SELF-BROADENED WATER FROM 5 TO 15 MICRONS

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The self-broadened halfwidths and pressure shifts of water have been obtained using the McMath Fourier transform spectrometer at Kitt Peak National Observatory / Solar National Observatory. Over 1200 vibration-rotation transitions involving the pure rotational and ν_2 bands of the main isotope have been measured at room temperature up to $J = 17$ and $K_a = 9$. The widths range from 0.52 to 0.1 cm^{-1}/atm and the pressure shifts from +0.05 to –0.05 cm^{-1}/atm. Additional measurements of isotopic transitions reveal no detectable differences for the widths of the three main isotopes of water vapor.