Contribution ID: **80**   Type: **not specified**

N-jettiness soft function at NNLO in QCD

Thursday 18 April 2024 11:30 (30 minutes)

Motivated by the possibility of using advances in developing NNLO subtraction schemes to derive representations for building blocks of modern slicing methods, we derive a simple finite representation of the renormalized N-jettiness soft function at NNLO. The number of hard partons N appears as a parameter in the finite remainder. The cancellation of all infra-red and collinear singularities between the bare soft function and its renormalization constant is demonstrated analytically.

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Session Classification: Parallel 6