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

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Exotic and rare 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. This talk presents recent ATLAS searches for decays of the 125 GeV Higgs boson to new particles, and searches for rare decays of the Higgs boson where enhanced rates would be a sign of new physics. These searches use LHC collision data at $\sqrt{s} = 13$ TeV collected by the ATLAS experiment in Run 2.

Authors: ATLAS COLLABORATION; RIU, Imma (IFAE Barcelona (ES))

Presenter: HAMANO, Kenji (University of Victoria (CA))

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