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elliptic flow coefficient of D_{S} as an evidence of heavy flavor sequential hadronization in HIC

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Within the framework of a Langevin dynamics model for heavy quarks in a hot and dense medium, combined with a sequential coalescence +fragmentation hadronization scenario which let the D_{s} meson produced earlier than the other hadron, we systematically calculate the Pb+Pb yield spectra of D_s, D^0, and Λ_c^+, the yield ratios D_s/D^0 and Λ_c^+/D^0, and their elliptic flow coefficient $v_2(p_{\mathrm{T}})$ as functions of transverse momentum p_{T}. We find that incorporating sequential hadronization beyond hadronic-phase interactions induces an enhancement of the v_2 of D^0 and a suppression of v_2 of D_s, resulting in anomalously suppressed v_2 of D_s relative to D^0 in the intermediate p_T region. This signature is consistent with preliminary ALICE measurements reported at the Quark Matter conference; therefore, it provides key evidence of the sequential hadronization mechanism.

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