

## CMS Higgs results

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The Higgs boson within the Standard Model (SM) has been discovered by the ATLAS and CMS experiments in 2012. However analyzing a larger volume of LHC dataset collected by the CMS detector from 2016 to 2018 at a higher center of mass energy ( $\sqrt{s} = 13$  TeV) is expected to shed more light on the Higgs boson properties and would improve the related measurement sensitivity. Few comprehensive analysis on the Higgs decaying to different standard model particles(including all possible Higgs production modes) using the Run 2 dataset of  $137\text{fb}^{-1}$ , recorded by the CMS experiment would be presented here. The sensitivity of the analyses are improved by categorizing the events based on different Higgs production mechanisms: Gluon-Gluon fusion (GGH), Vector Boson Fusion (VBF), Vector Boson associated production (VH) and top quark associated production (ttH, tH). Combining all production modes, the latest Higgs boson signal strength measured in  $H \rightarrow \gamma\gamma$  decay channel is to be  $1.02_{-0.09}^{+0.11}$  with respect to the corresponding SM predictions. Also the measurements of other properties like standard model signal strength modifiers, production cross sections, and its couplings to other Standard Model particles will also be presented.

**Primary authors:** SAHA, Prafulla (National Institute of Science Education and Research (IN)); Dr MAL, Prolay (National Institute of Science Education and Research (IN))

**Presenter:** SAHA, Prafulla (National Institute of Science Education and Research (IN))

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