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Search for the Standard Model Higgs Boson Decaying to $\mu^+\mu^-$ in pp Collisions at $\sqrt{s} = 7$ and 8 TeV with the CMS Detector JUSTIN HUGON, University of Florida, CMS COLLABORATION — A search for the standard model Higgs boson in the rare $\mu^+\mu^-$ decay channel is presented. The data samples, recorded by the CMS experiment at the LHC, correspond to integrated luminosities of 5.0 ± 0.1 fb^{-1} at 7 TeV center-of-mass energy and of 19.7 ± 0.5 fb^{-1} at 8 TeV. To enhance the Higgs signal over the dominant Drell-Yan background, the events are categorized by topologies corresponding to different production processes. Upper limits on the production rate, with respect to the Standard Model prediction, are reported at the 95% confidence level for Higgs boson masses in the range from 120 to 150 GeV/c^2.

Justin Hugon
University of Florida

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