

MEASUREMENT OF THE PRODUCTION CROSS SECTION FOR W^- AND Z^- BOSONS IN ASSOCIATION WITH JETS WITH THE ATLAS DETECTOR

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Tuesday, February 8, 2011
4:00 P.M. NSH 415

We report on a first measurements of the inclusive W^+ jets and Z^+ jets cross sections in proton-proton collisions at a centre-of-mass energy of 7 TeV at the LHC, with the ATLAS detector. Cross sections, in both the electron and muon decay modes of the W^- and Z^- bosons, V^- bosons, are presented as a function of jet multiplicity and of the transverse momentum of the leading and next-to-leading jets in the event. Measurements are also presented of the ratio of cross sections $\sigma(V^+ \geq n)/\sigma(V^+ \geq n-1)$ for inclusive jet multiplicities $n = 1-4$. The results, based on an integrated luminosity of 1.3 pb^{-1} , have been corrected for all known detector effects and are quoted in a limited and well-defined range of jet and lepton kinematics. The measured cross sections are compared to particle-level predictions based on perturbative QCD. Next-to-leading order calculations, studied here for $n \leq 2$, are found in good agreement with the data. Leading-order multiparton event generators, normalized to the NNLO total cross section, describe the data well for all measured jet multiplicities.

Particle
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All interested
persons are
cordially
invited to
attend.