

Quantification of the flavor diagonal hadronic CP violation

Wednesday, 24 September 2025 16:30 (30 minutes)

The flavor diagonal CP violation of elementary particle physics contributes to the atomic, nuclear, and nucleon electric dipole moments (EDMs), T-violating neutron scattering, and to the angular correlations of beta decay. However, its extraction from experimental data has for long been obstructed by the nonperturbative physics of quantum chromodynamics. Quite recently, there were significant progresses in this subject, notably the resolution of the strong CP problem and the quantification of hadron level CP violation such as the contributions of the quark chromo-EDM and Weinberg operator (CP violating three-gluon interaction) to the CP-odd hadronic interactions. We are therefore almost attaining the quantification era of the CP violating hadronic interaction in the leading order of standard model effective field theory. In this talk, we summarize the current attempt to quantify the hadronic CP violation contribution and with a particular focus on the enhancement mechanisms.

Primary author: YAMANAKA, Nodoka (Tohoku University)

Presenter: YAMANAKA, Nodoka (Tohoku University)

Session Classification: Scientific Program