

VII Mexican School on Gravitation and Mathematical Physics “Relativistic Astrophysics and Numerical Relativity”

Playa del Carmen, Quintana Roo, Mexico, November 26 - December 1, 2006

PLEASE TAKE NOTE OF THE FOLLOWING DETAILS:

- Registration: Sunday November 26, 18:00-20:00 hours; also early Monday morning (before 9:00 am).
- Do notice that lunch breaks are very long. We hope you enjoy the beach!
- The travel agency (Tierra Maya Tours) is offering excursions to Tulum or Xelha for the free Wednesday afternoon. The price will depend on the final number of people going. The trip **MUST** be booked on Monday, since transportation arrangements have to be made in advance.

Scientific program:

- Monday 27 November
 - 9:00 - 10:00 Course I, *Numerical analysis for numerical relativists* (1/4): M. Choptuik
 - 10:00 - 11:00 Course V, *Searching for gravitational waves* (1/2): G. Gonzalez
 - 11:00 - 11:30 Coffee
 - 11:30 - 12:30 Course III, *Structure and galaxy formation in a hierarchically clustering Universe* (1/4): J. Navarro
 - 12:30 - 13:30 Course IV, *Construction of initial data for 3+1 numerical relativity* (1/4): E. Gourgoulhon
 - 13:30 - 17:00 Lunch
 - 17:00 - 18:00 Plenary talk 1, *The dawn of a golden age for binary black hole simulations*: M. Campanelli
 - 18:00 - 19:00 Plenary talk 2, *Two and three body encounters: Astrophysics and the role of numerical relativity*: P. Laguna
 - 19:00 - 20:00 Plenary talk 3, *Merger of binary neutron stars in full general relativity*: M. Shibata
- Tuesday 28 November
 - 9:00 - 10:00 Course V, *Searching for gravitational waves* (2/2): G. Gonzalez
 - 10:00 - 11:00 Course II, *Introduction to relativistic hydrodynamics* (1/4): J.A. Font
 - 11:00 - 11:30 Coffee
 - 11:30 - 12:30 Course III, *Structure and galaxy formation in a hierarchically clustering Universe* (2/4): J. Navarro
 - 12:30 - 13:30 Course IV, *Construction of initial data for 3+1 numerical relativity* (2/4): E. Gourgoulhon
 - 13:30 - 17:00 Lunch
 - 17:00 - 20:00 Short talks

- Wednesday 29 November

- 9:00 - 10:00 Course I, *Numerical analysis for numerical relativists* (2/4): M. Choptuik
- 10:00 - 11:00 Course II, *Introduction to relativistic hydrodynamics* (2/4): J.A. Font
- 11:00 - 11:30 Coffee
- 11:30 - 12:30 Plenary talk 4, *Self-gravitating scalar fields: At the threshold of astrophysics*: F.S. Guzman
- 12:30 - 13:30 Plenary talk 5, *The Cauchy problem in scalar-tensor gravity*: M. Salgado
- 13:30 - 20:00 Free afternoon

- Thursday 30 November

- 9:00 - 10:00 Course I, *Numerical analysis for numerical relativists* (3/4): M. Choptuik
- 10:00 - 11:00 Course II, *Introduction to relativistic hydrodynamics* (3/4): J.A. Font
- 11:00 - 11:30 Coffee
- 11:30 - 12:30 Course III, *Structure and galaxy formation in a hierarchically clustering Universe* (3/4): J. Navarro
- 12:30 - 13:30 Course IV, *Construction of initial data for 3+1 numerical relativity* (3/4): E.ourgoulhon
- 13:30 - 17:00 Lunch
- 17:00 - 20:00 Short talks

- Friday 1st December

- 9:00 - 10:00 Course I, *Numerical analysis for numerical relativists* (4/4): M. Choptuik
- 10:00 - 11:00 Course II, *Introduction to relativistic hydrodynamics* (4/4): J.A. Font
- 11:00 - 11:30 Coffee
- 11:30 - 12:30 Course III, *Structure and galaxy formation in a hierarchically clustering Universe* (4/4): J. Navarro
- 12:30 - 13:30 Course IV, *Construction of initial data for 3+1 numerical relativity* (4/4): E.ourgoulhon
- 13:30 - 17:00 Lunch
- 17:00 - 18:00 Plenary talk 6, *Strong hyperbolicity and applications to general relativity*: O. Reula
- 18:00 - 19:00 Plenary talk 7, *Radiative-type boundary conditions for Einstein's field equations*: O. Sarbach
- 19:00 - 20:00 Plenary talk 8, *Solving Einstein's equations through computational science*: E. Seidel

Short talks:

• Tuesday 28 November

- 17:00 - 17:20 Deirdre Shoemaker (Penn State Univ.): *Binary black hole simulations through the eyepiece of data analysis*
- 17:20 - 17:40 Tonatiuh Matos (CINVESTAV-IPN): *Galaxy formation from IIB superstring theory with fluxes*
- 17:40 - 18:00 Jorge Cervantes (ININ): *A spherical scalar-tensor galaxy model*
- 18:00 - 18:20 Mario Rodriguez (ININ): *Scalar-tensor cosmological simulations*
- 18:20 - 18:40 David Martinez (ICN-UNAM): *Hyperbolicity of the system of equations for the scalar-tensor theories*
- 18:40 - 19:00 Claudia Moreno (Univ. Guadalajara): *Gravitational perturbations in scalar fields*
- 19:00 - 19:20 Miguel Sabido (IFUG): *Noncommutative black holes*

• Thursday 30 November

- 17:00 - 17:20 Vladimir Manko (CINVESTAV-IPN): *Stationary axisymmetric electrovac spacetimes with equatorial symmetry and antisymmetry*
- 17:20 - 17:40 Jordi Sod (CINVESTAV-IPN): *Poynting vector of stationary axisymmetric electrovac spacetimes in the Ernst formalism*
- 17:40 - 18:00 Jose David Sanabria (Univ. Ind. de Santander): *Radiant shock waves in the post-quasistatic approximation*
- 18:00 - 18:20 Ruben Cordero (ESFM-IPN): *Supertubes and dynamics of Born-Infeld objects*
- 18:20 - 18:40 Valeri Dvoeglazov (Univ. de Zacatecas): *The modified Bargmann-Wigner formalism (bosons of spin 1 and 2)*
- 18:40 - 19:00 Cuauhtemoc Campuzano (CEFIMAS): *Non-circular stationary spacetimes*