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Power Corrections to N-Jettiness Slicing at NLO

Tuesday, July 22, 2025 9:55 AM (20 minutes)

The N-jettiness slicing method has become a key tool for precision QCD calculations over the past decade. However, efficient numerical implementation requires the inclusion of power corrections beyond leading power. In this talk, I will discuss the role of next-to-leading power (NLP) corrections in the zero-jettiness variable at next-to-leading order (NLO), focusing on processes with colorless final states at hadron colliders and beyond.

I will show how NLP corrections can be systematically computed and examine whether the process-independence observed at leading power extends to subleading orders. I will also present a master formula that allows one to calculate both soft and collinear subleading contributions in a generic way, enabling the computation of power corrections for high-multiplicity final states. Understanding these effects is crucial for improving the accuracy and broadening the applicability of N-jettiness slicing in collider physics.

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