

CURRICULUM VITAE

PERSONAL INFORMATION

NAME: Carlos Raúl ARGÜELLES

DATE OF BIRTH: December 19 of 1980

PLACE OF BIRTH: Benito Juárez- Buenos Aires- Argentina

CITIZENSHIP: Argentinian

SEX: Male

ADRESS: Sapienza Università di Roma, Dipartimento di Fisica, Ed. Marconi, Ple. Aldo Moro 5 (00185), Rome-Italy

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EDUCATION

2011-2012

- **PH.D IN RELATIVISTIC ASTROPHYSICS**

International Center for Relativistic Astrophysics Network, University of Rome "La Sapienza", Rome-Italy. Second Year.

Director: Remo Ruffini (ICRA, ICRANet)

2010-2011

- **PH.D IN PHYSICS**

Exact Sciences Faculty, Physics Department, – Universidad Nacional de La Plata (UNLP), La Plata-Argentina. First year.

Work Plan (title): String Theory and Branes dynamics: applications to Cosmology.

Director: Nicolás E. Grandi (IFLP, CONICET, UNLP)

Co-Director: Guillermo Silva (IFLP, CONICET, UNLP)

2009-2010

- **MASTER IN PHYSICS**

Facultad de Ciencias Astronómicas y Geofísicas (FCAGLP), Universidad Nacional de La Plata (UNLP), La Plata-Argentina.

THESIS: Topological defects in Hořava-Lifshitz Gravitational theory.

Director: Nicolás E. Grandi (IFLP, CONICET, UNLP)

Co-Director: Héctor Vucetich (CONICET, UNLP)

2000-2010

- **ASTRONOMER**

Facultad de Ciencias Astronómicas y Geofísicas (FCAGLP), Universidad Nacional de La Plata (UNLP), La Plata-Argentina.

EMPLOYMENT HISTORY

- **ACADEMIC POSITIONS**

2011

Teacher Assistant in Relativistic Quantum Mechanics.
Exact Sciences Faculty, Universidad Nacional de La Plata (UNLP), La Plata-Argentina.

2010-2011

Teacher Assistant in Differential and Integral Calculus (second course).
Exact Sciences Faculty, Universidad Nacional de La Plata (UNLP), La Plata-Argentina.

2010

Teacher Assistant in Mathematics for the admission course in Astronomy and Geophysics.
Facultad de Ciencias Astronómicas y Geofísicas (FCAGLP), Universidad Nacional de La Plata (UNLP), La Plata-Argentina.

2008-2011

Teacher assistant in Newtonian Mechanics.
Exact sciences faculty, Universidad Nacional de La Plata (UNLP), La Plata-Argentina.

2007-2008

Teacher Assistant in Electromagnetism (Laboratory).
Exact Sciences Faculty, Universidad Nacional de La Plata (UNLP), La Plata-Argentina.

2006-2011

Teacher Assistant in General Physics for Biologists.
Facultad de Ciencias Naturales y Museo (FCNyM), Universidad Nacional de La Plata (UNLP), La Plata-Argentina.

ACADEMIC ACTIVITIES

2007

Titular member for the undergraduate cloister in the advisory committee for a Teaching assistant contest of the Modern Physics course. Facultad de Ciencias Astronómicas y Geofísicas (FCAGLP)-UNLP, La Plata-Argentina.

2008

Titular member for the undergraduate cloister in the advisory committee for a Teaching assistant contest of the Introduction in Relativistic Astrophysics course. Facultad de Ciencias Astronómicas y Geofísicas (FCAGLP)-UNLP, La Plata-Argentina.

2010

Titular member for the graduate cloister in the advisory committee for an Adjoint Professor contest of the Stellar Interiors course. Facultad de Ciencias Astronómicas y Geofísicas (FCAGLP)-UNLP, La Plata-Argentina.

PUBLICATIONS

REFEREED JOURNALS

2012

Self-Gravitating systems of fermions at finite temperature and Galactic Dark Matter, C. R. Argüelles, I. Siutsou, B. Fraga, R. Ruffini. In preparation.

On Einstein clusters and Dark Matter, C.R.Argüelles, A. Geralico, R.Ruffini. In preparation.

