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Observation of electroweak Zjj production

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Events with jets produced in association with a Z boson in proton-proton collisions can be used to study distributions sensitive to the vector boson fusion (VBF) process at CERN's Large Hadron Collider.

This process is interesting to study because of its similarity to the VBF production of a Higgs boson as well as its sensitivity to new physics via the WWZ triple gauge coupling.

Evidence for electroweak Zjj production beyond the 5σ level is presented using data collected by the ATLAS experiment in 2012.

This constitutes the first observation of a process involving a VBF diagram.

The detector-corrected cross sections measured in two fiducial regions are in excellent agreement with the Standard Model expectations.

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