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Measurement of the vector-boson transverse momentum distributions with ATLAS

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The transverse momentum distribution of W/Z bosons produced in hadronic collisions is a traditional probe of strong interaction dynamics. The correct modelling of this distribution is important in many physics analyses at the LHC for which the production of W or Z bosons constitutes a significant background. Moreover, it is crucial for a precise measurement of the W boson mass. In this talk measurements of the transverse momentum distribution for a Z decaying into an electron or muon pair together with the distribution of an angular variable based on the direction of the two leptons coming from the Z-boson decay are presented. The measurement is done using proton-proton collision data at $\sqrt{s}=13$ TeV collected with the ATLAS detector. The results are compared to perturbative and resummed QCD calculations and used to constrain the parton shower parameters of Monte Carlo generators. If available a measurement of transverse momentum distributions for W decaying into an electron or muon and a neutrino is also presented.

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