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Particle Physics at LPTHE

Mardi 29 Avril 2025, 14 :00
LPTHE, library and zoom link below(Join Zoom Meeting https ://cern.zoom.us/j/61244417639?pwd=VPdQpFZQHjfG6Y0uAbRg4HJ667A7bT.1 Meeting ID : 612 4441 7639 Passcode : 048748)
Domaines : hep-ph

Titre : *Multi-partonic interactions and the twist expansion in deep inelastic scattering*

Orateur : **Zeno Capatti (University of Bern)**

Résumé : *The KLN theorem establishes that infrared divergences in parton-model diagrams cancel when summed alongside diagrams that account for the simultaneous hard interaction of multiple partons within the same hadron. In this talk, I will present a perturbative model that naturally accounts for these additional diagrams, as well as a realistic notion of twist expansion for observables computed within it. I will explore its equivalence with the parton model on general grounds and via a direct next-to-leading-order calculation of the inclusive deep-inelastic-scattering cross-section. Additionally, I will discuss the analytic tools essential for this calculation, and in particular those relating to the evaluation of iterated discontinuities of Feynman diagrams. I will conclude by outlining how to extend the model to hadronic collisions.*