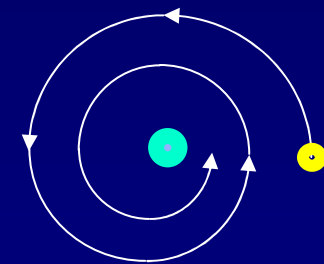
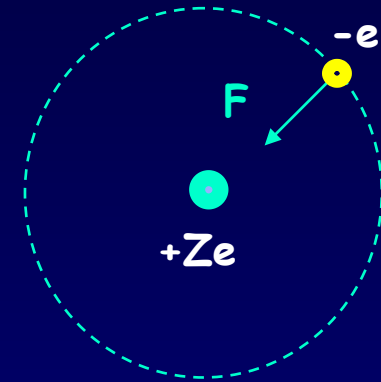


# Atoms: Classical Planetary Model

(An early model of the atom)

- **Classical picture:** negatively charged objects (electrons) orbit positively charged nucleus due to Coulomb force.
- There is a **BIG PROBLEM** with this:
  - As the electron moves in its circular orbit, it is **ACCELERATING**.
  - As you learned in Physics 212, accelerating charges radiate electromagnetic energy.
  - Consequently, an electron would continuously lose energy and spiral into the nucleus in about  $10^{-9}$  sec.



➔ The planetary model doesn't lead to stable atoms.