DYNAMIC ROTATIONAL SPECTROSCOPY OF PHENYLACETYLENE: IR-CHIRPED-PULSE FTMW MULTIPLE-RESONANCE TECHNIQUES

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Dynamic rotational spectra of vibrationally excited ($\sim$3300 cm^{-1}) phenylacetylene (PA) have been explored using infrared-chirped pulse Fourier transform microwave (CP-FTMW) multiple resonance spectroscopy. In this experiment, the IR laser is set to a fixed resonant frequency, and the dynamic rotational spectra of the vibrationally excited molecules are studied by a series of MW pulses. IR-MW-CPFTMW triple-resonance and IR-MW-MW-CPFTMW quadruple-resonance techniques will be presented. In the case of PA, parallel Coriolis coupling is observed in the vibrationally excited molecules. This manifests itself in the coalescence of the dynamic rotational spectrum in the area of the K=2 asymmetry doublets. The evidence for coupling, as well as the Coriolis rate analysis, will be presented.