Abstract Submitted for the DNP08 Meeting of The American Physical Society

Calculation of Observables using the SRG Flow Equations¹ E.R. ANDERSON, Ohio State University, S.K. BOGNER, Michigan State University, R.J. FURNSTAHL, E.D. JURGENSON, R.J. PERRY, Ohio State University — The Similarity Renormalization Group (SRG) flow equations are a series of unitary transformations which can be used to to achieve different patterns of decoupling in a Hamiltonian. An SRG transformation applied to nucleon-nucleon interactions leads to greatly improved convergence properties while preserving observables. Not only does it provide a method to consistently evolve many-body potentials, but also other operators.² Here, the flow equations are applied to model and realistic nuclear Hamiltonians to calculate various observables (via the Stochastic Variational Method). Analytic properties of the corresponding operators are explored as well as properties of the general unitary transformation applied to these operators.

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