DEUTERIUM ENRICHED WATER VAPOR FOURIER TRANSFORM SPECTROSCOPY: THE 8800-10800 cm^{-1} SPECTRAL REGION.

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Our work is dedicated to the spectroscopy of the stable isotopologues of water vapor [a] ($H_2^{16}O$, $H_2^{17}O$, $H_2^{18}O$, HDO and D_2O). Considering the current atmospheric and spectroscopic interest for these species [b c d e f g] , we present line parameters of HDO and D_2O in the near infrared.

Fourier transform absorption spectra of H_2O:HDO:D_2O mixtures have been recorded at different partial pressures and at room temperature using a 50 m base long multipass White cell and absorption pathlength up to 600 m. The assignment of the lines to the different isotopologues was based on ratios between spectra at different relative abundances. Accurate partial pressures were determined from ratios between line areas. The rovibrational line identification was obtained with the help of the last Partridge and Schwenke calculations [h i]. Absorption lines belonging to 23 cold bands and 5 hot bands of HDO and to 21 vibrational bands of D_2O were observed. A detailed linelist comprising absolute positions, intensities, self-broadenings and assignments has been obtained.

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