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Search for the Higgs boson produced in association with a Z or W boson and decaying to b quarks with CMS

In 2012, the ATLAS and CMS Collaborations announced the discovery of a new state with a mass around 125 GeV, compatible with the Standard Model Higgs boson. The measurements of this new particle's properties, in particular its couplings to other elementary particles, are important to test the predictions of the Standard Model.

In this poster, the coupling of the Higgs boson with beauty quarks is explore using Higgs boson production associated with a Z or W. This is the first update since the 2014 CMS result, which reported a 2.1 sigma excess over the background-only hypothesis. The analysis is based on 36/fb data from p-p collisions at 13 TeV centre-of-mass energy, collected by CMS in 2016. The higher luminosity and new energy regime of the 2016 dataset increases the expected significance relative to the Run 1 result.

An overview of the analysis strategy, mainly focusing on the associated Z(ll)+Higgs(bb) topology, and the new results from the 2016 dataset are given.

Experimental Collaboration

CMS

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