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Loop-tree duality and its application to NLO computations

Higher-order computations require to combine real and virtual contributions in order to cancel infrared (IR) singularities. Loop-tree duality (LTD) allows to express virtual contributions in terms of phase-space integrals, which enables to add them directly to the real radiation terms. Thus, we obtain expressions that can be integrated in four dimensions and we avoid the introduction of IR counterterms, as done in usual subtraction methods. In this talk, we describe some technical details of this novel implementation and we explain how to carry out the computation of physical observables.

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