

SPECTROSCOPIC PARAMETERS OF H₂S POLYADS BETWEEN 600 AND 8000 cm⁻¹

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The absorption spectra of H₂S from 0.8 to 5 μm were recorded with spectral resolutions of 0.006, 0.012 and 0.021 cm⁻¹ using the Fourier transform spectrometer at Kitt Peak National Observatory. Twenty bands were previously assigned so that accurate band origins and vibrational parameters could be determined [1].

The present paper will describe the analyses of the rotational structure of resonating H₂S states between 3400 and 8000 cm⁻¹. The energy levels of the second triad (3700 cm⁻¹), first (5100 cm⁻¹) and second (6200 cm⁻¹) hexade and the first decade (7500 cm⁻¹) of H₂³²S, H₂³⁴S and H₂³³S will be reported along with Watson-type II Hamiltonian parameters. Intensities measurements and dipole moment parameters for the lower polyad bands will also be given. Finally, the fourfold clustering of rotational levels belonging to the symmetric and asymmetric components of local mode manifolds at a higher degree of stretching excitation will be discussed.

1. A. D. Bykov, O. V. Naumenko, M. A. Smirnov, L. N. Sinitza, L. R. Brown, J. Crisp, D. Crisp, *Can. J. Phys.* 72, 989-1000 (1994).

Part of the research reported in this paper was performed at the Jet Propulsion Laboratory, California Institute of Technology, under contract with the National Aeronautics and Space Administration. The work in Tomsk was supported in part by Grant number N NY3000 from the International Science Foundation.

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Time required: 15 min.

session: 4