MODE SPECIFIC DYNAMICS IN THE PREDISSOCIATED, QUASILINEAR $B^1 A'$ STATE OF CHF PROBED BY OPTICAL-OPTICAL DOUBLE RESONANCE SPECTROSCOPY

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We have recently observed transitions to the predissociated, quasilinear $B^1 A'$ state of a halocarbene, CHF, using a fluorescence dip detected optical-optical double resonance technique via the $A^1 A''$ state.\textsuperscript{a} By excited selected rotational levels in intermediate states belonging to the progressions $2_{0}^6$, $1_{1}^{12}_{2}^0$, and $2_{0}^{5}_{0} 3_{0}^{1}$, a variety of $B^1 A'$ state levels have been observed, extending to an energy of 7000 cm\textsuperscript{-1} above the $B^1 A'$ state origin. In this talk, we will focus on the dynamics of the $B^1 A'$ state. All of the observed lines are predissociated, as evidenced by Lorentzian lineshapes, and the linewidths increase with increasing energy. A pronounced mode specificity is observed; levels containing CF stretching excitation dissociate more rapidly than nearly isoenergetic bending levels. The implications of these results for the dissociation mechanism will be emphasized.