Crystal Field Theory (Lecture 33)

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Focus: energies of the *d* orbitals

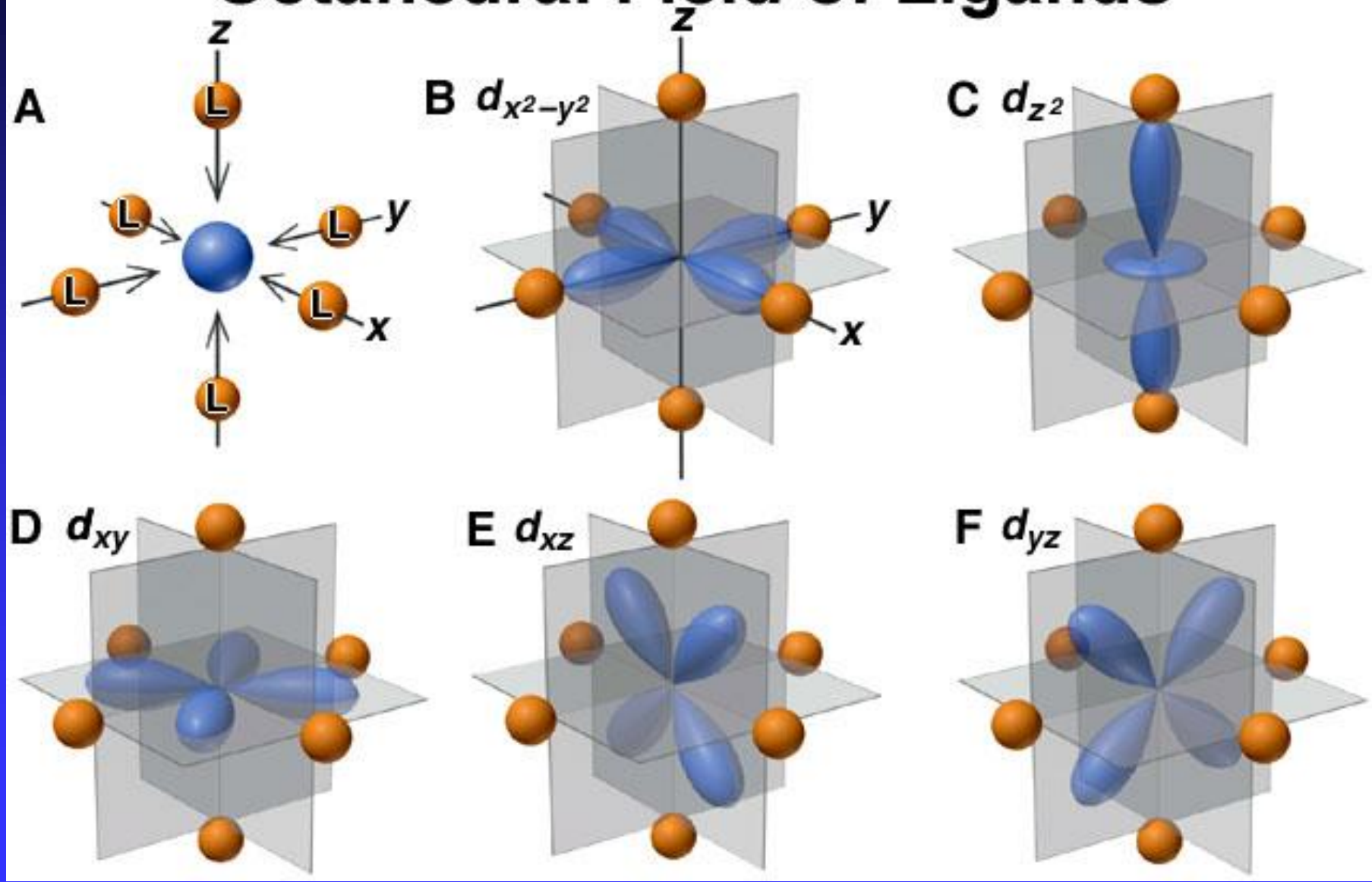
Assumptions

