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Non-global logarithms and jet algorithms in high-p_T jet shapes. (English) Zbl 1309.81259

J. High Energy Phys. 2010, No. 8, Paper No. 064, 23 p. (2010).

Summary: We consider jet-shape observables of the type proposed recently [*S. D. Ellis* et al., Phys. Lett. B 689, No. 2–3, 82–89 (2010), doi:10.1016/j.physletb.2010.04.019; *S. D. Ellis* et al., ibid. 2010, No. 11, Paper No. 101, 83 p. (2010; doi:10.1007/JHEP11(2010)101] where the shapes of one or more high-p_T jets, produced in a multi-jet event with definite jet multiplicity, may be measured leaving other jets in the event unmeasured. We point out the structure of the full next-to-leading logarithmic resummation specifically including resummation of non-global logarithms in the leading-N_c limit and emphasising their properties. We also point out differences between jet algorithms in the context of soft gluon resummation for such observables.

MSC:

81V05 Strong interaction, including quantum chromodynamics
81T15 Perturbative methods of renormalization applied to problems in quantum field theory

Keywords:

jets; QCD

Full Text: DOI arXiv

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