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Analysis of exclusive kT algorithm in electron-positron annihilation

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We study the factorization of the diet cross section in electron positron annihilation using the generalized exclusive jet algorithm which includes the cone-type, the JADE, the kt, the anti-kt and the Cambridge/Aachen jet algorithms as special cases. In order to prove the characteristics of the jet algorithms in a unified way, we consider the generalized kt jet algorithm with an arbitrary weight of the energies, in which various types of the kt-type algorithms are included for specific values of the parameter. We analyzed the kt algorithm from the limiting behavior of the parameter. The kt algorithm breaks the factorization since the jet and the soft functions are infrared divergent and are not defined for specific values of the parameter. In our paper, we gave a phenomenological analysis using the resummed and the fixed-order results, but, in this talk, I will concentrate on the generalized jet algorithm and its characteristics.

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