1. Ligands: negative point charges
2. Metal-ligand bonding: entirely ionic

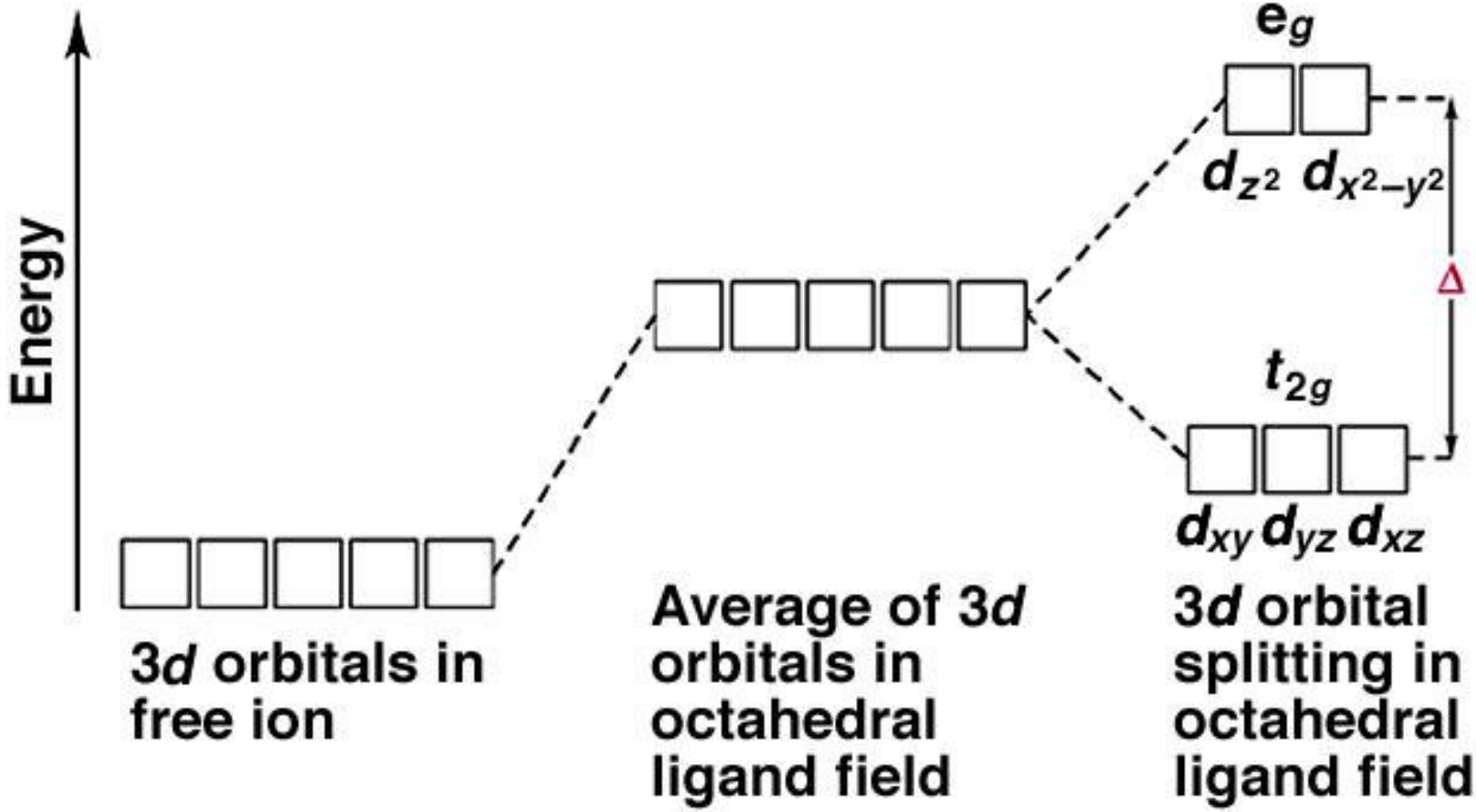
strong-field (low-spin): large splitting of *d* orbitals

