

Rotondo Michael

Position: postdoctoral researcher
Period covered: 2008-2010



I Scientific Work

Supercritical electric fields in nuclei and neutron stars
Electrodynamical properties of white dwarfs and neutron stars

II Conferences and educational activities

Conferences and Other External Scientific Work

APS April Meeting, St.Louis, Missouri (USA), 11-15 April, 2008: '*Ultra-relativistic solutions of Thomas-Fermi equation*'

3rd E.C.G. Stueckelberg Workshop, Pescara (Italy), 7-19 July, 2008: '*On the gravitational and electro-dynamical stability of nuclear matter cores*'.

6th Italian-Sino Workshop, Pescara (Italy), 29 June-1 July, 2009: '*Massive neutron density cores*'.

12th Marcel Grossmann Meeting on General Relativity, 13-18 July, 2009: '*On the gravitational and electro-dynamical stability of nuclear massive density cores*'.

2nd Galileo-Xu Guangqi Meeting, 11-16 July 2010, Ventimiglia (Italy)-Nice (France): '*On the relativistic Thomas-Fermi treatment of compressed atoms and compressed nuclear matter cores of stellar dimensions*'.

Work With Students

Students of the IRAP-PhD program at University "Sapienza", Rome, Italy: Barbara Patricelli, Jorge A. H. Rueda, Kuantay Boskhayev.

Other Teaching Duties

Lessons on the *Thomas-Fermi model and its applicability to the study of the structure of compact stars* within the courses '*Relativistic Linear Theories of the Gravitation and Electrodynamics*' and '*Black Holes, Vacuum Polarization, Big Bang and Cosmology*' by Prof. Remo Ruffini at Physics Department of the University "Sapienza", Rome, Italy, academical years 2008/2009 and 2009/2010.

2010 List of Publications

Rueda J. A. H., Rotondo M., Ruffini R. and Xue S.-S., *A Self-Consistent Approach to Neutron Stars*, Journal of the Korean Physical Society, Vol.57, No. 3, 560-562, 2010.

Aksenov A. G., Bernardini M. G., Bianco C. L., Bini D., Caito L., Chardonnet P., Cherubini C., De Barros G., Geralico A., Izzo L., H. Kleinert, Patricelli B., Rangel Lemos L.J., Rotondo M., Rueda Hernandez J.A., Vareshchagin G., Xue S-S, *Dipartimento di Fisica dell'Università di Roma Sapienza, January 2007-December 2009 Scientific Report*, p. 34, 2010 (<http://www.phys.uniroma.it/>)

Rotondo M., Ruffini R., Xue S.-S., *Analytic Solutions of the Ultra-Relativistic Thomas-Fermi Equation*, in Proceedings of the Third Stueckelberg Workshop, N. Carlevaro and G. W. Vereshchagin (eds.), (Cambridge, 2010, in press).

Rueda J. A. H., Rotondo M., Ruffini R. and Xue S.-S., *The Extended Nuclear Matter Model with Smooth Transition Surface*, in Proceedings of the Third Stueckelberg Workshop, N. Carlevaro and G. W. Vereshchagin (eds.), (Cambridge, 2010, in press).

Popov V., Rotondo M., Ruffini R., Xue S.-S., *On Gravitationally and Electrodynamically Bound Massive Nuclear Density Cores*, 2010 (submitted to Physical Review C).

Rotondo M., Rueda J. A. H., Ruffini R., Xue S.-S., *On the relativistic Thomas-Fermi treatment of compressed atoms and compressed nuclear matter cores of stellar dimensions*, 2010 (submitted to Physical Review C).

Rueda J. A. H., Rotondo M., Ruffini R., Xue S.-S., *A Rigorous General Relativistic Solution for a Self-Gravitating System of Degenerate Neutrons, Protons and Electrons in Beta Equilibrium* 2010 (submitted to Physical Review D).

Rotondo M., Rueda Jorge J. A. H., Ruffini R., Xue S.-S., *From Compressed Atoms to Compressed Massive Nuclear Density Cores*, in Proceedings of the twelfth Marcel Grossmann meeting, T. Damour, R. Jantzen and R. Ruffini (eds.), 2010 (submitted to World Scientific) .

Rueda J. A. H., Rotondo M., Ruffini R., Xue S.-S., *On Compressed Nuclear Matter: From Nuclei to Neutron Stars*, in Proceedings of the first Galileo-Xu Guangqi meeting, 2010 (submitted to International Journal of Modern Physics D).