**Département de Physique Nucléaire**

Séminaires du DPhN

Vendredi 20/06/2014, 11:00-12:00

Bat 703, p 45, CEA Saclay, Orme des Merisiers

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## Formation and dynamics of fission fragments

Although the overall time-scale for nuclear fission is long, suggesting a slow process, rapid shape evolution occurs in its later stages near scission. Theoretical prediction of the fission fragments and their characteristics are often based on the assumption that the internal degrees of freedom are equilibrated along the fission path. However, this adiabatic approximation may break down near scission. This is studied for the symmetric fission of fermium isotopes. The non-adiabatic evolution is computed using the time-dependent Hartree-Fock method with a BCS approximation of pairing correlations, starting from an adiabatic configuration where the fragments have acquired their identity. It is shown that dynamics has an important effect on the scission configuration and on the kinetic and excitation energies of the fragments. The vibrational modes of the fragments in the post-scission evolution are also analyzed.

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