SEARCH FOR LEPTON FLAVOR VIOLATING DECAYS OF STANDARD MODEL HIGGS TO A MUON AND A TAU LEPTON OR TO AN ELECTRON AND A TAU LEPTON

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by

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Abstract

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This dissertation presents searches for Lepton Flavor Violating decay of the Standard Model Higgs Boson (H) into a muon and a tau lepton or to an electron and a tau lepton. Data collected by the CMS detector in 2016-2018, in proton-proton collisions at the LHC, at a center-of-mass energy of 13 TeV was used to perform the search. Observed (expected) upper limits on the branching fraction of H decaying into a muon and a tau lepton, $\mathcal{B}(\mathrm{H} \to \mu\tau)$, was set at $XX(0.13)$ % at 95% CL and branching fraction of H decaying into an electron and a tau lepton, $\mathcal{B}(\mathrm{H} \to \mathrm{e}\tau)$, was set at $XX(0.15)$ % at 95% CL. These are the most stringent limits set on these processes till date.

Numbers indicate which to produce first in schedule

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