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Compton amplitude and the nucleon structure functions via the Feynman-Hellmann theorem

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We highlight QCDSF/UKQCD Collaboration's recent developments on computing the Compton amplitude directly via an implementation of the second-order Feynman-Hellmann theorem. As an application, we compute the nucleon Compton tensor across a range of photon momenta at an unphysical quark mass. This enables us to study the Q^2 dependence of the low moments of the nucleon structure functions in a lattice calculation for the first time. We present some selected results for the moments of the F_1 , F_2 and F_L structure functions and discuss their implications.

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