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Theory of TMD factorization for thrust-dependent observables

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The study of TMDs can be extended to thrust-dependent observables, provided the role of the soft gluon radiation is properly considered.

In particular, the thrust distribution of e^+e^- annihilations into one single hadron presents a rich kinematic structure, that leads to three different factorization theorems. Each of them is associated to a distinct physics framework of transverse momentum, with the central region of the phase space specifically related to a TMD Fragmentation Function. In this talk, I present the theoretical aspects of the factorization of this process in QCD, highlighting the subtle intertwining between thrust and rapidity and how this results in a novel factorized cross section, with no direct analogous in the processes usually exploited for TMDs related studies.

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