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Jet quenching in anisotropic media

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Over the last decades, many of the available theoretical jet quenching formalisms have been extended to account for the medium's finite longitudinal extension and expansion. However, only recently a first-principle approach has been developed that allows to study jet evolution in anisotropic media in the dilute limit. In this talk, we show how to extend some of the previous results to the dense regime, where the resummation of multiple in-medium scatterings is necessary. We consider, in particular, a non-flowing background with finite matter gradients and compute the single particle momentum broadening distribution and the single gluon production rate, two crucial observables for jet quenching phenomenology. The resumation is performed by either computing the opacity series or starting from the all order BDMPS-Z formalism. The (novel) resulting modifications to jets' substructure are discussed.

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