Self-Gravitating systems of fermions at finite temperature: modeling Early-Type Galaxies, C. R. Argüelles, M. Merafina, R. Ruffini. In preparation.

Modelling dwarf galaxies with semi-degenerate self-gravitating systems of fermions: the case of NGC 205, C. R. Argüelles, M. Merafina, R. Ruffini. In preparation.

2012

Membrane solutions to Hořava-Lifshitz, Carlos R. Argüelles, N. E. Grandi. Submitted to Class. Quantum Grav. (arXiv:1008.1915[hep-th]).

CONTRIBUTIONS TO THE THE PROCEEDINGS OF MEETINGS AND WORKSHOPS

2011-2012

The relativistic Feynman Metropolis Teller Theory at Zero and finite Temperatures, S. Martins de Carvalho, J. A. Rueda, C.R. Argüelles and R. Ruffini, Beijing-China (2011). To be published in the Proceedings of the 3rd Galileo-Xu Guangqi Meeting.

Self-Gravitating system of fermions as central objects and Dark Matter halos in Galaxies, B. Fraga, C. R. Argüelles, R. Ruffini, Beijing-China (2011). To be published in the Proceedings of the 3rd Galileo-Xu Guangqi Meeting.

Semi-degenerate self-gravitating system of fermions as Dark Matter in Galaxies II: Core and Halo description, C. R. Argüelles, B. Fraga, R. Ruffini, Stockholm-Sweden (2012). To be published in the International Journal of Modern Physics D (IJMP) and in the proceedings of the XIII Marcel Grossmann Meeting.

On Einstein Clusters and Dark Matter, C. R. Argüelles, Andrea Geralico, R. Ruffini, Stockholm-Sweden (2012). To be published in the proceedings of the XIII Marcel Grossmann Meeting.

2009

Measuring the evolution of previous ideas in Physics of the beginning students to UNLP and his teachers, D. Badagnani et al., published in the First International Congress of University pedagogy (UBA).

Workshop in Physics teaching for students of the Naturals Sciences and Museum Faculty, UNLP, G. Flores et al., published in the First International Congress of University pedagogy (UBA).

TALKS AND POSTERS

2012

Semi-degenerate self-gravitating system of fermions as Dark Matter in Galaxies II: Core and Halo description, XIII Marcel Grossmann Meeting. Stockholm-Sweden. Talk.

On Einstein Clusters and Dark Matter, XIII Marcel Grossmann Meeting. Stockholm-Sweden. Talk.

2011

The relativistic Feynman Metropolis Teller Theory at Zero and finite Temperatures, S. Martins de Carvalho, J. A. Rueda, C.R. Argüelles and R. Ruffini, 3rd Galileo-Xu Guangqi Meeting, Beijing-China. Poster.

2010

Membrane solutions to Hořava-Lifshitz, XLIII Seminar of Strings@ar, Instituto de Astronomía y Física del Espacio (IAFE), Buenos Aires-Argentina. Talk.

Membrane solutions in the Hořava Gravitational theory, 53^a Annual meeting of the Argentinian Asociation of Astronomy (AAA), Salta-Argentina. Poster.

SCHOOLS, MEETINGS AND GRADUATED COURSES

2003

46^a anual meeting of the Argentinian Asociation of Astronomy (AAA), Facultad de Ciencias Astronómicas y Geofísicas (FCAGLP)-UNLP, La Plata-Argentina.

2005

48^a anual meeting of the Argentinian Asociation of Astronomy (AAA), Facultad de Ciencias Astronómicas y Geofísicas (FCAGLP)-UNLP, La Plata-Argentina.

2007

Grav07 Gravitation and Relativity congress, Córdoba-Argentina.

2008

First La Plata international school of Astronomy: Compact objects and their emission, Facultad de Ciencias Astronómicas y Geofísicas (FCAGLP)-UNLP, La Plata-Argentina.

2009

XXXVIII meeting of STRINGS@AR, Instituto de Astronomía y física del espacio (IAFE), Buenos Aires-Argentina.

2010

XLI meeting of STRINGS@AR, Instituto de Astronomía y física del espacio (IAFE), Buenos Aires-Argentina.

XLII meeting of STRINGS@AR, Physics department- UBA, Buenos Aires-Argentina.

Internatinal school in Quantum Gravity, La Plata-Argentina.

