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Evidence for the Higgs boson decay to a bottom quark-antiquark pair SEAN-JIUN WANG, Univ of Florida - Gainesville, COMPACT MUON SOLENOID (CMS) COLLABORATION — Evidence for the standard model Higgs boson decay to a bottom quark-antiquark pair is presented. The search for the $H \to b\bar{b}$ decay was performed for the following processes where the Higgs boson is produced in association with an electroweak vector boson: $Z(\nu\nu)H$, $W(\mu\nu)H$, $W(e\nu)H$, $Z(\mu\mu)H$, $Z(ee)H$. The analyzed data was recorded by the CMS experiment at the LHC during Run 2 in 2016, and corresponds to an integrated luminosity of 35.9 fb^{-1} at $\sqrt{s} = 13$ TeV. An excess of events is observed in data with a significance of 3.3 standard deviations and a signal strength of 1.2 ± 0.4 relative to the SM Higgs boson production. The combnation of these results with the similar Run 1 analysis yields a significance of 3.8 standard deviations and a signal strength of 1.06 ± 0.3.

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