Contribution ID: **210** Type: **not specified**

Internal Constitution and Equation of State of Neutron-Star Crusts Within the Nuclear Energy Density Functional Theory

Thursday 1 September 2016 17:30 (30 minutes)

The crust of a neutron star has a profound influence on various observed astrophysical phenomena such as pulsar sudden spin-ups, quasi-periodic oscillations in the giant flares from soft gamma-ray repeaters, X-ray bursts and superbursts, or the cooling of transiently accreting neutron stars. We have determined the internal constitution and the equation of state of neutron-star crusts in the framework of the nuclear energy density functional theory. Results using recent versions of the accurately calibrated Brussels-Montreal functionals based on generalized Skyrme effective interactions will be presented. The role of the stiffness of the neutron-matter equation of state, of the symmetry energy, of pairing, and of the spin-orbit coupling on the structure of neutron-star crusts will be discussed.

Summary

Primary author: CHAMEL, Nicolas (Université Libre de Bruxelles)

Co-authors: Dr FANTINA, Anthea (GANIL); Prof. PEARSON, John Michael (Université de Montréal); Dr GORIELY, Stéphane (Université Libre de Bruxelles)

Presenter: CHAMEL, Nicolas (Université Libre de Bruxelles)

Session Classification: Section F

Track Classification: Section F: Nuclear and Astroparticle Physics