SEMINARIO DEL DEPARTAMENTO DE FÍSICA TEÓRICA

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Thrust at N^3LL with Power Corrections and a Precision Global Fit for alphas(mZ)

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Abstract: I will present a method for determining alpha_s with high precision in the analysis of jet cross sections at e+ e- colliders, in particular through event-shape distributions. These have been extensively measured with small experimental uncertainties and are theoretically clean and accessible to high-order perturbative computations. We give a factorization formula for the thrust distribution based on soft-collinear effective theory, applicable to the entire distribution. The formula includes O(alpha^3) fixed-order QCD results, resummation of singular partonic terms with N3LL accuracy, hadronization effects from a universal non-perturbative soft function, bottom mass effects and QED corrections. We do not rely on a Monte Carlo generator to determine non-perturbative effects, since hadronization corrections obtained from MCs are not compatible with perturbative higher order analyses.

Más información: http://www.ft.uam.es/seminarios.html