Institut de recherche sur les lois fondamentales de l'univers
SOUTENANCE DE THÈSE

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Vendredi 28 septembre 14h00

CEA Saclay, Orme des Merisiers Bat 713, salle de séminaires Galilée

ULTRALUMINOUS X-RAY SOURCES AND INTERMEDIATE-MASS BLACK HOLES

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SAp

Ultraluminous X-ray sources (ULXs) are variable off-nuclear extragalactic X-ray sources with luminosities greatly exceeding the Eddington luminosity of a 20-Msun compact object, assuming isotropic emission. These systems are binary systems containing a compact object that is either a stellar-mass black hole with beamed or super-Eddington emission; or an intermediate-mass black hole (IMBH). I will discuss the challenges of direct dynamical mass estimates, and show recent results on the most promising candidate NGC 5408 X-1.

I will also report the discovery of a large-scale radio nebula of IC342 X-1 and show that the optical/radio nebula require an order of magnitude higher total energy content than the Galactic binary SS433/W50, and discuss the possibility of its origin due to jet inflation. Finally, I will present the first radio detection of jet ejection events during the transition from the hard to soft states from the best IMBH candidate ESO 243-49 HLX-1 and discuss the possible role of ULXs as the link between stellar and supermassive black holes.

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