Measuring the density dependence of the symmetry energy through emitted tritons and 3Helium.

Michael Youngs

NSCL, Michigan State University, east-Lansing, MI

ABSTRACT

The nuclear symmetry energy affects many different aspects of nuclear structure, astrophysics and reactions. The spectral ratio of neutrons to protons from central heavy ion collisions is an observable that is sensitive to the symmetry energy at subsaturation densities, but is difficult to measure experimentally. A similar ratio using the mirror nuclei t/3He should display a similar sensitivity to the symmetry energy. Results of t/3He ratios from symmetric collisions of 112,124Sn+112,124Sn at E=50 and 120 MeV/nucleon will be discussed. These results will also be compared to theoretical predictions in order to constrain the density dependence of the symmetry energy.