

Connecting low to high: Neutrino non-standard interactions and EFTs

Due to the null observation of any definite signals of new physics or any significant deviation from the standard model prediction since the Higgs discovery, searching for new physics model independently in the effective field theory (EFT) framework has become a popular alternative. In this talk, I shall first review the connection between neutrino NSIs in the quantum mechanical formalism and that in quantum field theory. I will then present our recent work on utilizing the low-energy neutrino oscillation (both accelerator and reactor) experiment, the COHERENT experiment, and precision cosmology to connect neutrino non-standard interactions with the high-energy UV physics above the weak scale in the EFT framework.

Working group

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