MEASURING CONFORMATIONAL ENERGY DIFFERENCES USING PULSED-JET MICROWAVE SPECTROSCOPY

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The conformational energy differences of various chemicals have been measured using chirped-pulse Fourier transform microwave (CP-FTMW) spectroscopy. The hypothesis is that the relative intensities measured in a pulsed-jet instrument are proportional to the conformer populations present before the expansion occurs. Therefore, by measuring the relative intensities in a CP-FTMW spectrum, we aim to determine the relative energy difference between conformers. Experimentally, pulsed-jet CP-FTMW data will be compared to energy differences reported in the literature and to room-temperature CP-FTMW data acquired at Coker College. Results from *ab initio* calculations will also be used for comparison.