

**LINE-BY-LINE INTENSITY MEASUREMENTS OF METHYL FLUORIDE  
IN THE  $\nu_2$  and  $\nu_5$  BANDS**

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Systematic measurements of line intensities in the  $\nu_2$  and  $\nu_5$  bands of CH<sub>3</sub>F were performed for the first time for 2040 transitions using a mono-spectrum fitting technique utilizing Voigt and Rautian profiles. The spectra are recorded at room temperature for eight pressures of CH<sub>3</sub>F from 0.1247 to 2.5080 Torr using the Bruker IFS125HR Fourier Transform spectrometer located at the LISA facility in Créteil. Strong intensity perturbations were observed and analyzed, accounting for the strong Coriolis coupling  $\nu_2$  and  $\nu_5$  bands and l-type interactions in the  $\nu_5$  band. The transition dipole moments squared were determined for each line, allowing determination of the vibrational transition moment and the Herman-Wallis coefficients of each band using the Aliev<sup>1</sup> and Watson<sup>2</sup> models. Comparison with data available in the literature permits testing the validity of these models applied to the  $\nu_2/\nu_5$  dyad system, strongly affected by resonances.

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<sup>1</sup>MR. Aliev, D. Papousek and S. Urban, *J. Mol. Spectrosc.*, **124**, 285-325, (1987)

<sup>2</sup>JKG. Watson, *J. Mol. Spectrosc.*, **153**, 211-224, (1992)