

Abstract Submitted
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Electron Impact Excitation of Transitions in C^{+1} SWARAJ TAYAL,
Clark Atlanta University — The B-spline R-matrix method in the framework of Breit-Pauli approximation is used to investigate the electron impact excitation of forbidden and allowed transitions in C^{+} . An accurate description of the target wave functions has been obtained in a multiconfiguration Hartree-Fock approach with flexible nonorthogonal orbitals. The 42 fine-structure levels of the $2s^22p$, $2s2p^2$, $2s^23l$ ($l = 0-2$), $2p^3$, $2s^24l$ ($l = 0-3$), $2s2p3s$ and $2s^25l$ ($l = 0-2$) configurations have been included in the scattering calculation. A second calculation with lowest 35 levels in the close-coupling expansion has also been carried out to check channel coupling effects on collision strengths. The continuum functions have been represented by the use of B-spline basis [1]. The present cross sections for the resonance $^2P^o - 2s2p^2$ 2D , 2S and intercombination $^2P^o - 2s2p^2$ 4P transitions are in very good agreement with the electron-energy-loss merged beams experiment. Oscillator strengths and transition probabilities for C II lines normally compare very well with previous calculation. [1] O. Zatsarinny, Comput. Phys. Commun. 174, 273 (2006).

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Swaraj Tayal
Clark Atlanta University

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