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Differential Cross Sections for the Electron Impact Excitation of Molecular Nitrogen[1] MURTADHA A. KHAKOO, California State University Fullerton CA 92834, S. WANG, California State University Fullerton, CA 92834, PAUL V. JOHNSON, CHARLES P. MALONE, I. KANIK, Jet Propulsion Laboratory-Caltech, CA 91109, CALIFORNIA STATE UNIVERSITY, FULLERTON, CA 92834 COLLABORATION, JET PROPULSION LABORATORY-CALTECH, PASADENA, CA 91109 COLLABORATION — New measurements of differential cross-sections (DCS) for electron impact excitation of the a" $^1\Sigma_g^+$, b,c,o $^1\Pi_u$ and b',c' $^1\Sigma_u^+$. are presented. The measurements were taken at incident electron energies of 17.5eV,20eV, 30eV, 50eV and 100eV and for scattering angles of 3^o to 130^o in closely spaced intervals. From the data we observe a cusp-like behavior in the DCS of the a" $^1\Sigma_g^+$ excitation at small scattering angles, hitherto undetected by past measurements and were able to get estimated optical oscillator strengths for the b,c,o,b' and c' excitations. Comparison of the present results with those available in the literature will also be presented.

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