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One-jettiness resummation for color singlet plus jet production at hadron colliders

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We present results for the resummation of one-jettiness (Tau1) for the production of a color singlet system associated with a hard jet at hadron colliders, up to NNLL' accuracy. As a case study we focus on Z+1jet production at the LHC. We study different definitions of Tau1, depending on the frame in which one-jettiness is defined, assessing the size of the higher-order logarithmic corrections in three benchmark cases. The resulting predictions are matched to the appropriate fixed order contributions. We then proceed to study the size of the power-suppressed nonsingular corrections in the different frames, highlighting the advantages and drawbacks of using each definition of one-jettiness for a nonlocal subtraction scheme. These results pave the way to the implementation of V+jet processes into NNLO+PS Monte Carlo generators such as GENEVA.

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