



ID de Contribution: 3

Type: **Regular talk (YP)**

Experimental study of the symmetry energy from 40,48 Ca+ 40,48 Ca reactions at 35 AMeV

mercredi 24 novembre 2021 11:30 (25 minutes)

We investigated the possibility to probe the symmetry energy term of the nuclear equation of state with isoscaling observables from 40,48 Ca+ 40,48 Ca reactions at 35 AMeV . Data were obtained using the unique coupling of the VAMOS high acceptance spectrometer and the 4 π INDRA detector. This required a precise study of the trajectory reconstruction in the spectrometer focal plane along with the development of an event normalization procedure. The spectrometer allowed high resolution measurement of charge, mass and velocity of the cold projectile-like fragment (PLF), while the INDRA detector measured almost all remaining charged particles. The detection of the PLF in coincidence with light charged particles (LCP) allows the reconstruction of the mass, charge and excitation energy of the associated initial quasi-projectile nuclei (QP), as well as the extraction of apparent temperatures. Comparisons with filtered AMD model followed by the the statistical decay code GEMINI++ lead to the conclusion that for such reactions, the reconstruction of the primary source helps to apply the isoscaling method. The resulting experimental symmetry energy term C_{sym} is shown to decrease with increasing excitation energy or increase with increasing charge of the reconstructed QP. This may reflect a density dependence of the nuclear symmetry energy and the effect of surface contribution.

Auteur principal: Dr FABLE, Quentin (L2it, CNRS/IN2P3, France)

Orateur: Dr FABLE, Quentin (L2it, CNRS/IN2P3, France)

Classification de Session: Isospin Effects and EoS in nuclear reactions

Classification de thématique: Isospin Effects and EoS in nuclear reactions: Experimental study of the symmetry energy from 40,48 Ca+ 40,48 Ca reactions at 35 AMeV