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Constraints on jet quenching from multi-stage energy-loss approach AMIT KUMAR, Wayne State Univ, JETSCAPE COLLABORATION — A unified description of the jet evolution through deconfined QCD matter remains as one of the challenging problems in the area of heavy-ion physics. In this talk, we demonstrate a successful description of leading hadron and jet observables using a multi-stage energy loss approach. Within the framework of JETSCAPE [1,2], an effective parton evolution is set up which includes a high-virtuality radiation dominant region, followed by a low-virtuality scattering dominant phase. Measurements of inclusive jet and single-hadron R_{AA} set strong constraints on the phase-space available for each stage of the energy-loss. The jet-medium response is incorporated through a weakly-coupled transport description with recoil particles excited from the QGP. We also study the cone size dependence of the nuclear modification factor for jets. This serves as an excellent probe to study the detailed mechanism of the lost jet energy inside the plasma. [1] JETSCAPE Collaboration (J. H. Putschke (Wayne State U.) et al.), The JETSCAPE framework, arXiv:1903.07706 [nucl-th] (2019). [2] JETSCAPE Collaboration (S. Cao (Wayne State U.) et al.), Multistage Monte-Carlo simulation of jet modification in a static medium, Phys. Rev. C96 (2017) no.2, 024909.

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