

Measurement of properties of Higgs boson in four-lepton final state at center-of-mass energy 13TeV of 2017

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Standard model (SM) of particle physics successfully explains high-energy experimental data. In 2012, ATLAS and CMS experiments reported the independent observation of a new boson, which is consistent with Higgs boson of SM. Subsequently, study with all Run 1 data shows that the properties of this boson is so far fully compatible with expectations of SM by analyzing various decay channels and production models and combining measurement of ATLAS and CMS experiments. In 2015, LHC started to operate with improved center-mass energy (13TeV). As is expected, LHC may obtain experimental data of 150 fb⁻¹. With updated data, ATLAS and CMS is further making accurate measurement of its properties, which is beneficial to validate or exclude deviations from the standard model and to understand the spontaneous symmetry breaking mechanism of electroweak theory.

Properties of Higgs boson are measured in H to ZZ to 4lepton channel using data of proton-proton collisions at a center-of-mass energy of 13TeV collecting integrated luminosity of 41.5fb⁻¹. Results based on 2016 and 2017 are combined and all results are consistent with the expectations of the SM Higgs boson within their uncertainties.

Type

Plenary talk

Sessions (parallel only)

Higgs

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