Jorge Piekarwica Florida State University – Colloquium
10/18/2018

Nuclear Astrophysics in the new era of multi-messenger Astronomy

One of the overarching questions animating nuclear physics today is "How does subatomic matter organize itself". Neutron stars are cosmic laboratories uniquely poised to answer this fundamental question. The historical first detection of a binary neutron star merger by the LIGO-Virgo collaboration is providing fundamental new insights into the astrophysical site for the r-process and on the nature of neutron-rich matter. In turn, the study of exotic atomic nuclei at FRIB will elucidate the underlying dynamics of the r-process and the composition of the neutron-star crust. In this presentation I will discuss how this synergy — in combination with nuclear physics insights, modern theoretical approaches, and powerful statistical ideas — can pave the way to understanding these fascinating objects.