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Transverse Momentum Broadening in Weakly Coupled Quark-Gluon Plasma MINDAUGAS LEKAVECKAS, KRISHNA RAJAGOPAL, HONG LIU, FRANCESCO D'ERAMO, CHRISTOPHER LEE — Jet quenching parameter or, equivalently, transverse momentum broadening distribution function is an important quantity which helps to understand energy losses in heavy ion collisions and get insights into the properties of the de-confined quark-gluon plasma. Soft Collinear Effective Theory (SCET) provides framework to calculate jet quenching parameter at weak coupling using expectation value of two space-like separated light-like Wilson lines which can be evaluated for desired medium. In this work we obtain transverse momentum broadening distribution function for the quark-gluon plasma in equilibrium using full Thermal Field Theory formalism and recover its limiting behavior in the HTL regime.

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