

“Influence of the entrance channel dynamics on the evaporation residue formation in reaction of massive nuclei”

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Reaction mechanism in collisions of massive nuclei at the near Coulomb barrier energies is analyzed. Capture and fusion stages of reaction, as well as survival probability of hot compound nucleus strongly depend on peculiarities of entrance channel. Angular momentum distribution of the hot rotating compound nucleus is determined by the mass asymmetry and shell structure, as well as orientation angles of reactant nuclei. We conclude that the side-side collisions of deformed nuclei are favorable to complete fusion. The difference between observed excitation functions of the evaporation residues for the mass symmetric and mass asymmetric reactions leading to the same compound nucleus can be explained by the difference (1) in fusion cross sections and (2) in the survival probability of the hot compound nucleus.

Nov. 2(Thu), 2006 10:00-
RIBF Conf. Hall, RIBF Bldg. 2F

The seminar will be given in English.
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