

CENTRE D'ETUDES NUCLÉAIRES DE
BORDEAUX-GRADIGNAN

Lundi 13 Octobre 2014

à

14H00

Un café sera servi à partir de 13h45

Peter MÖLLER

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**New Calculations of Fission Barriers
and Fission Yields in the
Macroscopic-Microscopic Approach**

During my career much of my work has been devoted to developing the macroscopic-microscopic method in a direction that it can be used to calculate theoretical nuclearstructure data bases for a large number of nuclei across the nuclear chart to an accuracy so that the data bases are useful in, for example, astrophysical studies and nuclear reactor simulations. I will briefly look at some milestones of this effort. However, recently my main focus is fission, which it was also in my Ph. D. thesis.

First I will present calculated barriers for more than 5000 heavy nuclei and discuss how they play out in relation to observed superheavy-element stability and in r-process applications. Then I will turn to studies of fission yields. We have previously benchmarked the Brownian shape motion (BSM) model with respect to experimental data in this region of heavy nuclei, and the encouraging degree of agreement has motivated further development. We are therefore generalizing the BSM model so that it can describe odd-even staggering in the fission yields. I will show some preliminary results from this effort.

Salle des Séminaires du CENBG

Le Haut Vignau - BP 120 - F-33175 Gradignan Cedex