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Search for SM H→μμ production in pp collisions with the ATLAS detector at the LHC

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The detection of the SM H→μμ decay is important to study the Higgs boson Yukawa couplings to the 2nd generation fermions. Discovering the signal of Higgs boson decay to dimuon is extremely challenging due to the small decay branching fraction (2.2x10-4) and very large irreducible background from Drell-Yan production at the LHC. The search for the H→μμ decay has been a high profile analysis in Higgs physics study program. This poster presents the latest search method and results at the time of the conference. Using the combined data sets from LHC Run 1 to Run 2, we present the limit on the signal strength of H→μμ.

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