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Inclusive jet and charged hadron nuclear modification factors in PbPb collisions at 2.76 TeV with CMS

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Measurements of charged hadron and inclusive jet transverse momentum (p_T) spectra in pp and PbPb collisions at a nucleon-nucleon center-of-mass energy of 2.76 TeV with the CMS detector will be reported. These measurements make use of the high-statistics jet-triggered data recorded in 2011, including the total available PbPb luminosity of 150/ub. Charged particles are reconstructed using an iterative algorithm and spurious high- p_T tracks are suppressed by requiring appropriate energy deposits in the calorimeter system. Jets are reconstructed with the anti- k_T algorithm, using combined information from tracking and calorimetry. The charged particle and jet transverse momentum distributions are measured in the pseudorapidity range of $|\eta| < 1$ and $|\eta| < 1.6$, and in p_T up to 100 GeV/c, and from 100 to 300 GeV/c, respectively. The nuclear modification factors, RAAs, for charged hadrons and jets are presented as a function of p_T and collision centrality. In the range $p_T = 5-10$ GeV/c the charged hadron production in PbPb collisions is suppressed by up to a factor of seven, compared to the pp yield scaled by the number of incoherent nucleon-nucleon collisions. The charged hadron RAA increases at higher p_T and approaches a value of approximately 0.5 in the range $p_T = 40-100$ GeV/c.

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