NEW HIGH RESOLUTION ANALYSIS OF D_2CO IN THE 8-12 μm REGION BY FOURIER TRANSFORM SPECTROSCOPY

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A new analysis of the ν_3, ν_6, and ν_4 interacting bands of D_2CO has been carried out in the 8-12 μm region using high resolution Fourier transform spectra recorded at Giessen. As compared to the previous study of these bands,[a] improvements were obtained in the present analysis. In order to get the upper state parameters (band centers, rotational and coupling constants), the resulting ν_3, ν_6, and ν_4 experimental energy levels were introduced in a least squares fit calculation together with the microwave measurements available in the literature. In this calculation, which allowed to reproduce both the infrared and microwave measurements within their experimental accuracies, the A- B- and C- Coriolis type interactions involving ν_4 and ν_6, ν_3 and ν_4, and ν_3 and ν_6 respectively were explicitly taken into account.

[a] K. Nakagawa, R. H. Schwendeman, and J.W.C. Johns, J. Mol. Spectrosc. 122, 462 (1987).