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Correlations in Multiple Gluon Bremsstrahlung following a Hard Scattering Event

We present for the first time a quantitative analysis of multiple gluon emission in hard scattering events in the soft and collinear emission limit. These calculations specifically include the non-trivial, non-Abelian QCD corrections. We base our numerics on derivations using the spinor helicity formalism, a natural framework for evaluating tree-level Feynman diagrams in $3 + 1$ dimensional quantum field theories of massless fermions. We employ, in particular, the novel maximal helicity violating (MHV) techniques and the Britto–Cachazo–Feng–Witten (BCFW) recursion relation, to go beyond 2 gluon emission associated with hard scattering in QCD.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

MSc

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