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## Measurement of same-sign $WW$ diboson production with the ATLAS experiment

*Tuesday, August 1, 2017 11:10 AM (25 minutes)*

We present a study of same-sign  $W^\pm W^\pm$  boson pairs produced in association with two or more jets in pp collisions at  $\sqrt{s} = 13$  TeV. Same-sign  $W^\pm W^\pm$  production is sensitive to the mechanism of electroweak symmetry breaking and physics beyond the standard model, particularly through vector boson scattering (VBS) production. Unlike opposite-sign  $WW$  production, in same-sign  $W^\pm W^\pm$  production the electroweak mediated diagrams are comparable in size to the QCD mediated diagrams, making it well suited for VBS studies. An inclusive cross section measurement of both the electroweak and QCD same sign  $W^\pm W^\pm$  processes is performed using leptonically decaying  $W^\pm$  bosons with electrons and/or muons in the final state. The first evidence of of same sign  $W^\pm W^\pm$  production was seen by the ATLAS collaboration in  $20.3 \text{ fb}^{-1}$  of 8 TeV data, seeing an excess in data of  $3.6\sigma$  over backgrounds. We expect greater sensitivity with the  $36 \text{ fb}^{-1}$  of 13 TeV data collected by ATLAS in 2015 and 2016.

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