

Abstract Submitted
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Jet quenching phenomenology from soft-collinear effective theory with Glauber gluons IVAN VITEV, Los Alamos National Laboratory, GRIGORY OVANESYAN, University of Massachusetts, ROBIN LASHOFF-REGAS, PHILIP SAAD, University of California, Santa Barbara, IVAN VITEV, Los Alamos National Laboratory — We present the first application of a recently-developed effective theory of jet propagation in matter SCET_G to inclusive hadron suppression in nucleus-nucleus collisions at the LHC. SCET_G-based splitting kernels allow us to go beyond the traditional energy loss approximation and unify the treatment of vacuum and medium-induced parton showers. In the soft gluon emission limit, we establish a simple analytic relation between the QCD evolution and energy loss approaches to jet quenching. We quantify the uncertainties associated with the implementation of the in-medium modification of hadron production cross sections and show that the coupling between the jet and the medium can be constrained with better than 10% accuracy.

Ivan Vitev
Los Alamos National Laboratory

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