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Isoscalar electromagnetic form factors of the nucleon in $N_\mathrm{f} = 2 + 1$ lattice QCD

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We present results for the isoscalar electromagnetic form factors of the nucleon computed on the CLS ensembles with $N_\mathrm{f} = 2 + 1$ flavors of $\mathcal{O}(a)$-improved Wilson fermions and an $\mathcal{O}(a)$-improved conserved vector current. In order to estimate the excited-state contamination, we investigate several source-sink separations and apply the summation method. For the computation of the quark-disconnected diagrams, a stochastic estimation using the one-end trick is employed. By these means, we obtain a clear signal for the form factors including the quark-disconnected contributions, which have a distinguishable effect on our data.

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