

## JET-COOLED, BROAD RANGE NEAR-IR SCAN OF REACTIVE INTERMEDIATES USING CAVITY RINGDOWN SPECTROSCOPY

NEAL D. KLINE, TERRANCE J. CODD, MING-WEI CHEN<sup>a</sup>, And TERRY A. MILLER, *Laser Spectroscopy Facility, Department of Chemistry, The Ohio State University, 120 W. 18th Avenue, Columbus, Ohio 43210.*

A technique has been developed for obtaining broad range scans of jet-cooled radicals using cavity ringdown spectroscopy. The talk will describe a method that uses a slit jet expansion in tandem with an electrical discharge to produce the reactive intermediates and obtain rotational temperatures of 15-30 K and effective vibrational temperatures of 0 K. The spectrum can be recorded by scanning the second stokes of an H<sub>2</sub> Raman shifted YAG-pumped dye laser with bandwidth of  $\approx 0.1 \text{ cm}^{-1}$ . This technique has been used to obtain the jet-cooled  $\tilde{A} - \tilde{X}$  spectra of the NO<sub>3</sub> radical and the 2,1-hydroxypropyl peroxy radical (2,1-HPP). Obtaining the jet-cooled spectra helped to identify hot bands present in the room temperature spectrum of NO<sub>3</sub> and also helped to identify cold, low-frequency fundamental bands present in the 2,1-HPP spectrum.

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<sup>a</sup>Present Address: Department of Chemistry, University of Illinois at Urbana-Champaign, Urbana, IL, 61801