

## STIMULATED EMISSION PUMPING SPECTROSCOPY OF THE $X^1A'$ STATE OF CHF

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Building upon the seminal work of Suzuki and Hirota<sup>a</sup>, in our first application of stimulated emission pumping spectroscopy to a halocarbene we report the spectroscopy of the  $X^1A'$  state of CHF, previously examined by our group using single vibronic level emission spectroscopy.<sup>b</sup> By exciting selected rovibronic levels in the  $A^1A''$  state belonging to the progressions  $2_0^n$ ,  $1_0^1 2_0^n$ , and  $2_0^n 3_0^1$ , a variety of  $X^1A'$  state levels have been observed, including several not previously observed in our emission study. The data provide precise ground state rotational constants and term energies, allowing a more complete modeling of the extensive anharmonic interactions in the  $X^1A'$  state. The analysis of these interactions and the continuing search for triplet state levels will be emphasized.

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<sup>a</sup>T. Suzuki and E. Hirota, *J. Chem. Phys.* 88, 5541 (1986).

<sup>b</sup>H. Fan, C. Mukarakate, M. Deselnicu, C. Tao, and S. A. Reid, *J. Chem. Phys.* 123, 014314 (2005).