MEASUREMENT AND ANALYSIS OF ATMOSPHERICALLY BROADENED LINEWIDTHS AND LINESHAPES IN THE MILLIMETER SPECTRAL REGION

COREY CASTO and FRANK C. DE LUCIA, *Department of Physics, The Ohio State University, Columbus, OH 43210-1106*.

Millimeter and sub-millimeter spectroscopy ordinarily takes advantage of the sharpness of near Doppler limited linewidths to separate molecular effects from instrumental effects. As a result, spectroscopically broader effects that manifest themselves at atmospheric pressures are more difficult to study experimentally. We have previously described an approach to the study of these phenomena, FASSST Cavity Ring Down spectroscopy. We had observed ozone spectra at room temperature where ozone reacts with materials in our cavity making it difficult to compare spectra with theory. In this talk, we will describe room temperature spectra of sulfur dioxide and cold temperature spectra of ozone and compare them with theoretical models and parameters based on low pressure measurements.