

Search for sterile neutrino with light gauge interactions: recasting collider, beam-dump, and neutrino telescope searches

Monday 9 November 2020 20:40 (10 minutes)

We investigate features of the sterile neutrinos in the presence of a light gauge boson X that couples to the neutrino sector. The novel bounds on the active-sterile neutrino mixings $|U_{\ell 4}|^2$, especially for muon and tau flavors ($l = \mu, \tau$), from various collider and fixed target experiments in intensity frontiers are explored. Also, taking into account the additional decay channel of the sterile neutrino into a light gauge boson ($\nu_4 \rightarrow \nu_\ell e^+ e^-$), we explore and constrain a parameter space for low energy excess in neutrino oscillation experiments.

Authors: JHO, Yongsoo; KO, pyungwon (Korea Inst. for Advanced Study (KIAS)); Prof. PARK, Seong Chan (Yonsei University); Mr KIM, Jongkuk

Presenter: JHO, Yongsoo

Session Classification: Long-Lived Particles