Special Guest Lectures

Extreme-Mass-Ratio Inspirals: Another opportunity for Numerical Relativity

Carlos F. Sopuerta, University of Guelph, Canada

Johnston Hall 338
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Abstract:
The "death spiraling" of stellar-mass compact objects captured by (super)massive black holes at the galactic centers constitute one of the main sources of gravitational waves to be observed by the future Laser Interferometer Space Antenna (LISA). To turn these observations into relevant astrophysical information, a priori knowledge of the gravitational waveforms is required. In this talk I will describe how numerical simulations can help in this task and what are the main challenges they face. Then, I will present some efforts based on the Finite Element Method and discuss future directions in the numerical description of Extreme-Mass-Ratio Inspirals.

Speaker's Bio:
Carlos F. Sopuerta obtained his PhD from the University of Barcelona (1996) working in the area of cosmology and relativistic astrophysics. After working at the same university as an assistant lecturer, he moved to the Institute for Theoretical Physics of the Friedrich Schiller University of Jena (Germany) as an Alexander von Humboldt Fellow (1998-2000). After that, he went to the Institute of Cosmology and Gravitation of Portsmouth University (United Kingdom) as a Marie Curie and EPSRC Fellow (2000-2003). Then, he moved to the Institute of Gravitational Physics and Geometry of Penn State University (2003-2006). In 2006, he came to the University of Guelph (Canada) and works in the area of Gravitational Wave Physics. In 2007, he will move to the Institute of Space Sciences (Spanish National Research Council/CSIC, Barcelona, Spain) to work as a Ramon y Cajal Research Fellow.

Refreshments will be served.
This lecture has a reception.

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