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High precision QCD predictions for jet mass distribution

In this talk, I will firstly review recent theoretical developments on QCD resummation predictions for jet observables. Then I will introduce our recent work about resummation calculation for light-jet mass distribution. In this work, we derived factorization formula for light mass distribution which suffers from the so-called non-global logarithms not captured by standard resummation techniques. We found that a characteristic feature of non-global observables is that the soft radiation is driven by multi-Wilson line operators. Numerically, we have checked that the contributions of non-global logarithms to resummed hemisphere mass event shapes are sizeable.

Primary author: Dr SHAO, Dingyu (University of Bern)

Presenter: Dr SHAO, Dingyu (University of Bern)