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Universality in SRG Evolved Potential Matrix Elements and K Matrix Equivalence¹ BRIAN DAINTON, The Ohio State University — Utilizing Similarity Renormalization Group (SRG) transformations, we examine universality in potential matrix elements of various realistic potentials. Using several modern potentials and an inverse scattering separable potential (ISSP), we observe that the diagonal matrix elements evolve to a universal form only in regions of phase-shift equivalence. The universality of off-diagonal potential matrix elements seems to require equivalence of half-on-shell K matrix elements. We discuss differences in modern realistic potentials and the ISSP for the two-nucleon problem, specifically explicit pion physics and off-shell behavior, and gain insight into the consequences for the 3- and many-body problem.

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