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Different forms of the generalized Crewther relation in QCD and QED: concrete consequences of analytical multiloop calculations

Monday, 5 September 2011 17:00 (25 minutes)

Different forms of the generalized Crewther relation in QED and QCD
are discussed. They follow from applyication of the method of OPE to the AVV triangle amplitude in the limit
when conformal symmetry is valid and broken by the prosedure of renormalizations in the
various variants of MS scheme, including 't Hooft prescription for
defining beta-function. Special features of the conseuences of the
advanced alpha_s^4 -order analytical calculations of the Bjorken polarized sum rule and non-singlet contribution to the Adler D-function are discussed. The results of application of conformal symmetry and the original Crewther relation for getting QED-type analytical contributions to the Ellis-Jaffe sum rule in the 4-th order of PT is also demonstrated.

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