LASER INDUCED FLUORESCENCE AND LIFETIME MEASUREMENTS OF ORGANIC RADICALS

S.A. WILLIAMS, E. ZINGHER, and J.C. WEISSHAAR, Department of Chemistry, University of Wisconsin - Madison, Madison, WI 53706.

Different isomers of vinoxy radical were produced in a pulsed supersonic expansion by excimer laser photolysis at 193 nm. The $B$ to $X$ electronic transitions were probed by laser induced fluorescence. The spectra are complicated. We find as many as 30 bands over a 2700 cm$^{-1}$ interval. We have measured fluorescence lifetimes of many of these bands. The lifetimes decrease slowly toward higher energies to as short as 25 ns and then the bands abruptly end. Comparisons with $ab$ $initio$ work will be discussed.