JET-COOLED HIGH RESOLUTION INFRARED SPECTRUM OF THE ν_6 AND $2\nu_2$ BANDS OF CH_2F_2

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A jet-cooled high resolution infrared spectrum was recorded in a slit-jet apparatus in the asymmetric C-H stretching region of CH_2F_2 between 3002 and 3036 cm^{-1}. Approximately 630 transitions were detected of which about 250 were assigned to the ν_6 band and about 170 were assigned to the $2\nu_2$ overtone at a resolution of $\approx 0.002\ \mathrm{cm}^{-1}$. Seven sub-bands were identified in each vibrational band. The assigned transitions were fitted to a Watson Hamiltonian for an asymmetric rotor (κ = -.932) in the A-reduced I^r representation. The fitted upper state constants in cm^{-1} for each band are tabulated below. Numbers in parantheses indicate the precision of the fit to two standard deviations in the last digit.

Parameter	ν_6	$2\nu_2$
ν_0	3014.05028(12)	3026.2297(2)
A'	1.62868(4)	1.63396(6)
B'	0.354165(5)	0.353673(10)
C'	0.308852(3)	0.311833(10)
$\Delta'_j \times 10^{-6}$	0.417(12)	0.41(9)
$\Delta'_{jk} \times 10^{-5}$	-0.16(5)	-0.16(9)
$\Delta'_k \times 10^{-4}$	0.21(3)	-0.15(4)
$\delta'_j \times 10^{-7}$	0.93(9)	