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Nuclear equation-of-state studies with INDRA-FAZIA: status and perspectives

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In the framework of heavy ion collisions, isospin transport phenomena can be used as a tool to gather information on the properties of nuclear matter far from equilibrium conditions. The INDRA-FAZIA apparatus, operating in GANIL, is particularly well suited to investigate such kind of phenomena; it exploits the best characteristics of FAZIA (covering the forward polar angles and providing isotopic identification also for heavy quasiprojectile-like fragments) and INDRA (providing a large angular coverage).

In this talk, the most recent results from the INDRA-FAZIA apparatus will be presented, with a special focus on its first experiment, carried out in 2019. Coherent indications of the isospin transport effects have been obtained by studying the neutron content of both light and heavy fragments belonging to the quasiprojectile phase space. The setup performance also allowed an in-depth analysis of the quasiprojectile breakup channel, leading to novel results that add valuable information for a comprehensive view of such process: AMD calculations have been used to extract the information on the relevant timescales of the interaction process, thus helping with the interpretation of the new experimental observations. An overview of the future perspectives offered by the apparatus will be also given.

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