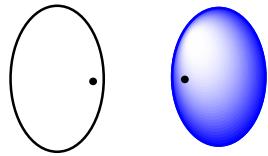


s orbital: Diagram of bonding and anti-bonding interactions

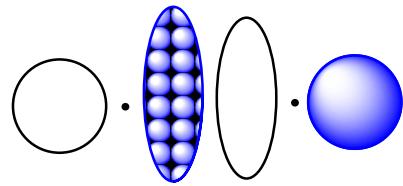


σ^* (anti-bonding interaction)



σ (bonding interaction)

σ interactions from p orbitals

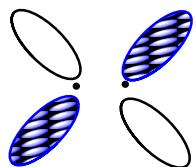


$$\sigma^* [p_z(a) + p_z(b)]$$

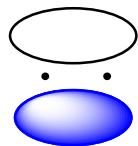


$$\sigma [p_z(a) - p_z(b)]$$

π interactions of p orbitals



$$\pi^* [p_x(a) - p_x(b)]$$

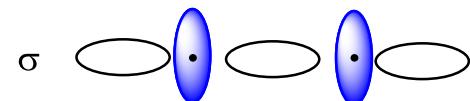
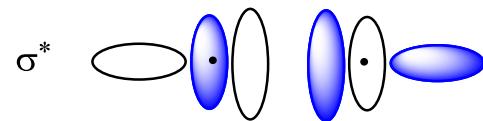


$$\pi [p_x(a) + p_x(b)]$$

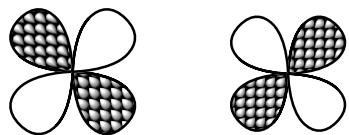
σ interactions of d orbitals



d_z^2 orbitals end-to-end



π interactions of d orbitals



d_{xz} or d_{yz} orbitals in the same plane

