

XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



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

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Rare and exotic decays of the Higgs boson provide a unique window for the discovery of new physics, as the Higgs boson may couple to leptons in flavour violating or otherwise anomalous ways, or to hidden-sector states that do not interact under the Standard Model gauge transformations. This talk summarizes recent ATLAS searches for unexpected decays of the 125 GeV Higgs boson: enhanced rates of dimuon decay, decay to two different charged leptons, and decay to new light bosons, $H \rightarrow a\bar{a}$, where the a -bosons decay to various final states. These searches use LHC collision data at $\sqrt{s} = 13$ TeV collected by the ATLAS experiment in Run 2.

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