

Abstract Submitted  
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**Evidence for vector-boson fusion production of  $H \rightarrow WW^* \rightarrow \ell\nu\ell\nu$**   
PHILIP CHANG, Univ of Illinois - Urbana, ATLAS COLLABORATION — Evidence for the vector-boson fusion (VBF) production of the Higgs boson in its  $WW^*$  decay channel in the dilepton final state is reported. The analysis was performed on 7 and 8 TeV pp collisions recorded by the ATLAS detector with an integrated luminosity of  $25 \text{ fb}^{-1}$ . One of the main improvements over the previous result is the adoption of multivariate technique for an improved sensitivity to the VBF signal. For a Higgs boson mass of 125.36 GeV, the best-fit value for the ratio of the signal strength for gluon fusion (ggF) and VBF production,  $\mu_{\text{VBF}}/\mu_{\text{ggF}}$ , is measured to be  $1.26^{+0.61}_{-0.45}(\text{stat.})^{+0.50}_{-0.26}(\text{syst.})$ . The observed significance of the VBF production is 3.2 standard deviations; the expected is 2.7 standard deviations. This marks the final run 1 measurement in this channel; the inclusion of the upcoming run 2 data will improve the precision further and take us to the next step towards the Higgs boson precision era.

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