

Abstract Submitted
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A Nucleon-Nucleus Optical Potential for Rare Isotope Beam Facilities STEPHEN WEPPNER, Eckerd College — A global nucleon-nucleus optical potential for elastic scattering has been produced¹ which replicates experimental data to high accuracy and compares well with other recently formulated global optical potentials. The calculation that has been developed describes proton and neutron scattering from target nuclei ranging from carbon to nickel and is applicable for projectile energies from 30 MeV to 160 MeV. With these ranges it is suitable for calculations associated with recent and future experiments performed by rare isotope beam accelerators. Elastic cross section and spin observables from this phenomenological potential will be compared to other optical potentials results and experimental data. Deficiencies in the theoretical models and experimental reaction database will be discussed.

¹Weppner et. al.; Phys. Rev. C 80, 034608 (2009)

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