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Study of full event energy-energy correlation in high-p_{T} Z tagged events in PbPb collisions in CMS

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The production of a Z boson provides a clean handle to control the population of events to be studied. By selecting muonic decays of Z bosons, we can isolate the effect of the recoiling process without potential bias from requiring isolation, as is the case for photons. Di-hadron correlations can naturally separate effects from different angular scales. Similar to the energy-energy correlator in jets where perturbative and non-perturbative regimes are separated, by studying analogous correlation in the full event, one can unravel potential larger-scale structures that may arise from the interaction of high-energy recoiling particles with the quark-gluon plasma. This talk will present the first measurement of the energy-weighted di-hadron correlation with the CMS collaboration using events tagged with a Z boson. The result provides interesting insight into the inner workings of the quark-gluon plasma.

Category

Experiment

Collaboration

CMS

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