

Announcements

To join clicker to class today (Clickers with LCD display joins automatically):

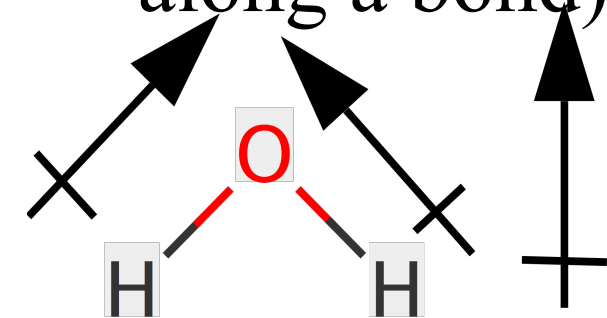
- Turn on the Clicker (the red LED comes on).
- Push “Join” button followed by “20” followed by the “Send” button (switches to flashing green LED if successful).
- Next lab handout has been e-mailed.
- Exam 2 one week from Today.
- The chemistry stockroom has positions available for work study students. For applications see:
 - Ms. Kromm (HS-432)
 - Ms. Hauer (HS-449, next to stockroom)
- Still have a number of 3-4 P quizzes from two weeks ago.

Review (VSEPR)

Number of Groups	Basic Shape	Bond Angles	Sub-Shapes	Shape Name
Diatomic	Linear Diatomic		AX	Linear
2	Linear Triatomic	180°	AX ₂	Linear
3	Trigonal Planar	120°	AX ₃	Trigonal Planar
			AX ₂ E	Bent
4	Tetrahedral	109.5°	AX ₄	Tetrahedral
			AX ₃ E	Trigonal Pyramidal
			AX ₂ E ₂	Bent
5	Trigonal Bipyramidal	90°, 120°	AX ₅	Trigonal Bipyramidal
			AX ₄ E	See-Saw
			AX ₃ E ₂	T-Shaped
			AX ₂ E ₃	Linear
6	Octahedral	90°	AX ₆	Octahedral
			AX ₅ E	Square Pyramidal
			AX ₄ E ₂	Square Planar

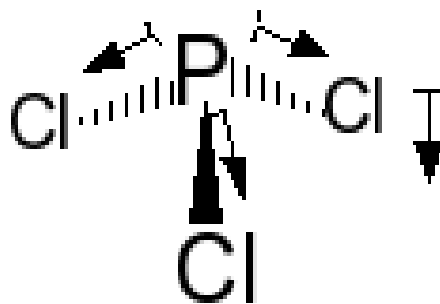
Review (molecular polarity)

- General rule: if all outer atoms are the same and arranged symmetrically about the central atom molecule is non polar.
- The overall dipole (a vector) is the vector sum of the bond dipoles (charge separation along a bond).



