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Search for rare processes and lepton-flavour violating decays of Higgs boson at the ATLAS experiment

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The Standard Model predicts several rare Higgs boson processes, including decays into a Z boson and a photon, a low-mass lepton pair and a photon, or a meson and a photon. Observing these rare decays would offer new and complementary insights into the Higgs boson's coupling structure beyond the more commonly studied channels. In addition, searches for lepton-flavor-violating decays of the Higgs boson are performed, where any observation would provide unambiguous evidence of physics beyond the Standard Model. This talk presents several recent results from the ATLAS experiment based on proton-proton collision data collected in Run2 at sqrt(s) = 13 TeV, with the inclusion of available Run 3 results where relevant

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