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ATLAS measurements of vector boson production with associated jets

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The production of jets in association with a W or a Z boson is an important process to study QCD in a multi≠scale environment in p≠p collisions at the LHC. The cross sections, differential in several kinematics variables, and their ratios (W+jets)/(Z+jets), have been measured up to high jet multiplicities and high jet transverse momenta, and compared to state≠of≠the≠art QCD calculations and Monte Carlo simulations. In addition, the production of heavy flavour in association with a W or Z boson represents is sensitive to the parton density functions and to the modeling heavy≠quark flavour production mechanisms. Measurement of the transverse momentum of the Z boson is sensitive to soft resummation effects for small momentumtransfers and to multiple hard jet emissions for large momentum transfers, probing QCD in a unique way. The data are used to tune next≠to≠leading order plus parton shower Monte Carlo simulations. An overview of these results is given.

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