

Abstract Submitted  
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**Using Similarity Renormalization Group Methods to Analyze Optical Potentials**<sup>1</sup> MOSTOFA HISHAM, ANTHONY TROPIANO, R.J. FURNSTAH, Ohio State Univ - Columbus — Similarity Renormalization Group (SRG) operations evolve Hamiltonians by continuous unitary transformations, driving hard potentials to softer potentials by decoupling high- and low-momentum components. Using a toy model, we examine properties of the optical potential through SRG transformations and study the effects of commonly used approximation methods on the SRG-evolved potential. We also examine the prospects for using the SRG to decouple the projectile and target in high energy scattering. Finally, we extend the construction and analysis of low-resolution optical potentials from more general potentials including three-body interactions.

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