

The CoCoNuT code: from neutron star oscillations to supernova explosions

**P. Cerdá-Durán¹, M. Gabler¹, E. Müller², J.A. Font¹, N. Stergioulas³,
M. Obergaulinger¹, M.A. Aloy¹, N. DeBrye¹, I. Cordero-Carrión², and
J.M. Ibáñez¹**

¹ Dept. Astronomía y Astrofísica, Universidad de Valencia (Spain)

² Max-Planck-Institut für Astrophysik, Garching bei München (Germany)

³ Aristotle University of Thessaloniki (Greece)

Abstract

CoCoNuT is a numerical code, that evolves the General relativistic magneto-hydrodynamics equations coupled to the Einstein equations in the CFC approximation. Its main purpose is to simulate astrophysical scenarios in which strong gravity is important such as the collapse of massive stars and the evolution of neutron stars. I review recent results of the numerical code regarding neutron star oscillations and core collapse supernova and its observational consequences.