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Different forms of the kinematical constraint in BFKL

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We perform a detailed analysis of the different forms of the kinematical constraint imposed on the low x evolution. We find that all of them generate the same leading anti-collinear poles in Mellin space which agree with BFKL up to NLL order and up to NNLL in N=4 sYM. The coefficients of subleading poles vanish up to NNLL order for all constraints and we prove that this property should be satisfied to all orders. We then demonstrate that the kinematical constraints differ at further subleading orders of poles. We quantify the differences between the different forms of the constraints by performing numerical analysis both in Mellin space and in momentum space.

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