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Typ: Talk

Data-driven \hat{q} in a hard-soft factorized parton energy loss approach

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Interactions of high-energy partons with the strongly-coupled quark-gluon plasma lead to parton energy loss, as well as broadening of the partons' transverse and longitudinal momentum distributions. Energy loss and momentum broadening resulting from soft parton-plasma interactions can be quantified with transport coefficients, factorizing their effect from hard (perturbative) parton-plasma scatterings. We apply this factorized model of energy loss [1] to perform a Bayesian calibration against RHIC and LHC measurements, finding an enhancement of parton energy loss at low temperature compared to perturbative expectations. We highlight the model's ability to match perturbative calculations while inherently allowing for agnostic non-perturbative energy loss.

[1] T. Dai, J.-F. Paquet, D. Teaney and S.A. Bass, "Parton energy loss in a hard-soft factorized approach," Phys.Rev.C 105 (2022) no.3, 034905

Experiment/Theory

Theory/Phenomenology

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