Service d'Astrophysique
SÉMINAIRE

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Jeudi 26 février 11h00

CEA Saclay, Orme des Merisiers Bât 709, p 220

TOWARD UNDERSTANDING OF GRB-SUPERNOVA CONNECTION BY GENERAL RELATIVISTIC MHD SIMULATIONS

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I would like to present my recent study on collapsars using a General Relativistic MHD (GRMHD) code that I have developed. Also, I have developed a General Relativistic Force-Free (GRFFE) code by which Blandford-Znajek's paraboloidal solution is reproduced. I am going to discuss how important it is to develop a hybrid code that includes GRMHD and GRFFE codes toward understanding the central engine of a long GRB. Further, I have done numerical simulations on collapsars using ZEUS code by adding some microphysics such as a realistic equation of state and neutrino cooling/heating (Nagataki et al. ApJ 2007). If I have enough time, I would like to talk about explosive nucleosynthesis in a collapsar (Nagataki et al. ApJ 2006), which can give a strict constraint on the central engine of a long GRB.
