THE INFRARED EMISSION SPECTRUM OF DCL

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The vibrational rotational emission spectrum of DCl was recorded with a Fourier transform spectrometer; line positions for the 1-0, 2-1, 3-2 and 4-3 bands of $D^{35}Cl$ and the 1-0, 2-1 and 3-2 bands of $D^{37}Cl$ were measured. The two sets of data were combined with previously measured submillimeter wave pure rotational transitions to obtain Dunham constants. A combined isotopomer analysis of data for all four isotopic forms of HCl was also performed combining these new data with analogous literature results for $H^{35}Cl$ and $H^{37}Cl$, to yield Born-Oppenheimer breakdown correction terms for this system. The results of similar analyses of HF and HBr allowed a comparison of Born-Oppenheimer breakdown correction terms for HF, HCl and HBr.