

Lattice QCD and the Proton Radius

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With the continuing discrepancy in experimental measurements of the proton radius, *ab initio* determination of this quantity from QCD is urgently needed. At present, QCD calculations on a lattice are performed with physical values of light and strange quarks and adequate lattice volumes to permit credible control of systematic errors. One particular obstacle to computing the nucleon charge radius directly is the finite volume of the lattice, in which particle momenta are quantized making the zero-momentum limit difficult. New lattice methods have to be designed specifically to study the small-momentum nucleon structure on a lattice. I will overview the methodology and summarize the current status and future outlook for lattice QCD calculations of the nucleon charge radius.

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