dei meeting tra i 28 stati membri, analisi e preparazione di documenti e statement per i meeting
- Assistente sezione stampa e comunicazione, cura del sito web della Delegazione
- Stesura di comunicati stampa e report per gli uffici UE a Bruxelles, in particolare per la Commissione Europea e le DG pertinenti

Da 06/2016 a 08/2016

Marketing assistant

General Communication Srl Bologna, Bologna

- Ricerca e fidelizzazione di nuovi clienti per conto di ONGs e INGOs (AMNESTY INTERNATIONAL, UNICEF, AISM Onlus)
- Project Assistant

06/2016

Exit poll e proiezioni elettorali per elezioni amministrative Bologna 2016

IPR marketing per conto di RAI radiotelevisione italiana spa, Bologna

- Raccolta dati, monitoraggio, analisi e statistiche per proiezioni elettorali
- Trasmissione dei dati a RAI radiotelevisione italiana per immediata diffusione in tempo reale

04/2016

Scrutatrice per il referendum popolare italiano del 17 aprile 2016

Comune di Torre de' Passeri (PE)

Da 09/2015 a 11/2015

Administrative assistant Intern

Centro linguistico d'ateneo (CLA) Ravenna - Alma Mater Studiorum università di Bologna

- Attività di front/ back office, traduttrice per gli studenti stranieri in arrivo
- Preparazione e correzione dei test di livello linguistici (inglese, francese, tedesco e spagnolo)
- Assistente all'insegnamento per il progetto "ALMA ENGLISH" e per le certificazioni linguistiche
- Assistente all'insegnamento della lingua italiana per studenti stranieri
- Assistente sezione comunicazione

Da 11/2013 a 04/2014

Administrative assistant Intern

Ufficio orientamento e career service Forlì, Alma Mater Studiorum università di Bologna,Campus di Forlì (FC)

- Creazione e aggiornamento dei database
- Attività di front/ back office
- Colloqui con gli studenti per l'orientamento in entrata ed in uscita
- Promozione dell'attività formativa dell' Alma Mater Studiorum
- Assistente sezione comunicazione

Da 20/03/2014

Co-founder associazione IAPSS sezione di Forlì

IAPSS (International Association for Political Science Students), Forlì (FC)

- Cofondatrice dell'associazione
- Presentazione di IAPSS a istituzioni accademiche e amministrative (Alma Mater Studiorum - UniBo, comune di Forlí,…)
- Organizzazione di conferenze a livello locale / nazionale e internazionale
- Organizzazione di conferenze, eventi, round-tables, workshops, viaggi studio e di approfondimento
- Assistente sezione stampa e comunicazione

03/ 2010

Traduttrice DE> IT del materiale informativo relativo al XXXVII Congresso nazionale su "KANT E L'AUFKLÄRUNG"

Società filosofica italiana, Sulmona (L'AQ)

Traduzione di discorsi, flyer, documenti e materiale informativo relativo al XXXVII Congresso nazionale della "KANT E L'AUFKLÄRUNG"

ISTRUZIONE E FORMAZIONE

02/ 2017

Workshop in International Journalism and Communication

The Post Internazionale and Limes, Roma (RM)

Panelists: Enrico Mentana, Curzio Maltese, Marco Damilano, Amedeo Ricucci, Emiliano Fittipardi, Stefano Mentana, Giulio Gambino, Alessio Romenzi, Francesca Mannocchi, Nancy Porsia, Eva Giovannini, Sabika Shaha Povia, Laura Silvia Battaglia.

Da 04/2016 a 08/2016

Executive master in International Business Development (percorso Export management e internazionalizzazione d'impresa)

Sida group Management Academy, Bologna (BO)

Principali tematiche trattate: Strategie per l'internazionalizzazione d'impresa; marketing analitico e operativo; web marketing; social media marketing; project management; supply chain management e disciplina doganale; bilancio aziendale; controllo di gestione, pianificazione e strategia aziendale; business plan e finanziamenti; fiscalità e contrattualistica internazionale; tutela di marchi e brevetti; pagamenti internazionali e gestione del credito; analisi di mercato.

06/2016

Diploma congiunto NATO Allied commander transformation-UNIBO

NATO summer workshop and NATO Model event, Forlì (FC)

"NATO and Security Challenges: Institutions and Policies, Key Trends and Best Practices"

Ruolo ricoperto: giornalista NATO

Principali tematiche: Changing balances and the role of NATO in international politics: current challenges and

future opportunities; NATO in the future; Cooperative Security: Nato Partnerships in Perspective; Collective Defence and Crisis Management – Art.5 and Beyond; NATO and Other Actors in the New Security Environment: NATO and the UN'; NATO and the EU; Cybersecurity: Myth and Reality; The changing global security environment: Exploring new challenges and opportunities.

