

Searching for lepton-flavour-violating decays of the Higgs boson with the ATLAS detector

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The quest for lepton-flavor-violating processes at the LHC represents one of the key searches for new physics beyond the Standard Model (SM). We present a search for Higgs boson decays into a tau lepton and either an electron or a muon. The analysis uses data from proton-proton collisions at the LHC at $\sqrt{s} = 13$ TeV, collected by the ATLAS detector and corresponding to an integrated luminosity of 36.1 fb^{-1} . No significant excess of events was found over the SM expectation and upper limits at 95% CL were placed on the branching ratios $\mathcal{B}(H \rightarrow e\tau)$ and $\mathcal{B}(H \rightarrow \mu\tau)$ of 0.47% and 0.28%, respectively. We conclude with a brief overview of an ongoing analysis of a larger data set with more sophisticated techniques that is expected to yield improved results.

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