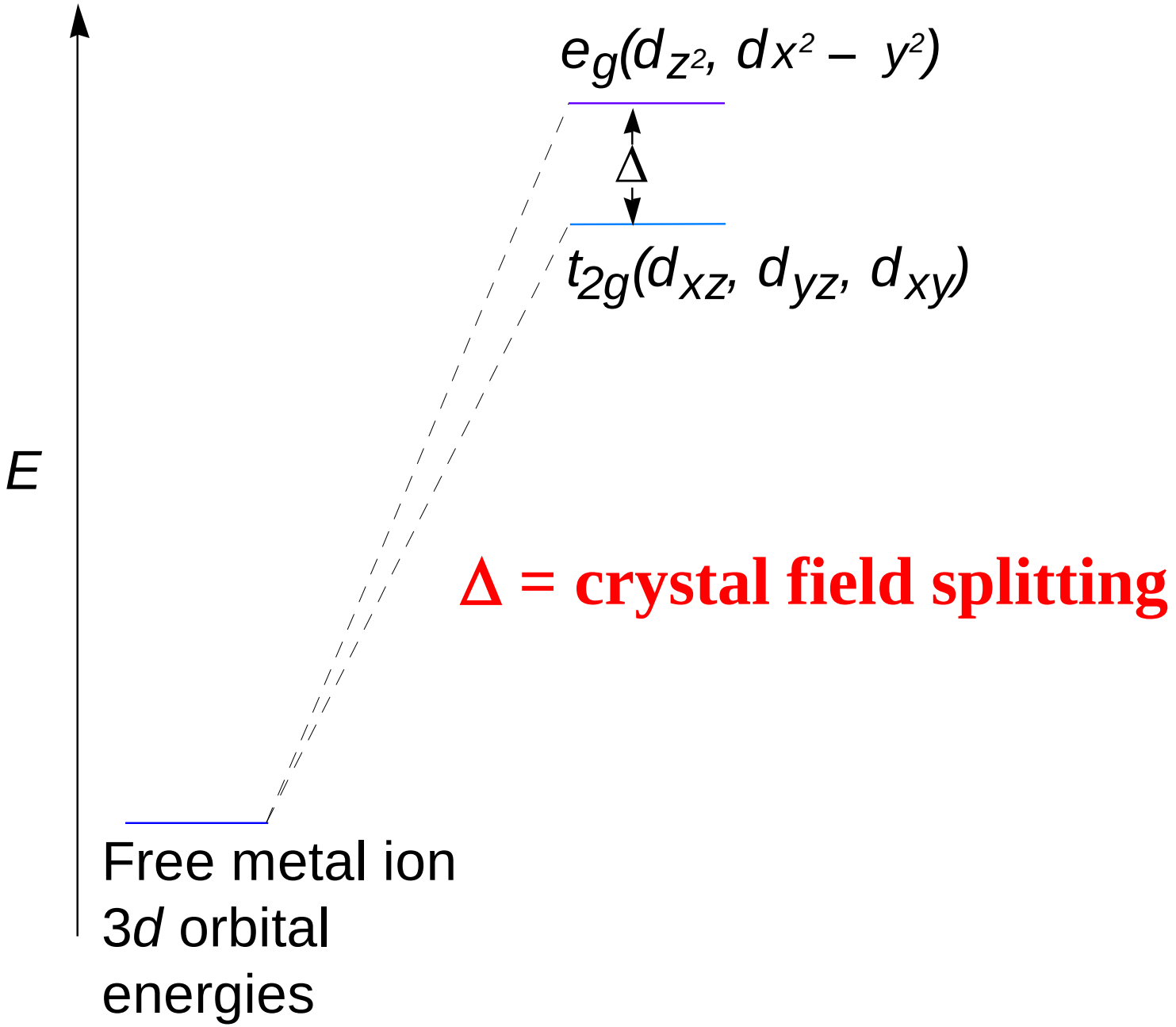
weak-field (high-spin): small splitting of *d* orbitals

d Orbitals in an Octahedral Field of Ligands



Splitting of *d*-Orbital Energies by an Octahedral Field of Ligands





Δ = crystal field splitting

Thank You