Electron Excitation and Ionization of the Chlorine Molecule
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Despite its technological importance, many of the emission systems in molecular chlorine have received surprisingly little study. I will present our experimental measurements of absolute emission cross sections for 10 to 700 eV electrons incident on chlorine molecules. The emission systems include the dominant Cl\textsubscript{2}^+ \text{A}^2\Pi - \text{X}^2\Pi and the Cl\textsubscript{2} systems at 256 nm and 306 nm. The A - X system possesses a very dense band spectrum and I will discuss our efforts to extract individual vibrational cross sections and discuss this system's contribution to the total chlorine ionization cross section.