

Measurements of spin alignment of vector mesons and global polarization of hyperons with ALICE at the LHC

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Spin alignment of vector mesons (e.g. K^{*0}) and global polarization of hyperons (e.g. Λ) in non-central high energy heavy-ion collisions could occur due to large initial angular momentum of the system. The spin alignment could also occur during the process of hadronization. The spin alignment of K^{*0} is measured using a parameter ρ_{00} characterising the angular distribution of the vector mesons w.r.t. the normal to the production plane at midrapidity. The measurements of ρ_{00} will be presented for pp collisions at $\sqrt{s} = 13$ TeV and for Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV. The centrality dependence of ρ_{00} will also be presented. The ρ_{00} values for K^{*0} vector mesons are compared to the corresponding values for K_S^0 mesons in Pb-Pb collisions. The global polarization measurements for Λ and $\bar{\Lambda}$ hyperons will be presented for different collision centralities in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV. The dependence of global polarization of hyperons on their transverse momenta and rapidity will also be presented.

List of tracks

QCD phase diagram (BES)

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