LINE PARAMETERS OF WATER BETWEEN 9650 AND 11400 cm^{-1}

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For atmospheric applications, over 3000 line positions and intensities of water have been remeasured by least-squares curve-fitting of 17 water spectra that cover three orders of magnitude of intensity. In addition, over 500 air-broadened Lorentz widths and 450 pressure-induced shifts in positions have been obtained using 9 spectra of air + water mixtures at room temperature. The broadening measurements primarily involve the strongest transitions of three parallel vibrational bands (121), (201) and (003) near 10328, 10513 and 11032 cm^{-1}, respectively. All data have been recorded at unapodized resolutions of 0.012 and 0.020 cm^{-1} using the McMath Fourier transform spectrometer located at Kitt Peak in Arizona. The optical paths range from 2.4 m to 434 m with maximum sample pressures of 16 Torr for water and 592 Torr for air. Comparisons with previous studies show that intensities determined by different investigators are in general agreement. The rotation-vibration dependences of the broadening coefficients will also be discussed. [a]

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