Da 09/2014 a 06/2015

Erasmus +

Institut d'études politiques (SCIENCES PO), Lione, Francia

Specializzazione nel percorso Affari internazionali e commerciali

Principali tematiche: Politique commerciale européenne et comparée; Pratiques du commerce international; Médias, pouvoir et construction du consensus politique ; Communication politique et publique; Théorie et pratiques de la diplomatie; Violence internationale et gestion des conflits; Politiques publiques; Histoire internationale.

Da 09/2013 a 03/2016

Laurea magistrale in scienze internazionali e diplomatiche
Curriculum: politica e sicurezza internazionale

Votazione: 110 con lode /110

Alma Mater Studiorum università di Bologna, Campus di Forlì

Redazione della tesi sperimentale in lingua francese, dal titolo «*L'outrecuidance «à la française»: paradoxes stratégiques et ambigüités historiques de la politique européenne et de défense de la France* ».

Attività extracurriculari:

- Co-fondatrice dell'associazione IAPSS (International Association For Political Science Students)
- 07/05/2014: SEMINAR "The Ukrainian Warfare: historical path and future implications to the International System" (organizzatrice)
- 11/04/2014: Incontro "Percorsi verso le carriere internazionali-da scienze politche al mondo globale", Campus di Forlì
- 06/03/2014: simulazione del Consiglio dell'UE nella formazione Occupazione e Affari Sociali (Forlì) – Ruolo: Germania

Da 09/2010 a 07/2013

Laurea in scienze internazionali e diplomatiche

Alma Mater Studiorum università di Bologna, Campus di Forlì

Attività extracurriculari:

- 05/2013: NATO Model Event (Forlì) - Ruolo: Ambasciatrice della Lituania
- 10/05/2013: "Croatian Membership in the New Europe", conferenza con l'Ambasciatore croato in Italia, Damir Grubiša, Punto Europa (Forlì)
- 12/04/2013: incontro ISPI "GLOBE, orientamento alle carriere internazionali", Campus di Forlì
- 07/03/2013: "L'Emilia nel cuore dell'Europa. Emigrazione in Belgio. Storia e memorie di molte partenze e di qualche ritorno", presentazione del libro del professor Lorenzo Bertuccelli, Punto Europa (Forlì)
- 02/2013: Prague Model United Nations Conference (Praga) - Ruolo: delegata della Mongolia nel Consiglio economico sociale Onu (ECOSOC)
- 13/03/2012: Cerimonia di consegna del Sigillum Magnum a Jean-Claude Juncker, Romano Prodi e Helmut Kohl, Bologna

Da 09/2005 a 07/2010

Maturità linguistica

Liceo linguistico Gian Battista Vico, Sulmona (L'AQ)

Lingue di studio: inglese, francese e tedesco

Scambi culturali:

- 10/2008: scambio culturale in Germania, liceo "Kurfurst Maximilian Gymnasium" Burghausen (Salzach)
- 03/2008: scambio culturale in Francia, liceo "Jean Zay", Jarny (Lorraine)

COMPETENZE PERSONALI

Lingua madre: Italiano

Altre lingue

	COMPRENSIONE		PARLATO		PRODUZIONE SCRITTA
	Ascolto	Lettura	Interazione	Produzione orale	
Inglese	C1/C2	C1/C2	C1/C2	C1/C2	C1/C2
Francese	C1/C2	C1/C2	C1/C2	C1/C2	C1/C2
Tedesco	B1/B2	B1/B2	B1/B2	B1/B2	B1/B2
Russo	B1	B1	B1	B1	B1
Spagnolo	A2	A2	A2	A2	A2

Competenza digitale

AUTOVALUTAZIONE				
Elaborazione delle informazioni	Comunicazione	Creazione di Contenuti	Sicurezza	Risoluzione di problemi
Utente intermedio	Utente intermedio	Utente intermedio	Utente intermedio	Utente intermedio

Altre competenze

- Corsi CRI (Pioniere e Volontaria del soccorso della Croce Rossa Italiana, corso BLSD e abilitazione all'utilizzo del defibrillatore semi automatico esterno)
- Attività sportiva agonistica (Federazione italiana Pentathlon moderno_ società sportiva Valpescara srl)
- Educatrice in Azione Cattolica e accompagnatrice/organizzatrice di campi estivi parrocchiali
- Aiuto nel doposcuola parrocchiale e ripetizioni private (saltuariamente).
- Conoscenza del sistema di scrittura e di lettura Braille

