RAIR SPECTRA OF CO_2/H_2O ICES: THEORETICAL PREDICTION AND EXPERIMENTAL RESULTS

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As a continuation of the previous talk, we present a spectroscopic study of mixed H_2O/CO_2 ices of possible astrophysical interest, prepared by various vapour deposition methods under different experimental conditions. Laboratory studies were performed using Fourier Transform Reflection Absorption Infrared Spectroscopy (RAIRS) and different polarizations of the incident beam light. Changes on the spectra allow us to investigate the different structures formed depending on the process of deposition and temperature. Theoretical DFT calculations, using the SIESTA program, of the vibrational properties of crystalline $^{12}CO_2$ and $^{13}CO_2$ will be compared with the experimental spectra when bulk-like CO_2 is formed.