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J/ψ elliptic flow at mid-rapidity in Pb–Pb collsions at $\sqrt{s_{NN}}$= 5.02 TeV with ALICE

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In the early and hottest phase of nucleus-nucleus collisions the formation of a Quark-Gluon Plasma (QGP) is expected. Several QGP induced effects, such as the melting of charmonium states due to color screening or the recombination of uncorrelated charm and anti-charm quarks, can influence charmonium yields. Recent ALICE measurements of charmonium nuclear modification factor in Pb–Pb collisions at $\sqrt{s_{NN}}$= 2.76 TeV and $\sqrt{s_{NN}}$= 5.02 TeV showed that the (re)combination mechanism plays a dominant role in the production of charmonia at low p_{T}. In addition, the positive elliptic flow, v_2, measured for low-p_{T} J/ψ and D-mesons in Pb–Pb collisions suggests that the charm quarks thermalize in the QGP.

We report on the new measurement of the low and intermediate p_{T} J/ψ elliptic flow at mid-rapidity ($|y| < 0.9$) in Pb–Pb collisions at $\sqrt{s_{NN}}$= 5.02 TeV. The J/ψ mesons are reconstructed in the di-electron decay channel using the ALICE central barrel. We employ the Pb–Pb data sets recorded by ALICE during LHC Run 2 in 2015 and 2018. These results are complementary to the existing ALICE measurements at forward rapidity and to ATLAS and CMS high p_{T} results at mid-rapidity and will be discussed in the context of recent model calculations.

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