

Abstract Submitted
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Three-body Momentum Representation SRG Evolution and Operator Factorization¹ KYLE WENDT, University of Tennessee, Knoxville — The Similarity Renormalization Group (SRG), as applied in nuclear structure and reactions calculations, is a tool to systematically soften nuclear Hamiltonians, including three and higher body terms. It exploits a flow equation that ensures the transformations of the Hamiltonian and other operators are unitary. Previous studies of the SRG evolution of operators, and the corresponding unitary operator, have focused only on one and two body terms in the evolution, neglecting induced few body terms. Using a hyperspherical harmonic momentum representation, we are able to extend such studies to the three-body SRG evolution. We find that similar to the two body sector, the three body unitary operator also factorizes into universal low momentum, and non-universal high momentum functions, analogous to what previous studies has observed for the two body unitary operator.

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