CONSTRUCTION AND DEVELOPMENT OF A NEW LOW-FREQUENCY FOURIER TRANSFORM SPECTROMETER FOR OPERATION IN THE 1-6 GHZ RANGE[a]

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Pulsed-beam Fourier transform spectrometers normally operate in the 4-20 GHz range. In many cases for larger molecules it is desirable to measure lower-J transitions which occur below 4 GHz. To address the need for high resolution experimental measurements in the 1-4 GHz range, a new pulsed-beam Fourier transform spectrometer has been successfully constructed and tested. The lower frequency range resulted in impressive dimensions and new technical challenges. Interesting aspects of the development and the characteristics of the new instrument are presented along with some of the first experimental spectra.

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