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Extracting jet transport parameter $\hat{q}$ from a multiphase transport model}

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Within a multi-phase transport model with string melting scenario, jet transport parameter $\hat{q}$ is calculated in Au+Au collisions at $\sqrt{s_{NN}}$= 200 GeV and Pb+Pb collisions at $\sqrt{s_{NN}}$= 2.76 TeV. The $\hat{q}$ increases with the increasing of jet energy for both partonic phase and hadronic phase. The energy and path length dependences of $\hat{q}$ in full heavy-ion evolution are consistent with the expectations of jet quenching. The correlation between jet transport parameter $\hat{q}$ and dijet transverse momentum asymmetry A_J is mainly investigated, which discloses that a larger $\hat{q}$ corresponds to a larger A_J. It supports a consistent jet energy loss picture from the two viewpoints of single jet and dijet. It is proposed to measure dijet asymmetry distributions with different jet transport parameter ranges as a new potential method to study jet quenching physics in high energy heavy-ion collisions.

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