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Scale and Scheme Independence and Position-Momentum Equivalence of Nuclear Short-Range Correlations REYNIER CRUZ TORRES, Massachusetts Institute of Technology — The study of Two-Nucleon Short-Range Correlations (SRCs) is an important topic in nuclear physics, and has significant implications to other fields. Obtaining a physical interpretation from Quantum Monte Carlo (QMC) calculations is very challenging, especially at small inter-nucleon distances (small-r) and high momenta (high-k). The Generalized Contact Formalism, which describes SRCs in nuclei, was used in this work to study the small-r and high-k behavior of nuclear ($2 \leq A \leq 40$) QMC calculations obtained using four NN potentials that differ significantly at small-r and identify which properties of SRCs are scale and scheme dependent and which are independent. We find that, while absolute abundance of SRCs (contacts) depend on the specific potential used, their ratios to d or ^{4}He do not. This implies that the SRC abundance is a Mean-Field property, and inclusive (e,e') scattering experiments are insensitive to the small-r structure of the NN interaction. We demonstrate that exclusive experiments, on the other hand, can discriminate among these different NN models. We also explore the high-k, small-r equivalence of SRCs by comparing contacts extracted independently in these two regimes, and find that pn, spin-1 pair abundances are consistently the same.

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