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Towards three loop evolution equation for GPDs

Tuesday, 31 May 2016 15:00 (30 minutes)

QCD evolution equations in minimal subtraction schemes have a hidden symmetry: One can construct three operators that commute with the evolution kernel and form an SL(2) algebra. We found explicit expressions for these operators to two-loop accuracy going over to QCD in non-integer $d = 4 - 2\varrho$ space-time dimensions at the intermediate stage. In this way conformal symmetry of QCD is restored on quantum level at the specially chosen (critical) value of the coupling. Quantum corrections to conformal generators in $d = 4-2\varrho$ effectively correspond to the conformal symmetry breaking in the physical theory in four dimensions. Our result allows one to derive three-loop evolution equations for generalized parton distributions and light-cone meson distribution amplitudes.

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