

# Santa Fe Jets and Heavy Flavor Workshop

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## Dijet event shape at the LHC in SCET

*Monday, January 11, 2016 11:00 AM (30 minutes)*

We present the calculation of the unmeasured soft function necessary for the study of dijet production in pp collisions. The calculation is independent of the choice of the jet (sub-)structure measurement. While our results are valid for all  $2 \rightarrow 2$  channels, we compute explicitly for the  $qq \rightarrow qq$  channel the color-flow matrices and plot the NNLL resummed differential cross section. A boost invariant version of angularities is introduced and the jet substructure measurement is assumed for both jets. For resumming large logarithms we use SCET factorization formula where the independent components are evolved from the natural scale to a universal scale using the corresponding RGEs. The factorization formula involves the previously unstudied unmeasured beam functions which are present in finite rapidity cuts around the beams. In addition, we implement the recently introduced soft-collinear refactorization to resum logarithms of the jet size.

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**Session Classification:** Session 2