



ID de Contribution: 126

Type: **Ordinary**

Impact of TeV-scale sterile neutrinos on precision low-energy observables

vendredi 21 mars 2014 10:15 (15 minutes)

We study the impact of TeV-scale sterile neutrinos on electro-weak precision observables and lepton number and flavour violating decays in the framework of a type-I see-saw extension of the Standard Model. At tree level sterile neutrinos manifest themselves via non-unitarity of the PMNS matrix and at one-loop level they modify the oblique radiative corrections. We derive explicit formulae for the S,T,U parameters in terms of the neutrino masses and mixings and perform a numerical fit to the electro-weak observables. We find regions of parameter space with a sizable active-sterile mixing which provide a better over-all fit compared to the case where the mixing is negligible. Specifically we find improvements of the invisible Z-decay width, the charged-to-neutral-current ratio for neutrino scattering experiments and of the deviation of the W boson mass from the theoretical expectation.

Auteur principal: Dr KARTAVTSEV, Alexander (Max-Planck Institut für Physik)

Co-auteurs: Prof. AKHMEDOV, Evgeny (Max-Planck-Institute for Nuclear Physics); M. SMIRNOV, Juri (Max-Planck-Institute for Nuclear Physics); Mme MICHAELS, Lisa (Max-Planck-Institute for Nuclear Physics); Prof. LINDNER, Manfred (Max-Planck-Institute for Nuclear Physics)

Orateur: Dr KARTAVTSEV, Alexander (Max-Planck Institut für Physik)

Classification de Session: Beyond the Standard Model

Classification de thématique: Theory