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Abstract for an Invited Paper
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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 $\text{Cl}_2^+ A^2\Pi - X^2\Pi$ and the Cl_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.