

Abstract Submitted  
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**The Terahertz Spectrum of the  $v_5/2v_9$  Dyad of Nitric Acid<sup>1</sup>** PAUL HELMINGER, University of South Alabama, DOUGLAS T. PETKIE, Wright State University, IVAN MEDVEDEV, FRANK C. DE LUCIA, Ohio State University — Because nitric acid is an important molecular species in the ozone cycle in the upper atmosphere, it has been the subject of many studies in both the infrared and microwave regions of the spectrum. Microwave studies of the rotational spectrum of nitric acid in excited vibration states contribute both to a better understanding of this fundamental molecule and to the construction of accurate spectral maps for remote sensing. Our most recent work on nitric acid includes studies of the terahertz spectrum of the ground state and four lowest-energy excited vibrational states. We have now extended this work to include measurements and analysis of the rotational transitions of the  $v_5/2v_9$  dyad of nitric acid. This very complex spectrum includes torsional splitting of both states and Fermi and Coriolis type interactions between them. Preliminary results of the assignment and analysis will be reported.

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