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Measurement of boson production in lead-lead collisions at sqrt(s_NN)=2.76 TeV with the ATLAS detector

Friday 6 July 2012 09:00 (15 minutes)

Direct production of bosons are a powerful tool in heavy ion collisions. Their rates provide access to the initial state parton distribution functions, which are expected to be modified by nuclear effects. They also provide a means to calibrate the expected energy of jets that are produced in the medium, and thus are a tool to probe the physics of jet quenching more precisely both through jet rates and fragmentation properties. The ATLAS detector measures photons and Z->ee decays with its hermetic, longitudinally segmented calorimeter, which has excellent spatial and energy resolution, providing detailed information about the shower shape of each measured photon. ATLAS also measures the Z->mumu and W->munu in the same pseudorapidy range using the its muon system. First results on the rates of isolated direct, Z and W from approximately 140 μb-1 of lead-lead data will be shown, as a function of transverse momentum, pseudorapidity and centrality, and their rates compared to expectations from perturbative QCD.

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