

Abstract Submitted
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Excitation of Atomic Nitrogen by Electron Impact¹ SWARAJ TAYAL, Clark Atlanta University, OLEG ZATSARINNY, Drake University — The B-spline R-matrix method with a pseudostates approach has been used to calculate electron collision excitation cross sections for the resonance $2p^3\ ^4S^o - 2p^23s\ ^4P$, $2s2p^4\ ^4P$, $2p^24s\ ^4P$, $2p^23d\ ^4P$ and forbidden $2p^3\ ^4S^o - 2p^3\ ^2D^o$, $^2P^o$ transitions for incident electron energies from threshold to 100 eV. The effect of coupling to the continuum is included through the use of pseudostates. The close-coupling expansion contains 21 spectroscopic bound states and 18 pseudostates. The pseudostates are chosen to account for most of the dipole polarizabilities of initial and final states. The non-orthogonal orbitals are used to describe the term dependence of radial functions for an accurate representation of target states. Measured absolute direct excitation cross sections of nitrogen are reported by Doering and coworkers from Johns Hopkins University. Our results will be compared with the measured cross sections.

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