

AT Seminar - Sterile neutrinos with IceCube Neutrino Observatory

2017-02-10 - [Andrii Terliuk](#)

IceCube Neutrino Observatory is the first cubic kilometer Cherenkov neutrino detector. It is designed to detect atmospheric and astrophysical neutrinos at energies of about 10 GeV and above. Sterile neutrinos are hypothetical neutrino species that can explain tension seen by some accelerator, reactor and early radio-chemical neutrino experiments. They do not interact via the standard weak interactions, but can be mixed with the three active sterile neutrinos. Such mixing would leave an imprint on the atmospheric muon neutrino flux measured in IceCube. An overview of sterile neutrino searches for light ($\sim 1 \text{ eV}^2$) sterile neutrinos using the IceCube Neutrino Observatory will be discussed in the talk.