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New Results on the W Boson Production and Multi-lepton Cross Sections with the ATLAS Detector

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We report on the latest measurement on the production of W bosons in association with jets at 8 TeV and compare our results to the latest theoretical predictions. Differential cross sections for events with one or two jets are presented for a range of observables, including jet transverse momenta and rapidities, the scalar sum of transverse momenta of the visible particles in the event, and the transverse momentum of the W boson. For a subset of the observables, the differential cross sections of positively and negatively charged W bosons are measured separately.
Moreover, the exclusive muon pair production measurement at 13 TeV is presented and the results are compared to theoretical predictions. The integrated cross-section is determined within a fiducial acceptance region of the ATLAS detector and differential cross-sections are measured as a function of the dimuon invariant mass.
If available, a study of the W and Z boson production in association with 1 or 2 b-jets will be presented.

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