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Energy versus centrality dependence of the jet quenching parameter \hat{q} at RHIC and LHC: a new puzzle?

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We present here an extraction of the \hat{q} parameter using data of inclusive particle suppression at RHIC and LHC energies for different centralities. Our approach consists of fitting a K factor that quantifies the departure of this parameter from an ideal estimate, $K \equiv \hat{q}/(2e^{3/4})$, where \hat{q} is determined by the local medium quantities as provided by hydrodynamical calculations. We find that this K factor is larger at RHIC than at the LHC, as obtained already in previous analyses, but, surprisingly, it is almost independent of the centrality of the collision. Taken at face value, the K factor would not depend on the local properties of the medium as energy density or temperature, but on global collision quantities such as the center of mass energy. This is a very intriguing, unexpected possibility for which we cannot yet provide a clear interpretation. This talk is based on arXiv:1606.14837

Summary

Presentation type

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