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TMD splitting functions and the corresponding evolution equation

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We use transverse momentum dependent splitting functions to construct a low- x evolution equation for gluons that takes into account the effect of non-diagonal quark-to-gluon splittings. In order to write down a consistent equation we resum virtual corrections coming from the gluon channel and demonstrate that this implies a suitable regularization of the P_{gq} singularity, corresponding to a soft emitted quark. We also note that the obtained equation is in a straightforward manner generalized to a nonlinear evolution equation which takes into account effects due to the presence of high gluon densities.

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