CO_2-BROADENED H_2O IN THE PURE ROTATION AND ν_2 FUNDAMENTAL REGIONS.

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The CO_2-broadened water coefficients (half-widths, line shifts and temperature dependence of the widths) are predicted using a fully complex Robert-Bonamy formulation for the 937 allowed and forbidden perpendicular type transitions of (000)-(000) between 200-900 cm^{-1} in order to facilitate atmospheric remote sensing of the Mars and Venus. In addition, empirical Lorentz linewidths and pressure-induced frequency-shifts of CO_2-broadened $H_2{}^{16}O$ are obtained at room temperature for 257 perpendicular transitions of the (010)-(000) fundamental. For this, calibrated spectra recorded at 0.0054 cm^{-1} resolution are measured assuming Voigt line shapes. For transitions between 1287 and 1988 cm^{-1} with rotational quanta up to J = 13 and Ka = 6, the widths vary from 0.045 to 0.212 cm^{-1} atm^{-1} at 300 K; the pressure-shifts are quite large and range from -0.0386 to +0.0436 cm^{-1} atm^{-1}. Observed and calculated values are compared.

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