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Ab Initio Optical Potentials for Elastic Scattering at Low Energies Using the Symmetry- Adpated No-Core Shell Model[1] MATTHEW BURROWS, Louisiana State University — Ab initio optical potentials for elastic scattering at low energy is of particular interest for experiments at rare isotope beam facilities. In this work we combine the ab initio symmetry-adapted no-core shell-model results [1,2] with the Green's function evaluation of the optical potential through a self-energy calculation [3,4]. Specifically, we show preliminary results for neutron elastic scattering off Helium-4 and Carbon-12 with projectile energies between 0.5 and 10 MeV. We also discuss the role of collectivity and present comparisons to earlier models. [1] T. Dytrych, K. D. Launey, J. P. Draayer, et al., Phys. Rev. Lett. 124, 042501 (2020) [2] K. D. Launey, A. Mercenne, and T. Dytrych, Annu. Rev. Nucl. Part. Sci. (2021) [3] J. Rotureau, P. Danielewicz, G. Hagen, F. M. Nunes, and T. Papenbrock, Phys. Rev. C 95, 024315 (2017) [4] A. Idini, C. Barbieri, and P. Navrtil, Phys, Rev. Lett. 123, 092501 (2019)

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