

## Optical model potential of $A = 3$ projectiles for 1p-shell nuclei

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A set of global optical potential parameters describing the elastic scattering of  $A = 3$  particles  ${}^3\text{He}$  and  ${}^3\text{H}$  from 1p-shell nuclei, HT1p, is obtained by simultaneously fitting 118 sets of experimental data of  ${}^3\text{He}$  and  ${}^3\text{H}$  elastic scattering from  ${}^9\text{Be}$ ,  ${}^{10}\text{B}$ ,  ${}^{11}\text{B}$ ,  ${}^{12}\text{C}$ ,  ${}^{13}\text{C}$ ,  ${}^{14}\text{C}$ ,  ${}^{14}\text{N}$ ,  ${}^{15}\text{N}$ ,  ${}^{16}\text{O}$ ,  ${}^{17}\text{O}$ , and  ${}^{18}\text{O}$  within the incident energy interval  $4 \leq E \leq 118.5$  MeV and 25 sets of elastic scattering data on  ${}^6\text{Li}$  and  ${}^7\text{Li}$  targets from  $3 \leq E \leq 44$  MeV. HT1p is found to be superior to GDP08 [1], which is a systematic potential designed for the heavy-target region, in reproduction of the angular distributions of elastic scattering cross sections of  ${}^3\text{He}$  and  ${}^3\text{H}$  from 1p-shell nuclei at energies below 100 MeV. Above 100 MeV GDP08 is found to be better than HT1p.

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[1] D.Y. Pang, P. Roussel-Chomaz, H. Savajols, R.L. Varner, and R. Wolski, Phys. Rev. C **79**, 024615 (2009)