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Excitation of CO[2] by electron impact[1] Y.-K. KIM, NIST, H. KATO, M. HOSHINO, H. TANAKA, Sophia Univ., Tokyo — The BEf scaling[2] —which converts plane-wave Born (PWB) cross sections for electron-impact excitations of atoms to accurate results at low incident electron energy T—is also found to provide results in excellent agreement with the new energy-loss experimental data for the A $^1\Pi(v' = n) \leftarrow$ X $^1\Sigma(v'' = 0)$, $n = 0$–7 excitations of the CO molecule at $T =$ 100 eV. The new experimental data were measured at the Sophia Univ. using the same apparatus desribed in Green et al.[3] The unscaled PWB cross sections for the individual vibrational excitations were obtained by integrating the generalized oscillator strengths published by Chandranupong et al.[4] The dipole f values and excitation energies compiled by Berkowitz [5] are used to apply the BEf scaling to the integrated (as opposed to angular distributions) PWB cross sections. Experiment at lower T is in progress at Sophia Univ. to provide additional test of the BEf scaling for molecules.

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