Resummation in processes with jet vetoes XIAOHUI LIU, FRANK PETRIELLO, ANL and Northwestern University — We derive a factorization theorem for the production of an arbitrary number of color-singlet particles accompanied by a fixed number of jets at the LHC. The jets are defined with the standard anti-kT algorithm, and the fixed number of jets is obtained by imposing a veto on additional radiation in the final state. The formalism presented here is useful for current Higgs boson analyses using exclusive jet bins, and for other studies using a similar strategy. We resum the large Sudakov logarithms up to the NLL accuracy, and present numerical results for Higgs boson production in association with a jet at the LHC to show how our formalism can help to reduce the theoretical uncertainties.

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