Electron Collision Radiative Parameters for O^{2+1} SWARAJ TAYAL, Clark Atlanta University — The improved radiative and collision atomic parameters calculations for O^{2+} have been performed using the B-spline Breit-Pauli R-matrix method. The flexible non-orthogonal sets of spectroscopic and correlation radial functions are employed for an accurate representation of the target states and scattering functions. The close-coupling expansion includes 126 bound levels covering all possible terms of the ground $2s^2 2p^2$ and excited $2s 2p^3$, $2p^4$, $2s^2 2p3s$, $2s^2 2p3p$, $2s^2 2p3d$, $2s 2p^2 3s$, $2s^2 2p4s$, $2s^2 2p4p$, $2s 2p^2 3p$, $2s 2p^2 3d$, $2p^3 3s$, $2p^3 3p$, and $2p^3 3d$ configurations. The calculated excitation energies of the target levels are in excellent agreement with experiment and represent an improvement over the previous calculations. The present results of cross sections are compared with a variety of other close-coupling and distorted-wave calculations. The oscillator strengths and transition probabilities are in good agreement with other theories and available experimental data. The present cross sections are in good agreement with other theories for many transitions.

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