

THE CONFORMER SPECIFIC ROOM-TEMPERATURE ROTATIONAL SPECTRUM OF ALLYL CHLORIDE UTILIZING STRONG FIELD COHERENCE BREAKING

ERIKA RIFFE, ERIKA JOHNSON, STEVEN SHIPMAN, *Department of Chemistry, New College of Florida, Sarasota, FL, USA*; SEAN FRITZ, ALICIA O. HERNANDEZ-CASTILLO, TIMOTHY S. ZWIER, *Department of Chemistry, Purdue University, West Lafayette, IN, USA*.

The 8-26.5 GHz conformer specific rotational spectrum of allyl chloride was recorded in a room temperature spectrometer using the strong field coherence breaking (SFCB) technique.^a Allyl chloride, which has *cis*- and *skew*- conformers as well as ³⁵Cl and ³⁷Cl isotopologues, was chosen as the initial molecule for testing this method in the room temperature chirped pulse waveguide setup.^b This data was compared to results from the SFCB technique performed at Purdue University using a jet expansion at 1-2K. The application of this and other methods for the simplification of room temperature spectra will be discussed.

^aHernandez-Castillo, A.O., Abeysekera, C., Hays, B.M., Zwier, T.S. "Broadband Multi-Resonant Strong Field Coherence Breaking as a Tool for Single Isomer Microwave Spectroscopy." J. Chem. Phys. 145, 114203 (2016).

^bReinhold, B., Finneran, I.A., Shipman, S.T. "Room temperature chirped-pulse Fourier transform microwave spectroscopy of anisole." J. Mol. Spec. 270, 89 (2011).