EXPERIMENTAL CONFIRMATION OF QUANTUM MONODROMY IN THE MILLIMETER WAVE SPECTRUM OF NCNCS

BRENDA P. WINNEWISSER, MANFRED WINNEWISSER, IVAN R. MEDVEDEV, MARKUS BEHNKE, FRANK C. DE LUCIA, *Department of Physics, The Ohio state University, Columbus, OH 43210*; and STEPHEN C. ROSS, *Department of Physics, University of New Brunswick, Fredericton NB E3B 5A3*.

In search of a molecule with an experimentally accessible monodromy point, we rediscovered NCNCS, the salient properties of which were established in a brilliant analysis of the microwave spectrum by Kroto and coworkers [a]. We have measured its millimeter wave spectrum with the FASSST spectrometer, and sorted out much of the resulting dense spectrum with the assignment package CAAARS. The predictions of a generalized semi-rigid bender Hamiltonian (GSRB) have allowed us to identify several bending states above the barrier to linearity, and explore details of this prototypical spectrum. These details include accidental resonances which give us accurate intervals between bending levels.

[a] M. A. King, H. W. Kroto and B. M. Landsberg *J. Mol. Spectrosc.* **113**, 1–20 (1985).