

Isospin influence on the decay modes of systems produced in the $78,86\text{Kr}+40,48\text{Ca}$ reactions at 10AMeV

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The results of the analysis of the experimental data of the collisions $78\text{Kr}+40\text{Ca}$ and $86\text{Kr}+48\text{Ca}$ at 10AMeV are presented. The experiment was performed at the INFN Laboratori Nazionali del Sud (LNS) in Catania with the beams delivered by the Superconductive Cyclotron and the 4π multidetector CHIMERA.

The composite systems formed in these reactions are different for 16 neutrons, the maximum value possible with stable beams for these systems; the various disintegration paths and in particular the isospin effects on the decay modes of the two produced systems are studied. The neutron richness of the composite nucleus is in fact expected to play a crucial role in the competition between various de-excitation channels, thus providing information about fundamental nuclear quantities such as level density, fission barrier and viscosity.

With the purpose to investigate systems with an higher ratio N/Z , a LOI for the use of RIBs delivered by the facility SPES was presented: the reactions $88-94\text{Kr} + 40-48\text{Ca}$ at 10 AMeV will be studied for a comparison with the results obtained with stable beams.

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