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Production of charm-strange mesons at $\sqrt{s_{NN}}=5.02$ TeV in heavy ion collisions

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We discuss charm-strange mesons in heavy-ion collisions at $\sqrt{s_{NN}} = 5.02$ TeV, focusing on their production based on the coalescence model. Starting from the investigation on the transverse momentum distribution of both charm and strange quarks, we evaluate the yield and transverse momentum distribution of D_s , D_s , $Ds0(2317)$, and $Ds1(2460)$ mesons. We also present the transverse momentum distribution of ϕ and $D0$ mesons and discuss, in particular, the transverse momentum distributions in both two and four-quark states for $Ds0^*(2317)$ mesons. We show that our results agree well with experimental measurements for the D_s meson and argue that the strangeness enhancement has a significant influence on the production of charm-strange mesons in heavy-ion collisions.

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