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Azimuthal anisotropy of charged jet production in $\sqrt{s_{\mathrm{NN}}}$ = 2.76 TeV Pb–Pb collisions with ALICE

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Jets in heavy-ion collisions are used to probe the QGP, as medium-induced parton energy loss from elastic and radiative interactions between partons and the QCD medium will lead to a modification of the measured jet spectrum. The dependence of the energy loss on the in-medium path length provides deeper insight into the energy loss mechanisms and can be studied by measuring jet production relative to the event plane orientation.

This contribution will show results of measurements of $R = 0.2$ charged jet production in central and peripheral $\sqrt{s_{\mathrm{NN}}}$ = 2.76 TeV Pb–Pb collisions with respect to the second order event plane, quantified as v_2^{jet}. Jet finding is performed with the anti-k_{T} algorithm using charged tracks from the ALICE tracking system. The contribution of hydrodynamic flow to the underlying event energy is taken into account event-by-event; remaining fluctuations are removed on an ensemble basis by unfolding the jet spectra for different event plane orientations separately.

Significant non-zero v_2^{jet} is observed for peripheral collsions for $20 < p_{\mathrm{T}} < 100$ GeV/c; in central collisions this effect is less pronounced. Comparisons to v_2 of charged particles at high momenta and azimuthally dependent jet production studies of ATLAS are given, as well as v_2^{jet} predictions from the JEWEL Monte Carlo, which simulates parton shower evolution in the presence of a dense QCD medium.

On behalf of collaboration:

ALICE

Primary author: BERTENS, Redmer Alexander (Nikhef National institute for subatomic physics (NL))

Presenter: BERTENS, Redmer Alexander (Nikhef National institute for subatomic physics (NL))

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