

„Dynamics of fission in phenomenological models”

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The heavy ions reactions are wonderful playground to investigate various phenomena such as fusion, fission, evaporation of the particles, emission of the gamma-rays and others. The fission dynamics depends on the entrance channel and condition of creation compound nucleus. During de-excitation of the hot rotating nucleus neutrons, charged particles and gamma-rays are emitted. Less probable is induction of the Giant Resonances and their de-excitation.

To describe the reaction mechanism two types of models are adopted, the phenomenological models such as HIPSE (Heavy-Ion-Space Exploration) and/or dynamical models, e.g. based on solving the transport equation of Langevin type in multidimensional space of collective coordinates. The former, taking into account the pre-equilibrium emission of particles, gives usually satisfactory description of the compound nucleus production; while the latter estimates better the evaporation and fission channels.

The presentation gives the short outlook on the recent results in heavy mass region based on both approaches. And specifically some ideas of measurements of simultaneous measurements of fission fragments and GDR strength functions, that will be possible at the future Warsaw cyclotron, will be presented.