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NLL accurate PanScales showers for hadron collisions

Friday, 8 July 2022 15:30 (15 minutes)

Monte Carlo event generators, including their core parton-shower component, are crucial for a wide range of physics applications at colliders. However, the current "leading logarithmic"(LL) accuracy of parton showers is increasingly becoming a limiting factor in precision applications. This talk presents new "PanScales"dipole showers for hadron collisions, focusing on the physical characteristics of the showers that are required to achieve NLL accuracy. I will then demonstrate that the implementations of the new showers reproduce NLL accuracy as expected, with explicit comparisons to all-order resummation results across a wide range of observables in Drell-Yan and gluon-fusion Higgs production, including the Drell-Yan and Higgs boson transverse momentum distributions, and jet veto acceptances.

In-person participation

Yes

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