## The 5th international conference on particle physics and astrophysics



Contribution ID : 726 Type : Poster

## Observation of the VBF production in the $H \rightarrow WW^* \rightarrow ev\mu v$ decay channel with the ATLAS experiment

Monday, 5 October 2020 19:45 (15)

An analysis of vector-boson-fusion production of Higgs bosons in the  $H \to WW^* \to ev\mu\nu$  decay channel is presented. The proton-proton collision data used in this result were produced at the LHC with a center-of-mass energy of 13 TeV and recorded by the ATLAS detector between 2015 and 2018, corresponding to the full Run 2 integrated luminosity of 139 fb–1. Novel multivariate techniques are employed to isolate the signal from background processes. The analysis methodologies and the results will be presented.

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Session Classification: Poster session

Track Classification: High energy physics