

## Geralico Andrea

Position: Postdoc

Period covered: October 1<sup>st</sup>, 2006 – present



### I Scientific Work

- 1  $S^3+I^3$  splitting of spacetime: measurement processes and the role of observers in general relativity;
- 2 test particle dynamics in black hole spacetimes; motion of small extended bodies (neutral or charged test particle endowed with an internal structure described by its spin and quadrupole moment);
- 3 general relativistic perturbation theory of Einstein-Maxwell systems;
- 4 exact solutions of Einstein's field equations;
- 5 gravitational lensing techniques in strong gravitational fields;

### II Conferences and educational activities

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

ICRANet Workshops 2001-2009

X<sup>th</sup> Brazilian School of Cosmology and Gravitation (Rio de Janeiro, Brazil, 2002)

XI<sup>th</sup> Marcel Grossmann Meeting (Berlin, DE, 2006)

APS April Meeting (Jacksonville, US, 2007)

XII<sup>th</sup> Marcel Grossmann Meeting (Paris, FR, 2009)

### 2009 List of publications

Bini D., Cherubini C., **Geralico A.**, Jantzen R. T.,  
*Electrocardiogram of the Mixmaster universe*,  
Classical and Quantum Gravity, vol. 26, 025012, 2009

Cherubini C., **Geralico A.**, Rueda J. A. H., Ruffini R.,  
 *$e^-e^+$  pair creation by vacuum polarization around electromagnetic black holes*,

Physical Review D, vol. 79, 124002, 2009.

Bini D., **Geralico A.**, Luongo O., Quevedo H.,

*Generalized Kerr spacetime with an arbitrary mass quadrupole moment: geometric properties vs particle motion,*

Classical and Quantum Gravity, vol. 26, 225006, 2009.