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Hadron+jet measurements in Pb-Pb collisions at $\sqrt{s_{\mathrm{NN}}} = 5.02$ TeV with ALICE

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The measurement of jets recoiling from a trigger hadron in heavy-ion collisions can be used to understand the properties of the Quark Gluon Plasma. Jet-medium interactions cause jets to lose energy in the medium, and may modify the jet structure. Jet deflection towards large angles may also occur - multiple soft scatterings in the medium broadens the overall azimuthal correlation, while possible Moliere scatterings off quarks and gluons is expected to broaden the tail of the correlation. This can be studied through a measurement of the hadron-jet acoplanarity. While a measurement from Run 1 showed no evidence of large-angle jet broadening with respect to vacuum expectation within experimental uncertainties, recent theoretical work has highlighted that low hadron trigger p_{T} and low recoiling jet p_{T} configurations show more sensitivity to in-medium modifications to the acoplanarity.

To explore these phenomena, we present a new measurement of the semi-inclusive distribution of charged jets recoiling from a trigger hadron in Pb-Pb collisions at $\sqrt{s_{\mathrm{NN}}} = 5.02$ TeV. This technique experimentally allows to suppress the combinatorial background and thus explore jet substructure and acoplanarity down to low p_{T} and large R. A study of jet quenching through the p_{T}-differential comparison of central and peripheral collisions, jet acoplanarity through the angular distribution of the hadron and recoil jet, and jet energy redistribution through comparison of different jet cone radii will be shown.

Summary

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