Patente di guida

B

ULTERIORI INFORMAZIONI

Progetti

GENERAZIONE ITALIA - Progetto di formazione istituzionale e innovazione legislativa organizzato dalla FONDAZIONE CULTURA DEMOCRATICA e dal GOVERNO ITALIANO
Roma, 04 -08/ 2017

Riconoscimenti e premi

- Luglio 2015: attestato di merito per studenti meritevoli, Alma Mater Studiorum Università di Bologna
- 11/12/2010: Borsa di studio per conseguimento del diploma con esito eccellente, elargita dal "Centro studi Mac 47, Carmine Mastrogiuseppe no profit", Sulmona (L'AQ)
- 08/2010: Segnalazione da parte del Dirigente Scolastico del liceo G.B.Vico (Sulmona-L'AQ) per rappresentare la scuola e partecipare al Premio "Alfieri del Lavoro" e alle prove di ammissione nel Collegio Universitario Lamaro Pozzani di Roma, realizzate dalla Federazione Nazionale dei Cavalieri del Lavoro
- 05/2001: Riconoscimento ed elezione alla carica di Consigliere nel Consiglio comunale dei bambini di Torre de' Passeri (PE)

Certificazioni

- Luglio 2016: CORSO DI FORMAZIONE GENERALE PER I LAVORATORI secondo il D.Lgs. 81/2008 e l'accordo Stato Regioni del 21/12/2011

Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali".

Pescara, 18/01/2018

Elisabetta Natale

europass Curriculum Vitae

PERSONAL INFORMATION

Damiano Verzulli

Viale Unita' d'Italia 224, 66100 Chieti (Italia)

+39 3495893862 (*"Telegram" enabled*)

damiano@verzulli.it

Date of birth Sep. 28th, 1971 | Nationality Italian

WORK EXPERIENCE

from may 2003, up to now — System & Network specialist (Consultant)

Università degli Studi "G. d'Annunzio" di Chieti-Pescara, Chieti (Italia)
http://www.unich.it

- Network management (3.300 interconnected hosts distributed around hundreds VLAN and 7 remote sites; 3x1Gbps Internet backbone [GARR]; a layered server farm focused on both services and security): monitoring, fixing, capacity planning;
- System management, with particular focus to the university e-mail platform (several servers; 2.500 mailboxes; more than 4TB of on-line storage) and virtualization environment (more than 30 VMs powered by a (phasing-out) vmWare ESX cluster and a (increasingly adopting) XEN Server 7 environment);
- System management of the underlying hardware infrastructure: DELL Blade Center m1000e with related blade-servers; an EMC^2 SAN (one storage array with four additional enclosures); a multilayer backup infrastructure; a web-hosting platform (several LAMP stacks); various other IT systems (logging, monitoring, TTS, VPN, etc.);
- Security management: ensuring proper security levels among all layers of ICT infrastuctures:
  - Layer 2: wired 802.1x; wireless 802.1x; Radius AAA infrastructures;
  - Layer 3: firewalling, security assessment, Network-based Intrusion Detection Systems, ip-flow analysis (*NetFlow/IPFIX, SFLOW*) with particular focus on BotNet detection;
  - Layer 4 – Layer 7: Host-based Intrusion Detection Systems; Log analysis; Application specific vulnerabilities and patching; web-platforms hardenization (*Apache mod-security and reverse proxies);* incident handling and response, including source code-analysis of (web-based) malware;
  - Cross-layers: infrastructure planning and deployment (virtual infrastructures [*Vmware, XEN*] and related deployment [Hardware, Networking, Clustering, VM deployments, Backup & D/R]
- 2° level support towards underlying software stacks, with a particular focus to "open-source" technologies (linux, apache, mysql, php, rsyslog, pmacct, nagios, munin, postfix, courier, etc.);

april 2010 - august 2010 — IT Specialist

MIUR – Italian Ministry of Education, Universities and Research

- Member of the technical-staff established by the Italian Ministry of Education, University and Research to plan and conduct the Five-Year Research Evaluation 2004-2008 Exercise [1]

[1] http://civr.miur.it/en/vqrteam.html - http://civr.miur.it/en/index.html

april 2010– december 2013

IT Specialist

MIUR – Italian Ministry of Education, Universities and Research

- External member of the technical-commettee of the "Università Digitale" project, funded by the Italian Department of Public Administration and Innovation and involving ICT development and cooperation among 23 Italian universities and the Italian Ministry of Education, Universities and Research.
  As an external member, he attended 15 meetings and directly supported the communication within the group by creating and managing several mailing-lists and a private intranet/website;

