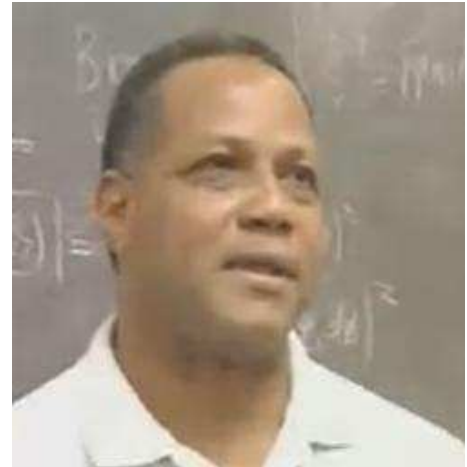


## Mosquera Cuesta Herman Julio



Position: Visiting Professor ICRA-BR/Rio de Janeiro

Period covered: 18 September – 18 December 2009

### I Scientific Work

#### PAPERS PUBLISHED IN 2009

Title: Bursts of Gravitational Waves Emitted During Ejection of Jet Superluminal Components in Active Galactic Nuclei Dynamically Dominated by Bardeen-Petterson Effect Authors: Mosquera Cuesta, Herman J.; Caproni, Anderson; Abraham, Zulema

Publication: AIP Conference Proceedings, Volume 1168, pp. 1094-1100 (2009).

NUMERICAL ANALYSIS AND APPLIED MATHEMATICS: International Conference on Numerical Analysis and Applied Mathematics 2009

Title: Primordial magnetic fields and gravitational baryogenesis in nonlinear electrodynamics Authors: Mosquera Cuesta, Herman J.; Lambiase, Gaetano

Publication: Physical Review D, vol. 80, Issue 2, id. 023013

Title: Warping and Precession in Extragalactic Maser Accretion Discs Authors: Caproni, A.; Abraham, Z.; Livio, M.; Mosquera Cuesta, H. J.

Publication: Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias) Vol. 35, pp. 58-59 (2009) (<http://www.astroscu.unam.mx/~rmaa/>) (RMxAC Homepage): XII Latin American IAU Regional Meeting (Eds. G. Magris, G. Bruzual, & L. Carigi)

Title: A spherically symmetric and stationary universe from a weak modification of general relativity Authors: Corda, C.; Mosquera Cuesta, H. J.

Publication: Europhysics Letters, Volume 86, Issue 2, pp. 20004 (2009)

Title: Neutrino mass spectrum from neutrino spin-flip-driven gravitational waves

Authors: Mosquera Cuesta, Herman J.; Lambiase, Gaetano

Publication: International Journal of Modern Physics D, v. 18, p. 435, 2009.

Title: Luminosity distance vs. proper distance: Effects of nonlinear electrodynamics in cosmology

Authors: Mosquera Cuesta, Herman J.; Salim, J. M.; Novello, M.

Publication: Proceedings of Science, v. ISFTG, p. PoS(ISFTG)009, 2009.

Title: L'energie sombre: Un mirage cosmique ? --- Luminosity distance vs. proper distance: A cosmological dissimilitude induced by nonlinear electrodynamics.

Author: Herman J. Mosquera Cuesta

Publication (To be published in: Proceedings of the International Conference: “Invisible Universe”, editor: Jean-Michel Alimi (AIP Conference Proceedings 2010).

Cosmological redshift and nonlinear electrodynamics propagation of photons from distant sources.

Author: Herman J. Mosquera Cuesta

Publication: To be published in the proceeding of the Italo-Pakistanese Workshop on Relativistic Astrophysics 2009, Editors F. De Paolis, and A. Qhadir, General Relativity and Gravitation (2010)

## **II Participation of Conferences and Educational Activities**

### *Conferences and Other External Scientific Work:*

1) Sobral Meeting

May 26-29, 2009 Fortaleza (Ceará) Brazil

2) Italo-Pakistanese Meeting on Relativistics Astrophysics

ICRANet, July 07-10, 2009 - Pescara, Italia

3) XIIth Marcel Grossmann Meeting on General Relativity

Palais de l’Unesco, July 12-18, 2009 – Paris, France

4) Invisible Universe International Conference

Palais de l’Unesco, June 29 -July 03, 2009 – Paris, France

### *Work With Students (currently one student)*

Co-advising the final phase of preparation of the Ph.D. Thesis Dissertation of graduate student :

Luis Juracy Rangel Lemos, advised by Prof. Remo Ruffini

### *Other Teaching Duties*

#### Mini-Courses in “Programa Mínimo de Cosmologia ICRA-BR” (Minimum program for cosmology)

1) Astrofísica de Ondas Gravitacionais (Gravitational waves astrophysics)

Manaus, AM, Brasil (2009)

2) Astrofísica de Objetos Compactos (Astrophysics of compact objects)

Manaus, AM, Brasil (2009)

### *New Scientific Collaborations*

During 2009, I started a few new scientific collaborations with the following scientists:

Prof. Timothy C. Beers, Michigan State University, East Lansing, Michigan

Prof. Salvatore Capozziello, Uni-Napoli, Napoli, Italia

Prof. Luis A. Sanchez (Universidad Nacional de Colombia, Sede Medellin

And reinforced the existing ones with:

Prof. Gaetano Lambiase, Uni-Salerno, Salerno, Italia

Dr. Christian Corda, Associazione Scientifica Galileo Galilei, Prato, Italia  
Dr. Jean-Paul Mbelek, Cea-Saclay, Paris, France

### **III Service activities**

#### *Within ICRANet*

Conferences and Other External Scientific Work:

- 1) Sobral Meeting  
May 26-29, 2009 Fortaleza (Ceará) Brazil
  
- 2) Italo-Pakistanese Meeting on Relativistic Astrophysics  
ICRANet, July 07-10, 2009 - Pescara, Italia
  
- 3) XIIth Marcel Grossmann Meeting on General Relativity  
Palais de l'Unesco, July 12-18, 2009 – Paris, France

Organization of International events

- 1) Sobral Meeting  
May 26-29, 2009 Fortaleza (Ceará) Brazil

#### *Outside ICRANet:*

- 2) Lanzamiento del Año Intenacional de la Astronomia 2009 en Colombia  
Anuncio Oficial de la Abertura de Inscripciones para el Nuevo programa de Astronomia de la  
Universidad de Antioquia  
Medellín, Colombia, Marzo 9-13 (2009)

### **V Other**

- 1) Co-editor of the special issue on gravitational waves: “The big challenge of gravitational waves: A new window on to the Universe”  
Editors: Christian Corda, Herman J. Mosquera Cuesta, Oswaldo D. Miranda  
To be published by "The Open Astronomy and Astrophysics Journal", (TOAAJ) 2009
  
- 2) Editor of the book-review on: Nonlinear electrodynamics in Gravitation, Astrophysics and Cosmology  
Editor: Herman J. Mosquera Cuesta\_  
Published by Nova Science Publishers, Inc., New york (2010)
  
- 3) Invited Referee of : The Open Astronomy and Astrophysics Journal