

**LINE PARAMETERS OF WATER
at 0.94 μm**

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ABSTRACT

To support the interpretation of remote sensing instruments that use water features near $0.94 \mu\text{m}$, the water line parameters have been measured using sixteen laboratory spectra of pure water and nine spectra of water + air mixtures recorded at 0.012 and 0.02 cm^{-1} resolution with the McMath Fourier transform spectrometer at the National Solar Observatory located at Kitt Peak. Over 3300 line positions and intensities between 9650 and 11400 cm^{-1} and 507 air-broadened widths and 462 pressure-induced shifts in positions between 10150 and 11190 cm^{-1} have been obtained at room temperature for the main isotope H_2^{16}O . The numbers of width measurements involving the parallel bands are 108 for (121); 192 for (201) and 86 for the (003) upper states; for the perpendicular bands numbers of widths are 4 for (022); 78 for (300) and 38 for the (102) upper states. These empirical values have been combined with calculated positions and intensities of H_2^{18}O and H_2^{17}O and with available broadening coefficients from other spectral regions to form a new composite database. The sum of 5002 transition intensities for the region is $2.588 \times 10^{-20} \text{ cm}^{-1}/(\text{molecule} \times \text{cm}^{-2})$ at 296 K. This new compilation appears in the 2000 edition of HITRAN.