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Searches for exotic decays of the Higgs boson with the ATLAS detector

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Exotic decays of the Higgs boson provide a unique window for the discovery of new physics, as the Higgs boson may couple to hidden-sector states that do not interact under the Standard Model gauge transformations. Models predicting exotic Higgs boson decays to pseudoscalars can explain the galactic centre gamma-ray excess, if the additional pseudoscalar acts as the dark matter mediator. In addition, theories beyond the Standard Model may predict lepton-flavor violating (LFV) decays of the Higgs boson. This talk presents recent ATLAS searches for decays of the 125 GeV Higgs boson to new particles, and searches for LFV decays of the Higgs boson. These searches use LHC collision data at sqrt(s) = 13 TeV collected by the ATLAS experiment in Run 2.

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Collaboration / Activity

ATLAS

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