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Elastic scattering of $^{10}\text{B} + ^{119}\text{Sn}$: optical model analysis at energies around the Coulomb barrierW A Y Hatano, L R Gasques, V Scarduelli, L C Chamon,
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Abstract

This work investigates the elastic scattering of ^{10}B on ^{119}Sn at several energies around the Coulomb barrier. The experimental angular distributions are analyzed within the optical model framework using two different nuclear interactions: the São Paulo potential (SPP) and its updated version, SPP2. The analysis shows that SPP2 provides a better overall description of the data, with the main differences between the two interactions stemming from the matter density adopted for the ^{10}B projectile. The optical potentials obtained in this study are expected to serve as a reliable starting point for describing cross sections of other reaction channels for this system within the coupled-channel formalism.

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