

Abstract Submitted
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Similarity Renormalization Group Evolution of Three-Nucleon Forces in a Hyper-Spherical Plane-Wave Basis¹ KYLE WENDT, The Ohio State University — A permutationally consistent framework for computing the Similarity Renormalization Group (SRG) evolution of three-nucleon forces using hyperspherical harmonic (HH) plane waves is presented. The use of antisymmetric HH plane waves ensures unitarity in a manner comparable to prior antisymmetric harmonic oscillator SRG evolutions while keeping many of the advantages of recent momentum space evolutions; that is, deviations from unitarity are determined by the precision of the ODE solver and not by a basis truncation. Unitarity equivalence is demonstrated for the triton using several chiral two- plus three-nucleon interactions. This approach has an additional advantage over previous methods in that it allows for a clean visualization of the evolution of the three-nucleon forces, which manifests the decoupling pattern and low-momentum universality.

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