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Nucleon axial, tensor, and scalar charges and σ-terms in lattice QCD

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We present results for the nucleon axial, scalar, and tensor charges, as well as the nucleon σ-terms, using four twisted mass fermion ensembles at four lattice spacings, including one at a finer lattice spacing of ~ 0.05 fm. The masses of the degenerate up and down, strange, and charm quarks are tuned to approximately their physical values. We compute both isovector and isoscalar charges and their flavor decomposition, including disconnected contributions. Systematic uncertainties associated with excited-state contamination and the continuum extrapolation are assessed using the Akaike information criterion.

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