

Sensitivity of reaction dynamics by analysis of kinetic energy spectra of emitted light particles and formation of evaporation residue nuclei

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Any nuclear reaction between heavy ions occurs and evolves through various modes that depend on specific intrinsic properties of colliding nuclei, but also by various processes that can be involved and that characterize the reaction dynamics to the formation of reaction products.

Some kinds of reactions leading to heavy and superheavy nuclei will be presented and analyzed, and the influences resulting from the assumptions made during the experimental and theoretical procedures on the formation of the final reaction products will be discussed.

It is therefore necessary to use refined procedures in experimental analysis and theoretical calculations in order to obtain reliable results. For this purpose, it would be useful to present experimental and theoretical results by showing variations that they undergo when assumption made to simplify the analysis and calculation are varied or even released.