March 2005 - march 2007

Project Manager - TOSSAD (FP6)

- Project Manager for TOSSAD – Towards Open Source Software Adoption and Dissemination -, an EU project funded under the FP6 IST program (Contract No. 015981 signed on march 22nd 2005) whose objective was "*...to start integrating and exploiting already formed methodologies, strategies, skills and technologies in F/OSS domain in order to help governmental bodies, educational institutions and SMEs to share research results, establish synergies, build partnerships and innovate in an enlarged Europe...*" .
  In TOSSAD he was involved in WorkPackage 3, leading the delivery process of several project-deliverables.

september 1999 – february 2003

Project Manager and Team Leader

Nextra Spa (a former Telenor Norway Company), Casalecchio di Reno (BO) - Italy

- Web-development Team Leader, coordinating a team of 5 to 12 people;
- Project Manager for various web-portal contracts;
- Local contact point, towards "corporate", for all the issues related to web-development software technologies and web-development hardware and system infrastructures.
- System administrator of the web-hosting platform.

As such he had the change to often travel abroad, all-around other Nextra Europe sites as well as to corporate headquarter, in Norway.

May 1996 – august 1999

Internet Application Developer

CINECA - Consorzio Interuniversitario, Casalecchio di Reno (BO) - Italy

- Web developer (Perl/CGI; PHP; Postgresql; MySQL);

- Junior sysadmin for IRIX and HP-UX platforms powering the web-hosting services;

EDUCATION AND TRAINING

1991 - 1995

Computer Science degree

University of L'Aquila – Italy - with full marks *(110 cum laude)*

The thesis titled "*Multidimensional Interval Routing techniques*" researched some routing topics in specic network environments.

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
English C1	C1	C1	B2	B2

Levels: A1/2: Basic user - B1/2: Independent \user - C1/2 Proficient user
Common European Framework of Reference for Languages

Organisational / managerial skills

- Significant project-management attidute and skills mainly thanks to previous working experience, also in multicultural/international team;
- Being able to (comfortably) speak to both technical and non-technical targets, even within medium/large conferences. As an example:
  - 2005: “Free Software World Conference” - 26/10/2005, Badajoz, Spain
  - 2009: “GARR Workshop” - 17/06/2009, Rome, Italy
- Being able to present/discuss deeply technical topics to non-technical decision-makers (CEOs, CFOs, etc.);
- Presenting an uncommon balance between technical knowledge, capacity to deliver, team-working and customer satisfaction.

Computer skills

- Deep knowledge of Linux-based systems;
- Good knowledge of Microsoft “server” platforms (Domain, Active Directory, etc.), with particular reference to the interoperability/integration with Linux environments;
- Deep knowledge of networking technologies, ranging from Layer 2 (Ethernet) up to Layer 7 Internet protocols (HTTP, FTP, SMTP, SNMP, DNS, NTP, SYSLOG, POP/IMAP, SSL, etc.)
- Good “web programming” skills, mainly as PHP and PERL development but also with respect to current/modern WEB 2.0 pattern (AngularJS and other Javascript platforms/frameworks, Bootstrap CSS, NoSQL);
- Good knowledge of DBMS technologies, with particular reference to SQL language and MySQL/MariaDB engine;
- Good knowledge of collaborative development technologies (GIT);
- Good knowledge of virtualization platforms, with particular reference to VMware ESX/vSphere and XEN Server (v. 7, open-source);
- Deep knowledge of the Open-Source and Free Software movements, with particular reference to their impact towards Public Administrations and, more in general, to the Society as a whole.

ADDITIONAL INFORMATION

Additional information

- Very “open minded” and “technology” addicted;
- Really interested in the security side of the Internet technologies, expecially related to web-security (web application vulnerabilities) and network traffic analysis (BotNet detection);
- “Arduino” and “ESP8266” microcontroller addicted. Really interested in deepen related know-how, expecially regarding the current and future IoT trends;
- Member of the great StackExchange community, with particular reference to the ServerFault portal (http://serverfault.com/users/251104/damiano-verzulli ; 5 questions and 50 answers for a 1916 current score);
- Aiming to work in multicultural and multiethnical context, better if in “international” groups/companies;
- he'd like to be involved as project-manager for medium/large projects, better if in medium/large "global" companies, even better if with Free/Open-Source-Software as a common base for such projects;
- he would like to continue to broaden his knowledge about Internet technologies and to always “stay-inline" with technology news and trends.