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Heavy flavour physics at ATLAS

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The QCD production of Quarkonia and high-PT B-hadrons are important processes as a probe of perturbative QCD. High-PT B-hadrons also form a significant background to many new physics channels at the LHC.

The inclusive production of the J/psi and Upsilon mesons is studied in the dimuon decay mode. The double-differential cross section is measured with respect to the transverse momentum and rapidity of the corresponding meson. In addition the ratio of J/psi mesons produced from B hadron decays to those produced from prompt QCD sources is measured as a function of J/psi transverse momentum.

The b-jet production measurement starts from the samples used to measure the jet production cross-sections in the full 2010 data sample and derives the corresponding differential cross-sections for jets containing a B-hadron. B-tagging techniques are used to measure the fraction of jets containing a B hadron, and the results are compared to calculations of the B cross-section based on Monte Carlos and on higher order QCD. Future prospects for studying B-physics with ATLAS are also briefly described.

Summary

Heavy flavor results from the first year of ATLAS collisions are presented and compared with model predictions and QCD calculations, along with a brief survey of future prospects.

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