

Abstract Submitted  
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**Benchmarking Methods for Obtaining Scattering Observables from Bound-State Techniques**<sup>1</sup> MAMOON SHARAF, JAMES VARY, Iowa State University, ANDREY SHIROKOV, Pacific National University — Motivated by the need for extracting scattering observables from many-body bound-state methods we benchmark several approaches for calculating the scattering phase shifts  $\delta_l(E)$  using various model potentials. We also compute resonance energies, widths, and scattering cross sections. In particular, we compare the SS-HORSE and the variable phase methods with the approach suggested by Victor D. Efros in Phys. Rev. C 99, 034620 (2019). We investigate the selection of optimal bases for accurate computation of phase shifts using bound state techniques. We analyze the applicability of those methods to realistic many-body problems.

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