Service de Physique Nucléaire

Séminaire

jeudi 15 novembre 2012 à 11h00

CEA Saclay, Orme des Merisiers, Bât. 703, Salle 135

ATTENTION : JOUR INHABITUEL

CNS Active Target for deuterium induced reactions with high intensity unstable beam at 100-300 MeV/u

Shinsuke Ota

Center for Nuclear Study, University of Tokyo, Japan

To study nuclear-matter property, such as incompressibility and symmetry energy, and electron capture rate in iron-group and heavier nuclei, a gaseous active target operated with deuterium gas is being developed in the Center for Nuclear Study of the University of Tokyo.
The incompressibility and symmetry energy are function of density and asymmetry of the numbers of protons and neutrons (isospin). So far, the incompressibility is determined by measuring the energies of Giant Monopole Resonance (GMR) in stable nuclei, which are excited via inelastic scattering. However, extension of measurements to unstable nuclei is needed for the study of isospin dependence and extraction of symmetry energy.
To deduce the GMR strength, above the particle-decay threshold, we have to perform multipole decomposition analysis, where the forward angle scattering is very important. In the study of electron capture rate via the measurement of Gamow-Teller resonance, the forward-angle scattering is also important.
Gaseous active target enables us to measure such a forward angle measurement in missing mass spectroscopy of unstable nuclei. I will present the design and the basic performance of our active target system and the test experiment with stable nuclei, ^{56}Fe.

Le café sera servi 10 minutes avant

Contact : S.Platchkov@cea.fr Tel : 01.69.08.74.59

http ://irfu-i.cea.fr/Phocea/Vie_des_labos/Seminaires/index.php