LINE-BY-LINE INTENSITY MEASUREMENTS OF METHYL FLUORIDE IN THE ν_2 and ν_5 BANDS

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Systematic measurements of line intensities in the ν_2 and ν_5 bands of CH_3F 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_3F 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 ν_2 and ν_5 bands and l-type interactions in the ν_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[1] and W*at*son[2] models. Comparison with data available in the literature permits testing the validity of these models applied to the ν_2/ν_5 dyad system, strongly affected by resonances.

[1]MR. Aliev, D. Papousek and S. Urban, *J. Mol. Spectrosc*, **124**, 285-325, (1987)
[2]JKG. W*at*son, *J. Mol. Spectrosc*, **153**, 211-224, (1992)