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Electron-Impact Double Ionization of the Be Atom[1] M.S. PINDZOLA, C.P. BALLANCE, J.A. LUDLOW, F. ROBICHEAUX, Auburn University, J. COLGAN, LANL — The time-dependent close-coupling (TDCC) and R-matrix with pseudo-states (RMPS) methods[1] are used to calculate the electron-impact double ionization cross section from the $1s^2 2s^2$ ground configuration of the Be atom. The TDCC calculations for the double ionization of the $2s^2$ subshell are carried out at incident energies ranging from 40 eV to 100 eV. The RMPS calculations are carried out from the threshold at 27.5 eV to 50 eV. The cross sections from the two non-perturbative methods are found to be in good agreement at 40 eV. Additional configuration-average distorted-wave calculations for the single ionization of the $1s^2$ subshell are carried out from the threshold at 124 eV to 500 eV. Subsequent autoionization of the $1s2s^2$ configuration of Be^+ leads to double ionization. The direct double ionization cross section is found to peak at 1.0 Mb around 70 eV, while the indirect double ionization cross section is found to peak at 2.0 Mb around 400 eV.

[1] D. C. Griffin and M. S. Pindzola, Adv. Atm. Mol. Opt. Phys. **54**, 203 (2006).

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