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# Towards subleading power factorisation

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Calculations in perturbative QCD suffer from large logarithms that appear at all orders in the perturbation theory, endangering the perturbative description. In pursuit of precise predictions for (differential) cross sections, factorisation theorems have been established with the benefit to sum these large logarithms to all orders in perturbation theory, improving the predictive power of the theory. This procedure is well-understood at leading power in these large logarithms, but much work is still to be done at next-to-leading power (NLP). By extending known methods to resum the leading logarithm at NLP for single differential cross sections, I will show that one can compute leading logarithmic resummed cross sections differential in both a threshold variable (i.e. the limit where the radiation has little energy) and the rapidity of a final state particle. To improve these resummation formulas beyond the leading logarithm, further study needs to be done. For this purpose, I will introduce new jet functions that contribute to this subleading power behaviour. We check these definitions up to two loop against the region expansion of the QED form factor.

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