



ID de Contribution: 29

Type: Oral Presentation

Study of the isospin transport phenomena in the $^{58}\text{Ni}+^{58}\text{Ni}$ reaction at 32, 52 and 74 AMeV with the FAZIA-INDRA apparatus.

mercredi 27 septembre 2023 12:40 (20 minutes)

Heavy-ion collisions at Fermi energies allow to investigate various phenomena, such as the isospin transport phenomena. These can be interpreted in the framework of the Nuclear Equation of State (NEoS), which describes the properties of nuclear matter in terms of thermodynamic variables.

In this talk we will show the preliminary results of the study of the $^{58}\text{Ni}+^{58}\text{Ni}$ reaction at three different energies 32, 52 and 74 AMeV. These reactions were measured during the E789 and E818 experiments performed with FAZIA-INDRA apparatus [1,2] at GANIL (Caen, France). The large angular coverage of the coupled detectors (2° - 176°) allows the characterization of events. Moreover FAZIA, covering the forward polar angles (1.5° - 14°), provides an optimal charge and mass identification of the fragments (up to $Z=25$) [3].

The $^{58}\text{Ni}+^{58}\text{Ni}$ reaction was measured at 32 and 52 AMeV in 2019 and partially already analysed [4], while the set of measurements was completed during the E818 experiment (May 2022) with the same reaction at 74 AMeV. These measurements are particularly interesting because they offer the possibility to investigate the isospin transport phenomena [5] in a wide energy range. Moreover, the measure at 74 AMeV allows to study how the cross section of the reaction channels changes at high energy where the vaporization channel could be important.

References

- [1] R. Bougault et al., Eur. Phys. J. A 50, 47 (2014)
- [2] J. Pouthas et al., Nucl. Instr. and Meth. in Phys. Res. A 357, 418 (1995)
- [3] N. Le Neindre et al., Nucl. Instr. Meth. A 701, 145–152 (2013)
- [4] C. Ciampi et al., Phys. Rev. C 106, 024603 (2022)
- [5] S. Piantelli et al., Phys. Rev. C 103, 014603 (2021)

Auteur principal: BALDESI, Lucia (Dipartimento di Fisica e Astronomia Università di Firenze , INFN Sezione di Firenze)

Orateur: BALDESI, Lucia (Dipartimento di Fisica e Astronomia Università di Firenze , INFN Sezione di Firenze)

Classification de Session: Heavy ion collisions

Classification de thématique: Nuclear Dynamics