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Reconstructed jets in a multiphase transport model

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Several reconstructed-jet observables are simulated for Pb+Pb collisions at 2.76 TeV by using a multiphase transport (AMPT) model with a triggered dijet (or photon-jet), which provides a complete understanding of the dynamical evolution from jet energy loss in QGP, jet hadronization to jet transport in a hadronic matter. We find that the measured asymmetry of dijet is driven by both initial dijet asymmetry and final jet partonic energy loss. We show that the imbalance ratio of photon-jet is sensitive to both production position and passing direction of photon, which can be applied for a detail tomography on the QGP. The jet fragmentation function in Pb+Pb collisions is decomposed into two contributions from jet fragmentation and coalescence due to a competition between the two jet hadronization mechanisms. For jet shape, we propose that the sub-leading jet shape can display a larger medium modification effect than the leading jet because of its longer path-length inside the QGP. We also demonstrate that the path-length dependence of jet energy loss leads to azimuthal anisotropies of jets, which is very sensitive to the geometry fluctuations of initial partonic distribution.

Summary

Presentation type

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