

Modeling of isotopic scaling and target ratio in transport statistical approach

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Peripheral collisions at Fermi energies provide the opportunity not only to obtain a huge amount of new isotopes, sometimes not existing in nature, but to get better understanding of mechanism of nuclear reactions and the essential quantities of nuclear matter, such as chemical potentials, density and intrinsic energy. In this report the calculations of isotopic scaling and target ratios for the reactions with $^{48/40}\text{Ca}$ and $^{64/56}\text{Ni}$ beams colliding with the ^{181}Ta and ^9Be targets at energy 140 Mev per nucleon fulfilled in modified transport-statistical approach in comparison with the experimental data are presented. The comparison with the empirical parametrization of fragmentation cross sections model, its modified version FRACS and Abrasion-Ablation model calculations is presented. The differences of the approaches are discussed and the importance of taking into account the impact parameter characteristic and the temperature dependence are highlighted.

Список источников

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2. T. I. Mikhailova, B. Erdemchimeg, Yu. M. Sereda, Bull. Russ. Acad. Sci. **89**, 1216 (2025).