

Nucleon EDMs and form factors on a lattice at the physical point

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Searches for the nucleon electric dipole moments (EDMs) are at the frontier of high-precision Nuclear physics. Their discovery would be evidence of CP-violation, which is necessary to explain the origin of nuclear matter and would be a signature of new non-Standard-Model interactions. CP-violation in the quark-gluon sector can be caused by the presence of the QCD θ -term or higher-order effective quark-gluon interactions. In this talk, I will present preliminary results for nucleon EDMs induced by quark-gluon chromo-electric interactions from a recent calculation with chiral-symmetric quarks at the physical point. I will also present high-statistics results for nucleon form factors from the same calculation and briefly discuss implications for the theoretic determination of the nucleon charge radius.

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