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# Novel jet substructure observables via dynamical grooming

*Wednesday, 25 March 2020 12:00 (20 minutes)*

Jet substructure represents a cornerstone in current BSM searches at the LHC. Further, it is instrumental in the on-going endeavor to pinpoint the effect of a hot, thermal medium, namely the QGP, on QCD dynamics. In this talk, based on [1], I will present a new set of jet substructure observables and an associated grooming technique rooted on identifying the hardest splitting in an angular ordered shower and discarding prior splittings that occur at larger angles. First, I will use p+p collisions to benchmark the method with pQCD calculations through the computation of the Sudakov form factor at modified leading-log accuracy in the context of vetoed showers. I will compare the analytic properties of the dynamically tagged splitting such as its momentum sharing fraction with Monte Carlo simulations. In addition, the resilience of the method to non-perturbative effects together with its performance on quark/gluon discrimination and boosted W/t/H tagging will be assessed.

[1] arXiv:1911.00375

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