Service de Physique Nucléaire
SÉMINAIRE

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Vendredi 04/04/2014, 11h00-12h00

CEA Saclay, Orme des Merisiers Bat 703, p 135

Exploring the nuclear landscape at the extremes: three-body forces and the physics of exotic nuclei

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The pioneering activities of rare-isotope beam facilities worldwide will create thousands of undiscovered nuclei, often existing at the limits of stability, for study in the laboratory. The quest to understand, from first principles, the properties of these exotic nuclei represents a significant challenge for modern nuclear theory. At the heart of these efforts are three-nucleon (3N) forces.

Within different ab-initio many-body frameworks, I will discuss the key role 3N forces play in understanding physics at and beyond the oxygen dripline as well as the evolution of shell structure in calcium, including predictions of masses and N=32,34 magic numbers. I then extend this approach to investigate exotic proton-rich nuclei, where 3N forces are important to describe both ground- and excited-state properties.

Throughout the talk I will emphasize the close interplay of this work with ongoing and future experimental efforts.

This seminar is organized within the framework of the ESNT workshop: Radioactive Ion Beam Experiments and Three-Nucleon Forces 31 March-11 April (http://esnt.cea.fr)

Le cafe sera servi 10 minutes avant
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http://irfu.cea.fr/Phocea/Vie_des_labos/Seminaires/index.php