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Adler Function, DIS sum rules and the Crewther Relation in order alpha_s^4

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We report on the first analytical, valid for a generic gauge group, calculations of the O(alpha_s^4) corrections to the Adler function and to DIS sum rules, in particular to the the Gross-Llewellyn Smith and to the Bjorken ones. We discuss a decisive check of correctness of our previous calculations of R(s) in QCD and the quenched QED beta-function at five loops, which was carried out with the help of the newly computed contributions to the DIS sum rules and the Crewther relation.

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