

Improved bounds on heavy quark EDMs and implications for BSM

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Electric dipole moment (EDM) searches play an crucial role in constraining CP violation sources beyond the Standard Model. We derive new bounds on the EDM of charm and bottom quarks and explore its implications for different New Physics models (1905.02513), with special attention to the so-called Manohar-Wise model, with additional color-octet scalars. For this model, we compute the full set of one-loop diagrams and the enhanced higher-order effects from the Weinberg operator and Barr-Zee diagrams (2111.09397). The constraints on the model parameters from the neutron EDM are studied, finding a powerful complementarity with other flavor obseables.

Abstract

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