Electron Impact Excitation of Molecular Nitrogen\textsuperscript{1} MURTADHA A. KHAKOO, SHIYANG WANG, Cal State University Fullerton, CA 92834, CHARLES P. MALONE, PAUL V. JOHNSON, ISIK KANIK, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109 — We present differential cross-sections for electron impact excitation of the N\textsubscript{2} b,c,o \textsuperscript{1}Π\textsubscript{u} and b',c' \textsuperscript{1}Σ\textsubscript{g}\textsuperscript{+} from the X\textsuperscript{1}Σ\textsubscript{g}\textsuperscript{+} ground state at 17.5eV, 20eV, 30eV, 50eV and 100eV for scattering angles from 5° to 130°. The DCSs were obtained by unfolding the energy loss spectrum of N\textsubscript{2} taking into account Rydberg-valence mixing between these levels. These DCSs constitute the first systematic study of the high-lying states of N\textsubscript{2} of importance in plasma and astrophysics applications.

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