

## Collinear functions for QCD resummations

*Wednesday, 27 April 2022 15:00 (30 minutes)*

Singular factors originating from the QCD factorisation of scattering amplitudes in soft and collinear limits play a prominent role in both organising and computing high-order perturbative contributions to hard-scattering cross sections. In this talk, I will report on recent work done in collaboration with Stefano Catani. We start from the factorization structure of scattering amplitudes in the collinear limit, and we introduce collinear functions that have a process-independent structure. These collinear functions, which are defined at the fully-differential level, can then be integrated over the appropriate observable-dependent phase space to compute logarithmically-enhanced contributions to the corresponding observable. For transverse-momentum dependent observables, we show how the collinear functions can be defined without introducing what is known as rapidity divergences in the literature. We present the results of explicit computations of the collinear functions up to NNLO.

**Primary author:** Dr DHANI, Prasanna Kumar (INFN, Genova)

**Co-author:** Prof. CATANI, Stefano (INFN, Florence)

**Presenter:** Dr DHANI, Prasanna Kumar (INFN, Genova)

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