

## Laboratory Probes of the Neutron-Matter Equation of State

*Tuesday, 29 May 2018 14:00 (20 minutes)*

The nuclear Equation of State (EoS) is central to the understanding of the matter found in neutron stars and in explosive stellar environments. This includes the dynamics in neutron star mergers or core collapse supernovae in which many of the heavy elements are formed. Such environments are often neutron-rich and their description requires extrapolating the properties of neutron-rich matter from that of symmetric matter containing equal numbers of neutrons and protons. This extrapolation is governed by the nuclear symmetry energy, which can be defined to be the difference between the EoS of neutron matter and that of symmetric matter. In this talk, I will discuss the experimental probes using heavy ion collisions with different isospin reactions to explore the symmetry energy from sub-normal to supra-normal density and its implication to the tidal deformability in the neutron star merger.

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