THE REGION OF 3μm FOR THE MOLECULE CH_3CL

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Methyl chloride is of interest for atmospheric applications, since this molecule is directly involved in the catalytic destruction of ozone in the lower stratosphere. At the present time no complete and accurate spectroscopic line list is available in atmospheric databases such as HITRAN or GEISA. High resolution FT spectra (Bruker IFS 120, unapodized FWHM resolution of 0.001 cm^{-1}) of natural methyl chloride CH_3Cl have been recorded at the LADIR. The 3-μm spectral region containing the ν_1, $3\nu_6$, ν_4 and $2\nu_5$ inteacting bands as well as several dark states has been studied for both $^{12}CH_3{}^{35}Cl$ and $^{12}CH_3{}^{37}Cl$ isotopologues. The goal of this work is to generate a complete and accurate line list for atmospheric applications. The preliminary study will be presented : using the recorded spectra and a theoritical calculation, new assignments have been performed for the whole 3-μm spectral region. Moreover, a multispectrum fitting procedure has been used to retrieve absolute line positions and intensities from 6 experimental spectra recorded at different pressures of CH_3Cl.