Contribution ID: **82** Type: **not specified**

Properties of kaon condensation in hyperon-mixed matter with three-baryon repulsion

Tuesday, October 8, 2024 12:10 PM (20 minutes)

Possibility of kaon-condensed phase (KC) in hyperon-mixed matter is considered in high-density multi-strangeness system, which may be realized in neutron stars.
The interaction model is based on effective chiral Lagrangian for kaon-baryon and kaon-kaon interactions, being combined with the relativistic mean-field theory for two-body baryon-baryon (B-B) interaction. In addition, universal three-baryon repulsive force (UTBR) and three-nucleon attractive force (TNA) are phenomenologically introduced, where relevant parameters are fixed to satisfy the saturation properties of symmetric nuclear matter and causality condition.
It is shown that the equation of state (EOS) with KC in hyperon-mixed matter is stiff enough to be consistent with recent observations of massive neutron stars.
The quark condensates in the presence of KC are also obtained as a function of baryon density, and a role of KC on chiral restoration in the course of hadron-quark transition is discussed.

Presenter: MUTO, Takumi (Chiba Institute of Technology)