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**Electron-impact excitation of Mg V and Si VII** A.M. SOSSAH, S.S. TAYAL, Clark Atlanta University — Transition probabilities and effective collision strengths for electron-impart excitation are calculated for Mg V and Si VII ions. The calculations are performed in the close-coupling approximation using the B-spline Breit-Pauli R-matrix method. The multi-configuration Hartree-Fock method with term-dependant non-orthogonal orbitals is employed for an accurate description of the target wave functions. For each ion 86 fine-structure levels belonging to the 44 $LS$ states of $2s^2 2p^4$, $2s2p^5$, $2p^6$, $2s2p^3 3s$, $2s2p^3 3p$, and $2s2p^3 3d$ configurations are included in the close-coupling approximation; this leads to 3655 possible fine-structure transitions. The effective collision strengths are obtained by averaging the electron collision strengths over a Maxwellian distribution of velocities. Our results are compared with previous theoretical results and available experimental data. Overall, we reached a good agreement with measured excitation energies and other calculated oscillator strengths. This work was supported by NASA grant NNX11AB62G from the Solar and Heliophysics Program.

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