

MECHANISM OF N/Z EQUILIBRATION IN ^{58}Ni , $^{40}\text{Ca} + ^{208}\text{Pb}$ REACTIONS AT NEAR-BARRIER ENERGIES

Saiko V.V.^{1,2}, Karpov A.V.^{1,2}

¹ *Flerov Laboratory of Nuclear Reactions, Joint Institute for Nuclear Research, Dubna, Russia;* ² *Dubna State University, Dubna, Russia*
E-mail: saiko@jinr.ru

An essential feature of ^{58}Ni , $^{40}\text{Ca} + ^{208}\text{Pb}$ reactions is the significant difference in the N/Z ratio of the projectile and target. It leads to the nucleon redistribution at the initial stage of reaction called N/Z equilibration or isospin relaxation. This particular feature of dynamics of collisions of heavy nuclei affects the N/Z values of formed fragments and can be observed in the isotopic distributions of the multinucleon transfer (MNT) reaction products.

Investigation of the N/Z equilibration process in the MNT reactions was done on the basis of Langevin-type dynamical model [1]. It allow one to achieve a good agreement in complex description of experimentally observable characteristics of the MNT reactions such as energy, angular and mass distributions of the binary products [2].

The ^{58}Ni , $^{64}\text{Ni} + ^{208}\text{Pb}$ reactions have been compared in order to define better system for production of heavy nuclides. An influence of the neutron-deficient projectile or the N/Z equilibration on isotopic yields in these collisions are discussed.

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