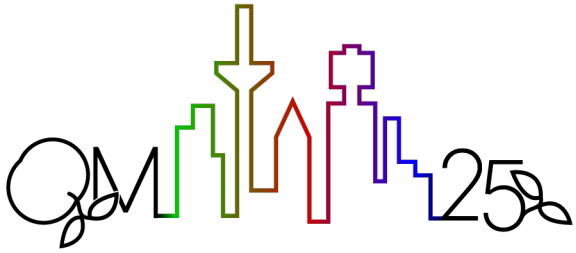

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Multi-particle cumulant J/ψ v_2 measurement in Pb–Pb with the ALICE experiment

The quark-gluon plasma (QGP) produced in ultrarelativistic heavy-ion collisions exhibits properties of a mostly perfect fluid. Experimentally, this was established by measuring azimuthal anisotropies in the final state, known as elliptic flow and higher order harmonics such as triangular flow. These Fourier harmonic coefficients have been extensively measured using inclusive charged particles or identified particles in the soft sector. Interestingly, measuring such coefficients using hard probes, such as quarkonia, brings additional information about heavy-quark production and their thermalization within the QGP. While the suppression of loosely bound quarkonia in QGP was already observed in the first measurements at the SPS, the J/ψ flow has been studied at the LHCusing Run1 and Run 2 data. These measurements shed new light on quarkonium production and confirm the existence of regeneration mechanisms. Thanks to the new ALICE data-taking strategy in LHC Run 3, new opportunities for more precise and refined measurements are now possible. In particular, multiparticle cumulant analysis can be carried out to extract J/ψ flow enabling access to flow fluctuations. In this poster, preliminary results on J/ψ v_2 in Pb–Pb collisions at $\sqrt{s_{\rm NN}} = 5.36\ TeV$ at forward rapidity ($2.5 < y < 4$) will be presented and discussed using various measurement techniques including, for the first time, multiparticle cumulants.

Category

Experiment

Collaboration (if applicable)

ALICE Collaboration

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