A LASER INDUCED FLUORESCENCE STUDY OF JET-COOLED HCCl IN THE REGION 515-615 NM

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We report new measurements of the laser induced fluorescence spectra of the HCCl A^1A''-X^1A'system in the 515-615 nm region. The spectra were obtained under jet-cooled conditions using a pulsed discharge source. The pure bending transitions 2_0^n with n=5-8 and combination bands $2_0^n 3_0^m$ with n=4-6 and m=1,2 have been measured and the rotational structure fit to a asymmetric top Hamiltonian, which yielded precise values for the band origins and effective rotational constants. Consistent with previous work, only sub-bands with K_a' = 0 appear strongly in the spectra. Fluorescence lifetimes were measured for rotational levels in each band, and the energy dependence of the lifetimes will be discussed.