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## Perturbative reweighting, dilution, and low mode substitution for sea quark contribution to the neutron polarizability

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The contribution of the sea quark charges is a large uncertainty in lattice calculations of hadron polarizabilities; we present an update in our use of perturbative reweighting in the quark charge to address this issue. The difficult aspect of this calculation is the stochastic estimation of the weight factor expansion coefficients. We use aggressive (large- $N$ ) dilution, consisting of body-centered (hyper)cubic spatial dilution in addition to spin/color dilution, to minimize the contribution of large near-diagonal elements to the estimator variance. We will present results from this technique applied to our smallest-volume ensemble. For a larger ensemble we have developed a variant of low-mode subtraction in which low modes of  $\gamma_5 D$  are treated separately; this further reduces the estimator variance by an order of magnitude. We will discuss the various stochastic estimator improvement techniques and present in-progress results from the new calculation.

**Primary author:** Dr FREEMAN, Walter (George Washington University)

**Co-authors:** Prof. ALEXANDRU, Andrei (George Washington University); Prof. LEE, Frank X. (George Washington University); Mr LUJAN, Michael (George Washington University)

**Presenter:** Dr FREEMAN, Walter (George Washington University)

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