

Probing High-Density Symmetry Energy with Heavy-Ion Reactions

Abstract: To pin down the Equation of State (EOS) of neutron-rich nucleonic matter has long been a major science driver for both nuclear physics and astrophysics. Nuclear symmetry energy encoding the energy cost of converting protons into neutrons in nuclear medium has been the most uncertain part of the EOS of neutron-rich nucleonic matter, especially at high densities. The magnitude and density dependence of nuclear symmetry energy determine the radii and cooling rates of neutron stars as well as the strain amplitude and frequencies of gravitational waves from spiraling neutron star binaries. Heavy-ion reactions provide a unique means in terrestrial laboratories to probe the symmetry energy of neutron-rich matter. In this talk, I will discuss the main issues concerning the high-density symmetry energy, its astrophysical impacts and examples of current efforts to constrain it both experimentally and theoretically.

April 21, 2017

3:30pm

50 Years of beam Seminar Series

Dr. Bao-An Li

Regents' Professor
Department of Physics and
Astronomy
Texas A&M University-Commerce
Commerce, Texas

**Cyclotron Institute
Room 228**

**Refreshments will be served
at 3:10pm**