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Power divergences of the quark-chromo electric dipole moment operator with the gradient flow

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The quark-chromo electric dipole moment (qCEDM) operator is one of the possible beyond-the-standard-model (BSM) contributions to the electric dipole moment (EDM). Power divergences of lower dimensional operators are introduced to the qCEDM operator by operator mixing. We compute non-perturbatively the qCEDM power divergence coefficient with the gradient flow, allowing us to control the power divergences and perform the continuum and chiral extrapolation. We present the comparison between non-perturbative computation and perturbation theory as a function of bare and renormalized coupling.

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