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Search for heavy neutrinos and charged lepton flavour violation processes at CMS

Tuesday, 26 September 2017 14:30 (30 minutes)

In the standard model (SM), charged lepton flavour violation (LFV) induced by neutrino oscillations is extremely suppressed. However extensions of the SM may enhance LFV processes to levels observable at the LHC. The talk will present the latest results on searches for heavy neutrinos and charged LFV processes performed by the CMS experiment at the CERN LHC collider. The searches are based on the analyses of proton-proton collision data collected in 2015 and 2016 at 13 TeV and corresponding to an integrated luminosity up to 36/fb. First, an update of the search for LFV decays of the H boson to mu-tau and e-tau finale states will be presented, based on the full 2016 dataset. These analyses superseed the ones performed on the 8 TeV data (collected in 2012) where a 2.4 sigma excess was observed in the H to muon-tau decay channel. A search for heavy resonances decaying to an electron and a muon in the final state will be detailed. Finally, results of the searches for a heavy neutrino in various final state topologies will be summarized.

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