SEMINARIO
Departamentos de Física Teórica I y II
Universidad Complutense de Madrid

CONFERENCIANTE: Laura Tolos

Institut de Ciencies de l'Espai (ICE, CSIC-IEEC), Bellaterra, Barcelona, Spain

TITULO: Strongly interacting matter in the laboratory and stars

LUGAR: FACULTAD DE CIENCIAS FÍSICAS UCM
DÍA: 3 de diciembre, 2013 (Martes)
HORA: 14:00
AULA: Aula 14, Planta Baja

ABSTRACT

The interplay between the experimental results generated in terrestrial laboratories and the observations coming from stellar objects is of fundamental importance for offering solutions to long-standing puzzles in the physics of strongly interacting matter under extreme conditions. In this talk I will present some advances in the physics of dense matter in particle and nuclear accelerators as well as in compact stars.

With regards to dense matter in the laboratory, I will review the properties of strange and charm hadrons in nuclear matter and nuclei. I will discuss different frameworks paying a special attention to unitarized coupled-channel approaches. I will also analyze possible experimental signatures of the in-medium properties of these hadrons, in particular in connection with the future FAIR facility at GSI.

Concerning the different phases of matter inside compact star, I will review some results for hadronic matter in the interior of neutron stars and their consequences for their mass, radius, oscillations and cooling. I will also comment on possible constraints from back-to-Earth experiments, such as heavy-ion collisions.