Search for the standard model Higgs boson decaying to two muons in pp collisions at center-of-mass energy at 13 TeV XUNWU ZUO, ANDREW CARNES, ANDREW BRINKERHOFF, PIERLUIGI BORTIGNON, DIMITRI BOURILKOV, SERGEI GLEYZER, DARIN ACOSTA, University of Florida, CMS COLLABORATION — A search for the standard model Higgs boson decaying to two muons is presented. The analysis is conducted using data recorded by the CMS experiment at the LHC in the 2016 at a center-of-mass energy of 13TeV, corresponding to an integrated luminosity of 35.9 fb^{-1}. Limits are set on the cross section times branching fraction of the Higgs boson decaying to two muons for mass hypotheses between 120 and 130 GeV. For a Higgs boson with a mass of 125 GeV decaying to two muons,the 95% confidence level observed (expected) upper limit on the production rate is found to be 2.64(2.08) times the standard model value. The combination with data recoded at center-of- mass energies of 7 and 8 TeV yields a 95% confidence level observed (expected) upper limit of 2.64(1.89) times the standard model value. This corresponds to an upper limit on the Higgs boson branching fraction to muons of 5.7*10^{-4}, assuming standard model production cross sections.

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