

## Abstract

While the effects of jet substructure techniques such as trimming used to be mostly studied using Monte Carlo simulations, an analytic approach using factorization and summation was proposed in 2013 in a paper by M. Dasgupta et al.[1]. This thesis will discuss and elaborate this approach. Starting from the NLO perturbative QCD (pQCD) results, some of the fixed order phase space calculations are treated before factorization and resummation are used to obtain all order expressions for the soft-collinear (Leading Logarithmic) contributions to the differential cross section for thrust and trimmed jet mass. The general approach to pruning is briefly discussed and finally the results for thrust and trimmed jet mass are compared to numerical results generated using Pythia.