

**Service de Physique Nucléaire**  
**SÉMINAIRE**

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**Lundi 26/10/2015, 11h00-12h00**

**CEA Saclay, Orme des Merisiers Bat 703, p 135**

**Nuclear Shape Dynamics as Brownian Motion**

**Jorgen Randrup**

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Recent progress in the theoretical description of nuclear fission will be discussed. Because the nuclear shape dynamics is highly dissipative, the evolution from a compound nucleus towards fission resembles Brownian motion on the multi-dimensional potential-energy landscape. By further exploiting the relatively weak sensitivity to the structure of the dissipation tensor, it is possible to simulate the process as a random walk between those shapes for which the potential energy has been tabulated. This simple approximate procedure, for which no new parameters are needed, yields remarkably accurate fission-fragment mass distributions. The calculations require only very modest computational effort and because the method can readily be applied to the thousands of fissionable nuclei for which suitable five-dimensional potential-energy tabulations already exist, the method presents a powerful novel tool for fission studies.

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Le cafe sera servi 10 minutes avant

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