

## RYDBERG STATES OF POLYATOMIC FREE RADICALS

E. J. ZUCKERMAN, H. G. HEDDERICH, E. E. MAYER, J. A. BEHM, L. ZHANG, and E. R. GRANT,  
*Purdue University, West Lafayette, IN 47907-1393.*

Open Shell acyl free radicals produce closed shell cations that support sharp Rydberg states. Ion-detected absorption shows extensive structure in HCO and CH<sub>3</sub>O. Presented here are the first resolved spectra of CH<sub>3</sub>O obtained by (1+1) double-resonant photoionization. These states are analyzed and used as intermediates to probe higher level Rydberg states near the ionization threshold.