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Isospin dynamics and nuclear dipolar degree of freedom

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One of the most important and intriguing problems in studying Heavy Ion collisions at the Fermi energies is to recover information directly linked to the dynamical stage of the reaction without the blurring effects of later stages associated the statistical decay of the hot source. In this case the obtained results can give clear information on the effective interactions governing the dynamics In the last decades [1-3] it has been shown that the time derivative of the average total dipole signal obtained by measuring the charges Zi and velocities of all the charged particles produced in an heavy ion collision does not depend on the statistical decay processes. It rather depends on the dynamics of the isospin equilibration processes between ions having large differences in the charge/mass ratios.
In this contribution we illustrate the results of a first attempt to perform these kind of studies on the system 48Ca+27Al at 40 MeV/A performed with the multi-detector CHIMERA [4-5] at the LNS.
These investigations continue with a new campaign of measurements taking advantage of the improved performances of the CHIMERA detector.

Selected session

Nuclear Structure, Spectroscopy, and Dynamics

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