

Abstract Submitted  
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**An Optical Model Potential for 3He Projectiles with Light Targets**<sup>1</sup> WILLIAM DEAN<sup>2</sup>, DANYANG PANG, AKRAM ZHANOV, Cyclotron Institute — In this study, we produce a optical model potential for 3He by parameterizing elastic scattering data with Lithium-6 and Carbon-12 targets at incident energies from 11MeV to 72MeV. Although previous global optical model potentials for A=3 nuclei with heavy targets have been produced, often these global potentials have difficulty reproducing experimental measurements of 3He elastic scattering from lighter nuclei, such as Lithium-6 and Carbon-12. Therefore, we focused our search on a systematic potential that can reproduce data from lighter target scattering. Using the optical model parameter search program MINOPT, we fit the elastic scattering data to produce global potential parameters. Experimental angular distributions of differential cross sections of the 3He elastic scattering from A~6 and A~12 target nuclei are compared to optical model calculations using the new parameters.

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