# ELECTRONIC SPECTROSCOPY OF THE $A^1A'' - X^1A'$ SYSTEM OF DCF

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To further investigate the Renner-Teller effect and excited state barriers to linearity and dissociation in the simplest singlet carbene, HCF, we measured fluorescence excitation spectra and lifetimes of the pure bending levels $2_0^n$ and combination bands $1_0^1 2_0^n$ and $2_0^n 3_0^1$ in the $A^1A''$-$X^1A'$ system of the deuterated isotopomer, DCF. The spectra were measured under jet-cooled conditions using a pulsed discharge source, and rotationally analyzed to yield precise values for the band origins and rotational constants. The derived $A^1A''$ state parameters are compared with our previous results for HCF, and with the predictions of *ab initio* electronic structure theory.