INFLUENCE OF ANGULAR MOMENTUM ON MASS-TOTAL KINETIC ENERGY DISTRIBUTION OF FRAGMENTS FORMED IN THE ^{24}Mg + ^{232}Th AND ^{48}Ca + ^{208}Pb REACTIONS

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Investigation of the influence of angular momentum and the excitation energy of the compound nucleus on the Mass-Total Kinetic Energy (M-TKE) distribution of fission fragments give important insight into the fission process. The aim of the present work is to study the influence of compound nucleus angular momentum on the M-TKE distributions of fission fragments formed in the ^{24}Mg + ^{232}Th and ^{48}Ca + ^{208}Pb reactions, both the reactions leading to the formation of ^{256}No* compound nuclei.

The experiments were carried out using the U400 cyclotron at the Flerov Laboratory of Nuclear Reactions, Dubna, Russia. Thin targets of ^{232}Th and ^{208}Pb bombarded with 125 - 181 MeV ^{24}Mg and 208 - 281 MeV ^{48}Ca beams, respectively, to populate the ^{256}No* compound nuclei at different excitation energies. The mass-energy distributions of binary reaction products were measured by the double-arm time-of-flight (ToF-ToF) spectrometer CORSET [1]. In order to understand the influence of angular momentum of the compound nucleus on the M-TKE distribution, a detailed analysis has been carried out for the obtained M-TKE distributions.

1. E. M. Kozulin et al., Instrum. Exp. Tech. 51, 44 (2008).