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Measurement of elliptic flow v_2 of neutral mesons in Pb–Pb collisions at $\sqrt{s_{NN}} = 5.36$ TeV with the ALICE EMCal

The simultaneous description of the elliptic flow and the production rate of direct photons in ultra-relativistic heavy-ion collisions remains a major theoretical challenge, commonly referred to as the “direct-photon puzzle”. To distinguish between the elliptic flow of direct photons and photons originating from hadronic decays, primarily from π^0 mesons, a precise measurement of the π^0 flow is crucial. Furthermore, measurements of elliptic flow of different baryons and mesons can help to better understand underlying production mechanisms. During LHC Run 3, the ALICE experiment collected more than 100x more Pb–Pb collisions compared to Run 2, opening up new opportunities to study all these effects in greater detail.

In ALICE, the π^0 can be reconstructed using various methods. For high transverse momentum π^0 mesons, these methods rely on measuring decay photons with the electromagnetic calorimeter (EMCal). In this poster the current status of the measurement of elliptic flow of π^0 mesons in Pb–Pb collisions at $\sqrt{s_{NN}} = 5.36$ TeV will be presented.

Category

Experiment

Collaboration (if applicable)

ALICE

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