SPECTROSCOPIC PARAMETERS of I2 S POLYADS BETWEEN 3400 AND 8000 cm\(^{-1}\)


The absorption spectra of I2S from 0.8 to 5 \(\mu\)m 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 I2S 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\(^{-1}\)) hexad and the first decade (7500 cm\(^{-1}\)) of I2S will be reported along with Watson-type 11-atom Hamiltonian parameters. Intensities measurements and dipole moment parameters for the lower polyad hands 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.


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