#### **Representation of Molecules**

- Show only electrons in outer (valence) shell
- Non-bonding electrons may or may not be shown
- Use element symbols, but carbon can be represented by point of angle or end of line
- Hydrogens and bonds to them from carbon are optional; show others.
- Each line in a structure represents 2 e<sup>-</sup>
- Dashed wedge ( ......): Away from you / into the page

### sp<sup>3</sup> Hybridization

- Single bonds
- Tetrahedral geometry
- Angle between two H atoms: 109°
- Often free rotation around single bonds



## sp<sup>2</sup> Hybridization

- Double bonds
- Planar geometry
- Angle between two atoms: 120°
- No free rotation around double bonds



# sp Hybridization

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- Triple bonds Linear geometry No free rotation around triple bonds -



Triple bond:One sigma bond between theH - C = C - Hcarbons plus two pi bondsacetylene = ethyne

