18th International Workshop on Top Quark Physics (TOP2025)



Contribution ID: 79

Type: Poster

Two-loop Integrals for leading colour ttW production

We present the calculation of two-loop Feynman integrals contributing to NNLO QCD corrections to the production of a top-quark pair in association with a W boson at hadron colliders, in the leading colour approximation. This process constitutes a key signature at the Large Hadron Collider, and the precise prediction of its cross-section is imperative for comparisons with experimental data. In our study, we employ the method of differential equations, facilitated by using finite field methods to reconstruct the differential equation matrices. The presence of the top quark in the virtual propagators, in addition to the mass of the external W boson, gives rise to complex algebraic and analytic structures, such as nested square roots and three elliptic curves.

Field

Pheno

Author: CANKO, Dhimiter (Università di Bologna) Presenter: CANKO, Dhimiter (Università di Bologna)