



Contribution ID: 1022

Type: **Parallel Talk**

Impact of heavy sterile neutrinos on the triple Higgs coupling

Saturday, 8 July 2017 11:45 (15 minutes)

The discovery of neutrino oscillations calls for an extension of the Standard Model that would generate neutrino masses and mixing. One of the simplest possibilities is the addition of fermionic gauge singlets or sterile neutrinos. TeV-scale realisations of this idea lead to a very rich phenomenology due to the mixing of the new fermions with the left-handed neutrinos of the SM and the large Higgs-neutrino coupling. In a first study, we showed in a simplified 3+1 model with Dirac neutrinos that loops with a heavy neutrino can induce large corrections, up to 30% of the SM one-loop value. These effects are potentially larger in low-scale seesaw models, as we showed by considering the inverse seesaw. I will discuss how fermionic singlets induce large corrections to the triple Higgs coupling and how they can be used to probe neutrino mass models in a regime otherwise difficult to access.

Experimental Collaboration

Primary authors: Dr WEILAND, Cedric (IPPP Durham); Dr BAGLIO, Julien (University of Tübingen)

Presenter: Dr WEILAND, Cedric (IPPP Durham)

Session Classification: Neutrino physics

Track Classification: Neutrino Physics