Contribution ID: **56**   Type: **not specified**

Generalised Antenna Functions for Higher-Order Calculations

Wednesday, 11 September 2024 11:50 (25 minutes)

In the past few years, work has been done to construct antenna functions used in the antenna subtraction scheme directly from the limits we want them to have, rather than taking them directly from matrix elements. These "designer" antenna functions introduce fewer spurious singularities, and hence improve the simplicity of subtraction terms, especially at high multiplicity. Here, we report on further work to both construct and integrate generalised antenna functions at NNLO, which further simplifies the subtraction terms, as well as making manifest their algorithmic construction. We also present validation of this "generalised designer antenna" method by comparing to the known calculation of e+e- to 3 jet at NNLO.

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Session Classification: Subtraction, slicing and loop/tree duality

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