

## Structure Data of Free Polyatomic Molecules

209 LIF	GeH <sub>2</sub>	$\lambda^2$ -Germane Germylene	C <sub>2v</sub> GeH <sub>2</sub>
	State	$\tilde{X}^1A_1$	$\tilde{A}^1B_1$
	Energy [eV]	0.00	2.024
	$r_e(\text{Ge-H})$ [Å]	1.5883(9)	1.5471(6)
	$\theta_e(\text{H-Ge-H})$ [deg]	91.22(4)	123.44 (2)

GeH<sub>2</sub> is predissociated in the excited state except for the lowest rotational levels. GeH<sub>2</sub> was produced in a radio-frequency discharge through a mixture of GeH<sub>4</sub> and argon and its room-temperature spectrum studied by laser optogalvanic spectroscopy. Laser-induced fluorescence and wavelength-resolved fluorescence spectra of GeH<sub>2</sub> and GeD<sub>2</sub> were obtained using a pulsed-jet discharge through H<sub>3</sub>GeCl and D<sub>3</sub>GeCl diluted in argon as precursors. Since bands involving two of the three ground and excited state fundamentals were observed, harmonic force fields for both states were determined and used to obtain approximate equilibrium structural parameters.

Smith, T.C., Clouthier, D.J., Sha, W., Adam, A.G: J. Chem. Phys. **113** (2000) 9567.

[II/25A\(2, 661\)](#)