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Initial nucleon structure results with chiral quarks at the physical point

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I will report initial nucleon structure results computed on lattices with 2+1 dynamical Moebius domain wall fermions at the physical point generated by RBC and UKQCD. At this stage, we evaluate only connected quark contributions. In particular, I will discuss the nucleon electric and magnetic radii, quark contributions to the nucleon spin, the nucleon axial charge, and the quark momentum fraction. From the currently available statistics, we estimate that within a year our stochastic + excited states-systematic errors for the nucleon electric radius will approach the level of the discrepancy between the two experimental values. To reduce the computational cost of our calculations, we extensively use acceleration techniques such as low-eigenmode deflation and all-mode-averaging.

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