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Study of WWZ tri-boson production at ATLAS

Thursday 17 March 2022 17:00 (20 minutes)

The Standard Model predicts self interactions between gauge bosons, including triple gauge boson couplings (TGC) and quartic gauge boson couplings (QGC). In addition, the interactions between the Higgs boson and gauge bosons are also of interest. In ATLAS group, events with four leptons (electrons or muons) in the final state are used to search for the production of WWZ -> lvlvll. The total luminosity used is 139 fb-1 at sqrt{s}=13 TeV. Events are further divided into three categories based on the invariant mass and the flavor of the two leptons from the decays of the two W bosons to increase the search sensitivity. A multivariate variable is further developed to increase the separation between the signal and background. I will present optimization on event selection and search sensitivity studies using simulated Monte Carlo events.

Career stage

Graduate student

Author: WANG, Zhichen (University of Michigan (US))

Presenter: WANG, Zhichen (University of Michigan (US))

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