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Precision Event Shape Analysis for DIS at the HERA and EIC

Tuesday 9 September 2025 16:00 (20 minutes)

In this talk, I present a state-of-the-art analysis of the 1-jettiness event shape using Soft-Collinear Effective Theory (SCET). This work achieves $N^3LL + \mathcal{O}(\alpha_s)$ acccuracy with full fixed-order matching and inclusion of nonperturbative corrections. It stands among the most precise event-shape predictions in DIS to date and enables competitive extractions of both the strong coupling constant α_s and the universal power correction parameter Ω_1. The formalism is directly applicable to both HERA and upcoming EIC measurements.

Track

1: Perturbative and resummed predictions, parton showers and event generators for LHC and EIC

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Session Classification: Perturbative and resummed predictions, parton showers and event generators for LHC and EIC