

Phenomenology 2020 Symposium



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Searches for scalar sector extensions of the standard model via $H \rightarrow ZA \rightarrow llbb$ process at CMS

Tuesday, 5 May 2020 18:00 (15 minutes)

We report on a search for an extension to the scalar sector of the standard model, where a new CP-even (odd) boson decays to a Z boson and a lighter CP-odd (even) boson. The Z boson further decays to a b quark pair while as lighter boson is reconstructed via its decays to electron or muon pairs. The analysed data were recorded by the CMS experiment in proton-proton collisions at the LHC during the year 2016 and corresponds to an integrated luminosity of 35.9 fb^{-1} . Predictions from the standard model are in agreement with data within the uncertainties. Upper limits at 95% confidence level are set on the production crosssection times branching fraction, with masses of the new bosons up to 1000 GeV. The results are interpreted in the context of the two-Higgs-doublet model.

Summary

The talk covers the latest results from the CMS experiment.

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