

Inclusive jet measurements in pp and Pb-Pb collisions with ALICE

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Measurements of jet yields in heavy-ion collisions can be used to constrain jet energy loss models, and in turn provide information about the physical properties of deconfined QCD matter. ALICE reconstructs charged particle jets (charged jets) with high-precision tracking of charged particles down to $p_T^{track} = 150$ MeV/ c , and jets (full jets) with the addition of particle information from the electromagnetic calorimeter down to $p_T^{cluster} = 300$ MeV/ c . By including low momentum jet constituents, ALICE is uniquely situated at the LHC to measure jets down to low jet momentum, to determine the modification to the soft components of jets, and to measure medium recoil particles.

Two complementary sets of measurements with ALICE over $R = 0.2 - 0.4$ and extending to low jet p_T will be presented:

- (1) New results of inclusive full jet measurements in pp and Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV will be shown, and compared to theoretical predictions. These will include the jet R_{AA} and the jet cross-section ratio for different jet R , and will constitute the first such full jet measurements at low transverse jet momentum at this collision energy.
- (2) The first measurements of charged jet production using a mixed-event technique to correct for combinatorial background in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV will be shown, over a variety of collision centralities. The mixed-event technique allows for extending jet spectra to lower transverse momenta and larger jet radii without imposing a bias on the jet fragmentation. Details of the mixed-event method will be provided, as well as a discussion on conceptual differences between the mixed-event approach and other background correction methods.

Summary

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