

# CENTRE D'ETUDES NUCLÉAIRES DE BORDEAUX-GRADIGNAN

**Vendredi 28 Février 2014**

**à**

**11H00**

*Un café sera servi à partir de 10h45*

**Carme RODRIGUEZ-TAJES**

GANIL, CEA/DSM-CNRS/IN2P3, Caen /

Universidade de Santiago de Compostela, Espagne

## **Transfer reactions in inverse kinematics: An experimental approach for fission investigations**

An innovative technique is proposed to investigate the fission of exotic minor actinides and provide experimental data required by the nuclear-energy data banks. It relies on the use of multi-nucleon transfer reactions and inverse kinematics. Experimental results from an experiment in the VAMOS magnetic spectrometer will be presented, where inelastic and transfer reactions between a  $^{238}\text{U}$  beam and a  $^{12}\text{C}$  target are used for the production of neutron-rich fissioning systems from U to Cm. Isotopic fission-fragment yields are presented, as well as fission probabilities. The latter are discussed on the context of the surrogate-reaction technique. In this perspective, the sharing of excitation energy between the heavy and light transfer partners is investigated by means of gamma-ray spectroscopy of the light partner. A complementary experiment, which is currently under preparation, will also be presented. It aims to improve the characterization of the compound nucleus produced in transfer reactions. The angular momenta populated in the compound nucleus will be investigated by measuring the fission-fragment angular distributions in the MAYA active target. The main features and challenges of this project, which contributes to the scientific case of future active-target systems, will be discussed.

**Salle des Séminaires du CENBG**

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