

## NUMERICAL RELATIVITY AND THE FORMATION OF BLACK HOLES

**Jerome Novak** (Laboratoire Universe et Théories, CNRS, Francija) bo predaval o numerični relativnosti in nastanku črnih lukenj v **torek, 6. 3. 2012, ob 14h v predavalnici F3 na FMF**, Jadranska 19, Ljubljana (pozor: sprememba predavalnice!). Vabljeni!

Prejšnja predavanja so na razpolago na spletni strani [Astrodebate](#). Predavanje bo v angleščini.

### Povzetek predavanja:

Stellar-type black holes (of the order of 10 solar masses) are supposed to be born during the collapse of very massive stars. As even an approximate limit on mass and metallicity of main-sequence progenitors, discriminating between neutron star and black hole formation, is poorly known, it is very important to perform numerical simulations in order to understand the physical processes at work during the stellar core-collapse: hydrodynamics, relativistic gravity, neutrino transport, nuclear matter properties, ... In this talk, I shall present a ongoing project to simulate these events. I shall start with a general overview of the core-collapse context, introducing then the general-relativistic formalism to compute the gravitational field and to simulate black holes, before giving some numerical tools (in particular spectral methods) for the solution of partial differential equations arising within this model.