FM SPECTROSCOPY OF THE WATER VAPOR AT $1.3\,\mu\mathrm{m}$

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In our laboratory we are particularly interested in developping sensitive spectroscopic techniques for the aim of study of reactive species. Moreover, the possibility of quantitative concentration of intermediates is a major key of understanding reactions mechanisms. For this purpose we set up a frequency-modulation absorption spectrometer based on a diode laser source working at $1.3\,\mu\mathrm{m}$. Our first results concern the water molecule whose some known transitions (polyad $2\,\nu$) are used to qualify the apparatus in term of linear response, sensitivity and absolute concentration by thermally controlling the water vapor pressure.