



Contribution ID: 412

Type: Poster

Event-by-event mean p_T fluctuations measured by the ALICE experiment at the LHC

Thursday, August 16, 2012 4:00 PM (2 hours)

Results on event-by-event fluctuations of the mean transverse momentum of charged particles measured by the ALICE experiment at the LHC are compared to different Monte Carlo approaches. For these studies pp collisions at $\sqrt{s} = 0.9, 2.76$ and 7 TeV and Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV are used. The analysis is performed within $|\eta| < 0.8$ and $0.15 < p_T < 2$ GeV/c.

The data shows only a small collision energy dependence and indicates a common scaling behaviour with event multiplicity from pp to semi-central Pb-Pb collisions. In central Pb-Pb collisions, the results deviate from this trend, exhibiting a significant reduction of the fluctuation strength.

A systematic comparison of ALICE results in pp to PHOJET and different tunes of the PYTHIA6 and PYTHIA8 event generators is presented. The study indicates a sensitivity of the data to different mechanisms to model high-multiplicity pp events. A comparison of Pb-Pb results to HIJING and AMPT suggests a strong relation between transverse momentum fluctuations and collectivity in central events, and disfavors an independent superposition scenario.

Primary author: ALICE, Collaboration (CERN, Geneva, Switzerland)

Co-author: HECKEL, Stefan Thomas (Johann-Wolfgang-Goethe Univ. (DE))

Presenter: HECKEL, Stefan Thomas (Johann-Wolfgang-Goethe Univ. (DE))

Session Classification: Poster Session Reception

Track Classification: Correlations and fluctuations