"From nucleons to nuclei and neutron stars (topological soliton approach)"

by Ulugbek Yakhshiev (Inha University)

Time and Date: 10:00-12:00, May 12th, 2022

Registration: https://us02web.zoom.us/meeting/register/tZUtc-qrpj0jEtNYQH53LYEoahu5wepTjCm2

▶ Abstract

We discuss the medium modifications of the different chiral soliton approaches to study the nucleon properties in nuclear matter. The medium modifications are achieved by employing the pion-nucleus scattering data, the pionic atoms properties at low densities and by accounting the properties of nuclear matter near its saturation point. The medium modified models were used to study the structure changes of the nucleons in nuclear matter in terms of the electromagnetic charge distributions and the energy momentum tensor form factors. In particular, we discuss 2D tomography of the nucleons in free space and in nuclear matter. We also discuss nuclear matter properties by analyzing the equations of state in a broad range of densities and discuss the applications of the approach to the neutron star properties. Finally, we discuss the applications of the approach to the studies of nucleon properties in finite nuclei by consider the finite nuclei properties.

Contact： Yusuke Tanimura (E-mail: tanimura@nucl.phys.tohoku.ac.jp)