Extrapolation Formulas for Neutron EDM Calculations in Lattice QCD DONAL O'CONNELL, Caltech, MARTIN SAVAGE, University of Washington — Lattice QCD is rapidly progressing toward being able to reliably compute the electric dipole moment of the neutron as a function of the strong CP-violating parameter $\bar{\theta}$. Present day calculations are performed at unphysical values of the light quark m asses, in volumes that are not exceptionally large and at lattice spacings that are not exceptionally small . We use chiral perturbation theory to determine the leading contributions to the neutron electric dipole moment at finite volume, and in partially-quenched calculations.

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