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Origin of elliptic flow correlations between low-pT and high-pT regions in heavy ion collisions at the LHC energies

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Two-component hydrodynamic model with jets, HYDJET++, is employed to analyse the data on elliptic flow correlations at low (pT < 1.25 GeV/c) and high (pT > 14 GeV/c) transverse momenta in Pb+Pb collisions at \sqrt{sNN} = 5.02 TeV. Because of these two mechanisms, describing soft and hard processes, the model calculations restored by the four-cumulant method reproduce the centrality dependence of differential elliptic flow in both soft and hard pT regions rather well without any additional tuning of model parameters. Without jet quenching in hot and dense medium the correlations in the model are very weak. We show that the experimentally observed correlations between elliptic flow at low and high transverse momenta in peripheral lead-lead collisions arise mainly because of correlations of particles in jets.

[1] L.V. Bravina et al., Phys. Rev. C 103 (2021) 034905

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