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Study of VBF production followed by H->bb decay at CMS

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A measurement of the Higgs boson production via vector boson fusion (VBF) and its decay into a bottom quark-antiquark pair is presented using proton-proton collision data recorded by the CMS experiment at center-of mass energy of 13 TeV and corresponding to an integrated luminosity of 91/fb. Treating the gluon-gluon fusion process as a background and constraining its rate to the value expected in the standard model (SM) within uncertainties, the signal strength of the VBF process, defined as the ratio of the observed signal rate to that predicted by the SM, is measured to be 1.01 +0.55 -0.46. The VBF signal is observed with a significance of 2.4 standard deviations relative to the background prediction, while the expected significance is 2.7 standard deviations.

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