MICROWAVE SPECTROSCOPY OF THE HEAVY-ATOM CARBENE ANALOG HGeBr

LU KANG, *Department of Natural Sciences, Union College, Barbourville, KY 40906*; FUMIE X. SUNAHORI, *Department of Chemistry, University of Kentucky, Lexington, KY 40506*; ANDREA J. MINEI, *Department of Chemistry, Wesleyan University, Middletown, CT 06459*; DENNIS J. CLOUTHIER, *Department of Chemistry, University of Kentucky, Lexington, KY 40506*; and STEWART E. NOVICK, *Department of Chemistry, Wesleyan University, Middletown, CT 06459*.

Eight isotopologues each of HGeBr and of DGeBr have been studied in natural abundance by pulsed-jet Fourier transform microwave (FTMW) spectroscopy. Neon was passed over dry ice cooled H_3GeBr or D_3GeBr and introduced into the pulsed valve of the FTMW spectrometer. The HGeBr and the DGeBr were produced in-situ with a 1000 V discharge of the gas mixture immediately following the nozzle opening. Only *a* -type transitions can be observed from 5 - 25 GHz; $K_a = 0$ transitions for the HGeBr and $K_a = 0$ and 1 transitions for the DGeBr isotopologues. The structure and bonding of the molecule will be discussed.