XXI International Workshop on Deep-Inelastic Scattering and Related Subjects



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Nonperturbative and Parton Shower corrections in matched NLO-shower event generators

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Comparisons of experimental data with theoretical predictions for collider processes containing hadronic jets rely on shower Monte Carlo event generators to include corrections to perturbative calculations from hadronization, parton showering, multiple parton collisions. We examine current treatments of these corrections and propose alternative methods to take into account nonperturbative effects and parton showering in the context of next-to-leading-order (NLO) event generators. We point out sizeable parton-showering corrections to jet transverse energy spectra at high rapidity, and discuss kinematic shifts in longitudinal momentum distributions from initial state showering in the case both of jet production and of heavy mass production at the Large Hadron Collider.

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