XIV Brazilian school in Cosmology and Gravitation, Río de Janeiro-Brazil.

53^a anual meeting of the Argentinian Asociation of Astronomy (AAA), Salta-Argentina.

XLIII meeting of STRINGS@AR, Instituto de Astronomía y física del espacio (IAFE) , Buenos Aires-Argentina.

Modern Cosmology topics, graduate course (one month) given by Matías Zaldarriaga and Román Scoccimarro, Physics department- UBA, Buenos Aires-Argentina.

5th ICTP-CLAF Latin American String school, Sao Paulo-Brazil.

2011

Teorie relativistiche lineari della gravitazione e dell'elettrodinamica, relativita' generale, Sapienza-Università di Roma, Professor: Remo Ruffini. Semiannual course.

12th Italian-Korean Symposium, ICRANet, Pescara-Italy.

ICRANet Ph.D School, Doctorate School in Fundamental and Applied Sciences, Sophia Antipolis-Nice University, Nice-France.

3rd Galileo-Xu Guangqi Meeting, Beijing-China.

2012

Collasso gravitazionale, buchi neri, polarizzazione del vuoto, big bang, cosmologia, Sapienza-Università di Roma, Professor: Remo Ruffini. Semiannual course.

Fisica nucleare, Sapienza-Università di Roma, Professor: Giovanni Salmè. Semiannual course.

Astrophysics from the radio to the Submillimetre-Planck and other experiments in temperature and polarization, Meeting, Bologna-Italy.

SIGRAV School-X edition: Astrophysical Black Holes, Como-Italy.

IRAP Ph.D Meeting: Murray-Gell Mann visit, Nice-France.

XIII Marcel Grossmann Meeting: On recent developments in theoretical and experimental General Relativity, Astrophysics, and relativistic field theories. Stockholm-Sweden.

IRAP Ph.D Erasmus Mundus school, Nice-France.

LANGUAGES AND COMPUTING SKILLS

COMPUTING

- **OPERATIVE SYSTEMS**

Linux (basic knowledge), Windows

- **COMPUTER LANGUAGES**

Fortran 77 and Fortran 90.

- **SCIENTIFIC SOFTWARE**

Mathematica, Maple, Gnuplot, LaTeX

LANGUAGES

- **SPANISH**

Native.

- **ENGLISH**

6th year capacity Diploma. *Asociación Argentina de Cultura Inglesa. (A.A.C.I). Año 2000.*

Speaking (Very Good), Listen- comprehension (Very good), Writing (Very good)

- **ITALIAN**

Speaking (Good), Listen- comprehension (Very good), Writing (good)

- **PORTUGUESE**

Speaking (-), Listen- comprehension (good), Writing (-)

AWARDS

Ph.D Fellowship (3 years- cofinanced), International Center for Relativistic Astrophysics Network, IRAP Ph. D, University of Rome “La Sapienza”, Rome, Italy, 2010. Accepted.

Ph.D Fellowship (3 years- cofinanced), Consorzio Universitario Italiano per l’Argentina (CUIA), Camerino, Italy, 2011. Accepted.

Ph.D Fellowship (3 years), Consejo Nacional de Investigaciones Cientificas y Técnicas (CONICET), La Plata-Argentina, 2010. Rejected.

Ph.D Fellowship (3 years), Universidad Nacional de La Plata (UNLP), La Plata-Argentina, 2011. Rejected.

REFERENCES

Remo Ruffini, Director of the International Center for Relativistic Astrophysics Network (ICRANet), Professor of Theoretical Physics, Physics Department, Università di Roma “La Sapienza”, Rome–Italy. ruffini@icra.it *en.wikipedia.org/wiki/Remo_Ruffini*

Jorge A. Rueda, Professor of Theoretical Physics of the International Center for Relativistic Astrophysics Network (ICRANet) at Università di Roma “La Sapienza”, Rome–Italy. jorge.rueda@icra.it

Nicolás E. Grandi, CONICET researcher at the La Plata Physics Institute (IFLP) and Professor in the Physics department of the Universidad Nacional de La Plata (UNLP). _grandi@fisica.unlp.edu.ar

Héctor Vucetich, main CONICET researcher (retired), Professor of Theoretical Physics in FCAGLP of the La Plata National University (UNLP).