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# Mueller-Tang Jets at Next-to-Leading Order

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In the search for a clear signal of underlining BFKL dynamics in high-energy diffractive processes the Mueller-Tang jet observables have been proven to be a particularly fortunate choice.
Despite unavoidable unperturbative effects that can affect the rapidity gap signature good agreement was found between the BFKL predictions and the Tevatron data.
The extent of the agreement was partially unexpected considering the modest energy available and the incomplete refinement of the BFKL predictions.
On the experimental side it is clear that the higher LHC energy promise a further BFKL enhancement while, as for the theoretical analysis, the obvious path forward is to complete the NLO predictions incorporating also the most recently calculated piece, the NLO vertex.
The inclusion of the NLO vertex passes through the implementation of the momentum space BFKL eigenfunctions, which represent a novelty in this context, and introduce several technical complications that hinder the theoretical analysis.
We present progresses toward this goal, explaining the origin of such complications and the chosen solutions.

We present progress toward the theoretical understanding of BFKL effects in dijet processes in order to better isolate kinematical regimes relevant to
experiments. BFKL effects have been notoriously difficult to clearly identify in processes involving two jets. The theoretically simplest example, Mueller-Navelet or inclusive dijets, has been shown to be well described via DGLAP evolution. We describe progress in identifying new observables that more strongly depend on BFKL effects that might show clear signatures at the LHC. The cleanest experimental example is that of Mueller-Tang jets. Here dijets are produced with a large rapidity gap resulting from single Pomeron exchange. Theoretically this requires a more complicated description, but recent progress in understanding the combination of the NLL kernel and the NLO impact factors have made a theoretical prediction possibly that is consistent with current results from the LHC. For the first time all the NLO terms were taken into account in the analysis.

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