

Abstract Submitted  
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**Local Projections of Low-Momentum Potentials**<sup>1</sup> KYLE WENDT,  
The Ohio State University — Nuclear interactions evolved via renormalization group  
methods to lower resolution become increasingly non-local (off-diagonal in coordi-  
nate space) as they are softened. This inhibits both the development of intuition  
about the interactions and their use with some methods for solving the quantum  
many-body problem. By applying local projections, a softened interaction can be  
reduced to a local effective interaction plus a non-local residual interaction. At the  
two-body level, a local projection after similarity renormalization group (SRG) evo-  
lution manifests the elimination of short-range repulsive cores and the flow toward  
universal low-momentum interactions. The SRG residual interaction is found to be  
relatively weak at low energy, which motivates a perturbative treatment.

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