

Isospin transport in heavy-ion reactions around the Fermi energy domain

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One of the most exciting challenges in modern nuclear physics and astrophysics is to understand the behavior of nuclear matter under extreme conditions. Heavy ion reactions around the Fermi energy domain provide a unique opportunity to enrich our knowledge about the nuclear equation of state (EoS) at sub-saturation densities [1]. Isospin transport in heavy ion reactions around the Fermi energy domain is directly correlated to the density dependence of the symmetry energy [2]. Recently Boltzmann-Uehling-Uhlenbeck transport model (BUU) of heavy ion reactions was upgraded by including a meta-modelling empirical equation of state based on a density development around saturation [3]. Based on this BUU transport model study, the sensitivity of evaporation residue observables, isospin transport ratio of quasi-projectile and free nucleons to the density dependence of the symmetry energy [3,4] will be discussed.

References:

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Presenter: MALLIK, Swagata (VECC)

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