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Search for SM and MSSM dimuon Higgs decay channel with CMS

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The search for the Higgs boson dimuon decay in standard model (SM) and its minimal supersymmetric extension (MSSM) based on the proton-proton collision data collected with the CMS detector at LHC is presented. To enhance the sensitivity of the search, events are categorised according to different production mechanisms and the dimuon invariant mass. Upper limits on the production cross section at 95% confidence level are reported for Higgs bosons masses in the range from 120 to 150 GeV for the SM search while for the MSSM case the mass range is extended from 115 to 300 GeV. An independent model search in the dimuon final state is also presented. The limits in the independent model search cover the mass range from 115 GeV to 500 GeV.

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