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Search for Higgs Boson pair production in the HH -> bbll + MET final states with ATLAS detector at LHC

A search for Higgs Boson pair production via vector boson fusion and decaying to b-quarks and WW/ZZ/⊠⊠ final states is underway uses the Run-2 dataset collected by ATLAS at √s = 13 TeV, corresponding to 139 fb of 2015-2018 providing a completely new signature in the Higgs sector. This search can give constraints on the parameters of the Higgs coupling with vector bosons, especially the quadruple coupling of VVhh, using non resonant signature. In this analysis a VBF selection is added to the ggF-analysis selection and optimized by comparing the backgrounds and newly produced VBF signal MCs. in this talk we will present an overview of the analysis, Event definition/selection and the classification results of ggF signal and VBF varied coupling modifiers with Neural network method and will show also some results from the previously published papers (related to HH production).

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