Contribution ID: **615** Type: **Parallel session talk**

Sensitivity to New Physics in final states with multiple gauge and Higgs bosons

Thursday 18 July 2024 15:55 (17 minutes)

We analyse the sensitivity to beyond-the-Standard-Model effects of hadron-collider processes involving the interaction of two electroweak (V) and two Higgs (H) bosons, VVHH, with V being either a W or a Z boson. We examine current experimental results by the CMS collaboration in the context of a dimension-8 extension of the Standard Model in an effective-field-theory formalism. We show that constraints from vector-boson-fusion Higgs-pair production on operators that modify the Standard Model VVHH interactions are already comparable with or more stringent than those quoted in the analysis of vector-boson-scattering final states. We study the modifications of such constraints when introducing unitarity bounds, and investigate the potential of new experimental final states, such as ZHH associated production. Finally, we show perspectives for the high-luminosity phase of the LHC.

Alternate track

1. Beyond the Standard Model

I read the instructions above

Yes

Authors: CAPPATI, Alessandra (Centre National de la Recherche Scientifique (FR)); ZARO, Marco (Università degli Studi e INFN Milano (IT)); TORRIELLI, Paolo (Universita e INFN Torino (IT)); COVARELLI, Roberto (University/INFN Torino (IT))

Presenter: CAPPATI, Alessandra (Centre National de la Recherche Scientifique (FR))

Session Classification: Higgs Physics

Track Classification: 01. Higgs Physics