

Microscopic description of energy partition in fission

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We describe induced fission and how the resulting fission fragment mass distributions depend on the energy of the incoming neutron. The Metropolis walk method is extended to allow predictions of how the available excitation energy at scission is partitioned between heavy and light fission fragments.

From the excitation energy distributions one can deduce how many neutrons that will be emitted from each fragment and how it depends on the energy of the incoming neutron.

Compared to earlier studies, we simulate the full fission process taking into account all different fragments and their departure from equilibrium deformations. For each of the fragments we calculate microscopic level densities by solving pairing equations for billions of excited states. The microscopic level densities are used both in the energy partition as well as in the neutron emission.

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