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Search for the Lepton Flavor Violating Decays $Z \rightarrow e\tau$ and $Z \rightarrow \mu\tau$ with the ATLAS Detector

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Abstract

The violation of Lepton Flavor conservation in the charged leptons sector is a clear signal for Physics beyond the Standard Model, and it can be searched for in decays of the Z boson at the LHC.

In this contribution, searches for Z decaying into a tau and a light lepton at the ATLAS detector are presented. The searches are performed with a data sample of proton-proton collisions at a center-of-mass energy of 13 TeV with an integrated luminosity of 36.1 fb^{-1} . In the absence of a statistically significant excess of events above the expected background, upper limits on the branching ratios of $B(Z \rightarrow e\tau) < 5.8 \times 10^{-5}$ and $B(Z \rightarrow \mu\tau) < 2.4 \times 10^{-5}$ are set at the 95% confidence level.