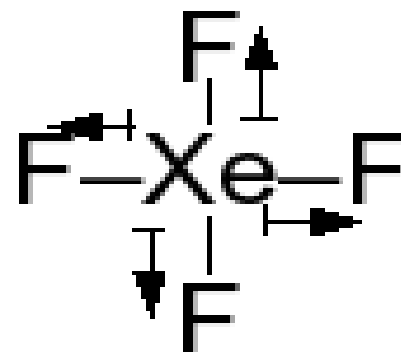
Bond dipoles

Sum



Bond dipoles

Sum



No dipole

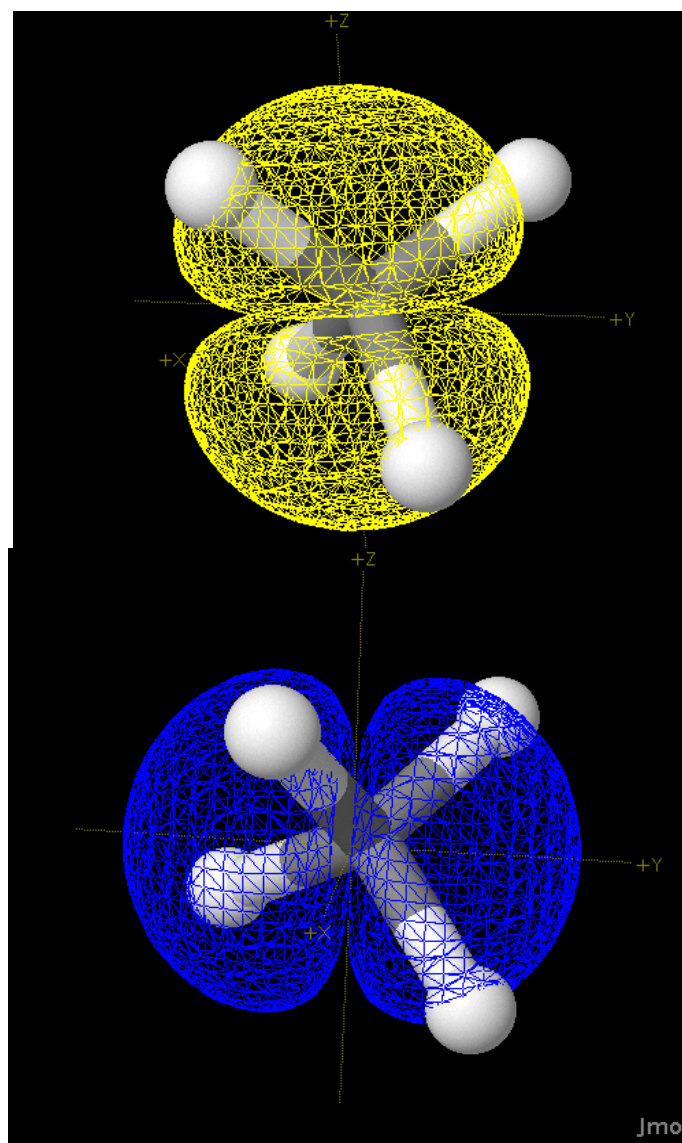
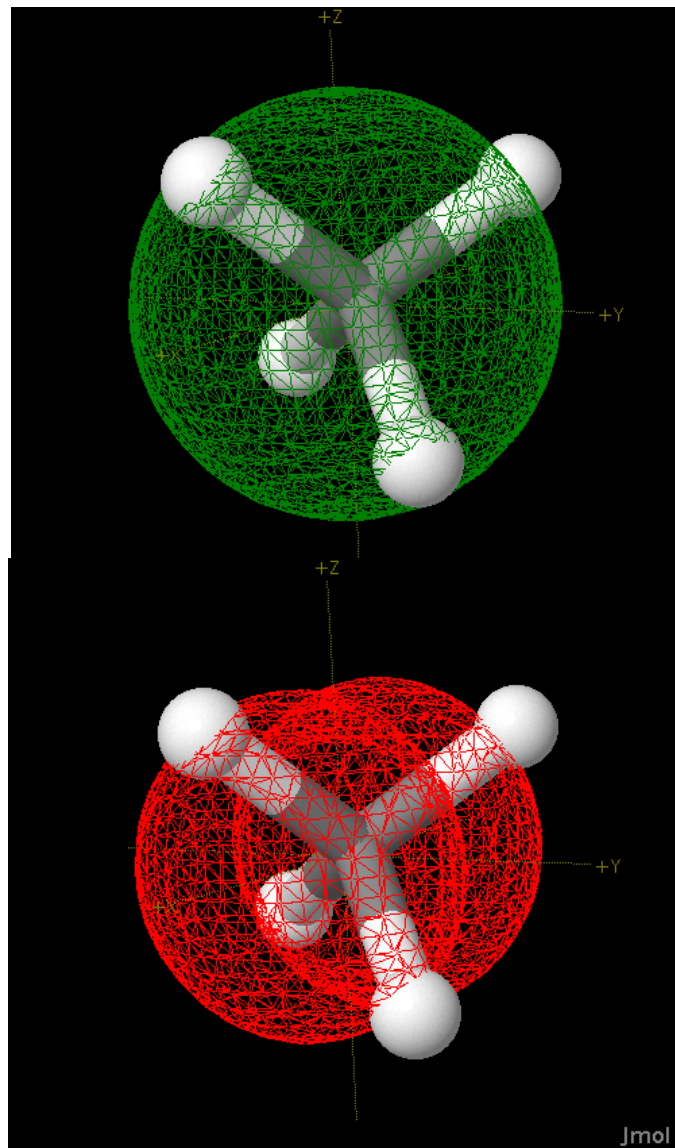
Overlap of Atomic Orbitals to Form a Bond (Valence Bond Theory)

Chang fig 10.4 and 10.5

Chang Fig 10.5

Chang Fig. 10.4

Atomic Orbitals Don't Always Point the Correct Directions.



Figures
from Dr.
Gutow's
Hybrid
Orbital
Web Site

Hybridization vs. VSEPR

Chang Table 10.4