

Decay competition for IMF produced in the collisions $^{78}\text{Kr}+^{40}\text{Ca}$ and $^{86}\text{Kr}+^{48}\text{Ca}$ at 10 A·MeV

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De-excitation modes of compound systems ^{118}Ba and ^{134}Ba , produced respectively in the $^{78}\text{Kr}+^{40}\text{Ca}$ and $^{86}\text{Kr}+^{48}\text{Ca}$ collisions at 10 A·MeV, are investigated. In particular, the competition between the various disintegration decay path of medium mass compound nuclei, also referred as Intermediate Mass Fragments (IMF), formed by fusion processes and the isospin dependence of the decay process are studied. Data were taken at the INFN-Laboratori Nazionali del Sud (LNS) by using the CHIMERA array and complement a former experiment performed at GANIL where the same mechanisms were studied at lower excitation energies [1], [2]. First results show evident staggering effects in the Z distributions, as well as different isotopic composition and enrichment for the reaction products in the two systems [3], [4] and [5]. Absolute cross sections calculations of the reaction products are still in progress, and this outcome could shed light on the isospin influence on the reaction mechanism and fragments production. The outcome are interpreted on the basis of dynamical-model calculations.

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[2] G. Ademard et al, Phys. Rev. C 83, 054619 (2011)

[3] S. Pirrone et al., EPJ Web of Conferences 17, 16010 (2011)

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[5] M. La Commara et al., EPJ Web of Conferences 11, 00022 (2012)