

785th ASRC Seminar

Date: Mar. 25 (Wed), 13:30~15:00

Location: Lobby (2nd floor), ASRC bldg.

Speaker: Dr. Cheng-Jun Xia

(Zhejiang Univ. Ningbo Inst. of Tech., China)

Title: Strangeness and Δ resonance
in compact stars with relativistic-
mean-field models

Abstract:

We explore the effects of strangeness and Δ resonance in baryonic matter and compact stars within the relativistic-mean-field models. The parameter set PKDD is adopted for N-N interaction, parameters fixed based on finite hypernuclei and neutron stars are taken for the hyperon-meson couplings, and the universal baryon-meson coupling scheme is adopted for the Δ -meson couplings. In light of the recent observations of GW170817 with the dimensionless combined tidal deformability $197 \leq \Lambda \leq 720$, we find it is essential to include the Δ resonances in compact stars, and small Δ - ρ coupling $g_{\rho\Delta}$ is favored if the mass of PSR J2215+5135 (about $2.27 M_{\odot}$) is confirmed.

[1] *Phys. Rev. D* **99**, 023004 (2019)

[2] *Phys. Rev. C* **98**, 024316 (2018)

[3] *Chin. Phys. C* **42**, 025101 (2018)

<Contact>

Toshiki Maruyama (81-5457)

Advanced Science Research Center