Contribution ID: **12** Type: **Talk**

Non-global Logarithms Beyond Leading Colour

High-precision all-order calculations can only be performed for a narrow class of observables, which are sensitive to radiation over the entire final state phase-space. When phase-space boundaries are introduced, the resummation is affected by so-called non-global logarithms, which have an intricate all-order structure. In this talk, we present a first-principle calculation for the leading-order non-global logarithms in large-N_c limit, and some improvements for higher-order and resummed results are proposed with artificial neural networks, which can dramatically speed up needed theory calculations. And the impact of the finite-N_c corrections is discussed in the end.

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Session Classification: Talks