

Speaker: **Takumi Muto** (Chiba Institute of Technology)

Title: **Equation of state with kaon condensation in hyperon-mixed matter and necessity of three-body forces for baryons**

Date and Time: 2019/Dec/16 Monday 10:00-11:30

Venue: KEK Tokai Building #1, room 227

Abstract:

It has been a longstanding problem whether kaon condensation is realized in high-density matter. We have investigated possible coexistence of kaon condensates and hyperon-mixed matter as multi-strangeness system on the basis of chiral symmetry for kaon(K)-baryon(B) and K-K interactions, combined with the relativistic mean field theory for B-B interaction.

From the viewpoint that both kaons and hyperons should naturally appear in high densities, it is shown that the three-body forces (TBR for repulsion, TBA for attraction) for baryons should be introduced phenomenologically in order to obtain a stiff equation of state (EOS) which is consistent with recent observations of massive neutron stars. We further discuss the effect of the isovector part of the TBA on the radius of neutron stars and rapid neutrino emission mechanisms in kaon condensates and their effects on thermal evolution of neutron stars.

Contact: If you have any question on this, please ask Dr. Dote (KEK), Prof. Morimatsu (KEK), Dr. Gubler (JAEA), and Dr. Maruyama (JAEA).