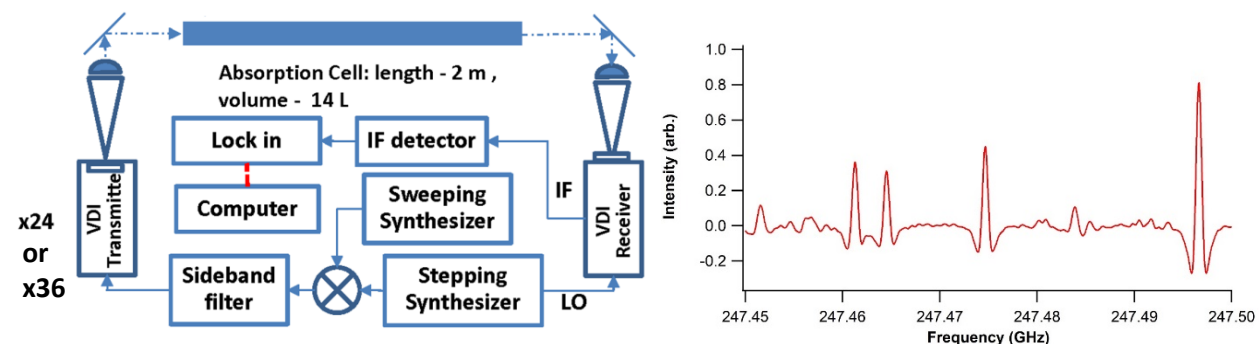
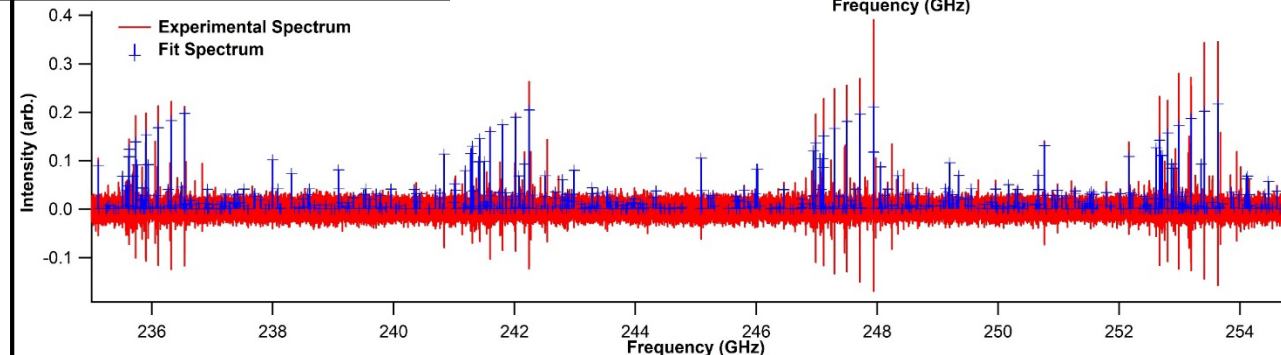
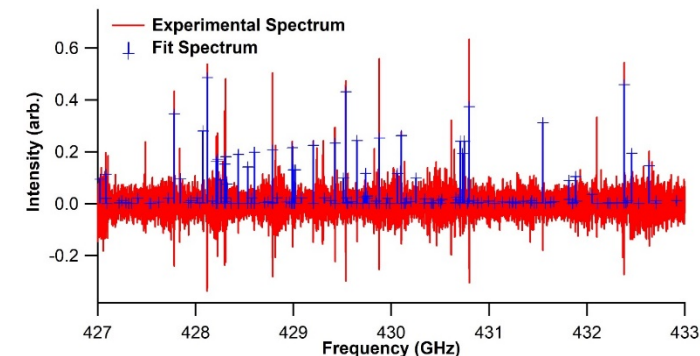


- An experimental spectrum of isoprene was recorded in a 200-500 GHz range with line frequency accuracy of ~ 50 kHz.
- The ground vibrational state of the trans conformer of isoprene was fitted to the parameters of effective rotational Hamiltonian with experimental accuracy.

THE MILLIMETER- AND SUBMILLIMETER-WAVE SPECTROSCOPY OF ISOPRENE

Daniel Tyree and Ivan Medvedev WSU



Parameter	Trans Isoprene		Gauche Isoprene	
	Experimental Values	Previous Work (Lide [4])	Previous Work (Porterfield [6])	
A (MHz)	8527.04199(82)	8526.95 ±0.05	0 ⁺ 8820.2427(104)	0 ⁻ 8819.7131(107)
B (MHz)	4175.26682(153)	4175.22 ±0.05	3909.5178(50)	3909.5422(48)
C (MHz)	2852.150938(195)	2852.14 ±0.05	2850.04793(305)	2850.16885(312)
Δ_J (kHz)	0.69583(38)		D_J (kHz)	0.656(52)
Δ_{JK} (kHz)	3.84251(181)		D_{JK} (kHz)	3.57(37)
Δ_K (kHz)	1.31283(181)		D_K (kHz)	9.35(181)
δ_J (kHz)	2.76226(168)		d_1 (kHz)	-0.107(38)
δ_K (kHz)	0.214835(187)		d_2 (kHz)	-0.1189(184)
RMS Error (kHz)	64.037			48
# Lines	117			94