Abstract Submitted
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Terahertz Rotational Spectroscopy of the v5/2v9 Dyad of Nitric Acid[1] PAUL HELMINGER, University of South Alabama, DOUGLAS T. PETKIE, IVAN MEDVEDEV, Wright State University, FRANK C. DE LUCIA, Ohio State University — Our studies of the terahertz rotational spectrum of nitric acid now include the ground state and the four lowest excited states. We report good progress in the assignment and analysis of the next higher energy states, the v5/2v9 interacting states. This very complex spectrum includes torsional splitting of both states and Fermi and Coriolis type interactions between them. The current analysis includes both microwave and infrared transitions for improved stability. Microwave studies of the rotational spectrum of the nitric acid molecule in the ground and excited vibration states contribute both to a better understanding of this fundamental molecule and to the construction of accurate spectral maps for remote sensing in the atmosphere.

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Paul Helminger
University of South Alabama

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