Abstract Submitted
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Excitation processes in proton collisions with Li atoms TECK-GHEE LEE, M.S. PINDZOLA, Auburn University — Excitation processes in proton collisions with Li are studied by direct solution of the time-dependent Schrödinger equation in cylindrical coordinates. Within a straight-line trajectory approximation, a time-dependent close-coupling method based on an expansion of a one-electron 3D wavefunction in rotational functions is used to calculate excitation cross sections at incident energies ranging from 10 keV to 200 keV. A peudopotential method is used to treat the $1s^2$ core. The time-evolved wavefunction which includes all the inelastic processes, including charge transfer, excitation and ionization, is projected onto the lattice states to obtain excitation cross sections for the Li(2s) to Li(2p,3l,4l) transitions. Results are compared with the existing data. This work was supported in part by grants from US DOE. Computational work was carried out at NERSC in Oakland, California.

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