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VBF Higgs Boson Production at CMS

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The discovery of the Higgs boson in 2012 provided confirmation of the proposed mechanism of EWSB and also heralded a new era of precision Higgs physics. This CMS analysis presents measurement of the Higgs boson production rate in vector boson fusion (VBF) mode, decaying into $WW \rightarrow 2l2\nu$ and $ZZ \rightarrow 4l$ channels. With gauge boson couplings in both the production and decay vertices, a VBF measurement is a powerful probe of the VVH coupling. In order to improve signal significance we employ a machine learning technique based on deep neural networks for signal and background separation.

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