ON THE HYPERFINE STRUCTURE OF NO$_2$ LEVELS NEAR DISSOCIATION THRESHOLD

JU XIN AND SCOTT A. REID, Department of Chemistry, Marquette University, Milwaukee, WI 53201-1881.

We report the application of polarization quantum beat spectroscopy (QBS) to probe the hyperfine structure of single NO$_2$ molecular eigenstates in the region 2.5 cm$^{-1}$ below dissociation threshold ($D_0=25128.57$ cm$^{-1}$). The hyperfine interaction is substantially weaker than that found at energies below 22 000 cm$^{-1}$, but is similar on average to that observed 50-100 cm$^{-1}$ below threshold. The ratio of $J=3/2$ to $J=1/2$ levels is much larger than that expected on the basis of complete rovibronic mixing, but is consistent with a previous study.