PHASE SHIFT CAVITY RING DOWN (PS-CRD) SPECTROSCOPY AND OVERTONE SPECTRA.

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Phase Shift Cavity Ring Down (PS-CRD) spectroscopy was used for the detection of $(v = 0 \rightarrow 6)$ C-H vibrational transition of deuterated methanes and the $(v = 0 \rightarrow 5)$ transition of HD at room temperature. A continuous wave dye laser in the wavelength range from 600 to 650nm and with a 0.5 cm^{-1} resolution was electro-optically modulated, and passed through an optical cavity. The change in the phase angle of the modulated laser beam after passing through the cavity was recorded as a function of the wavelength. Absolute cross sections were obtained.