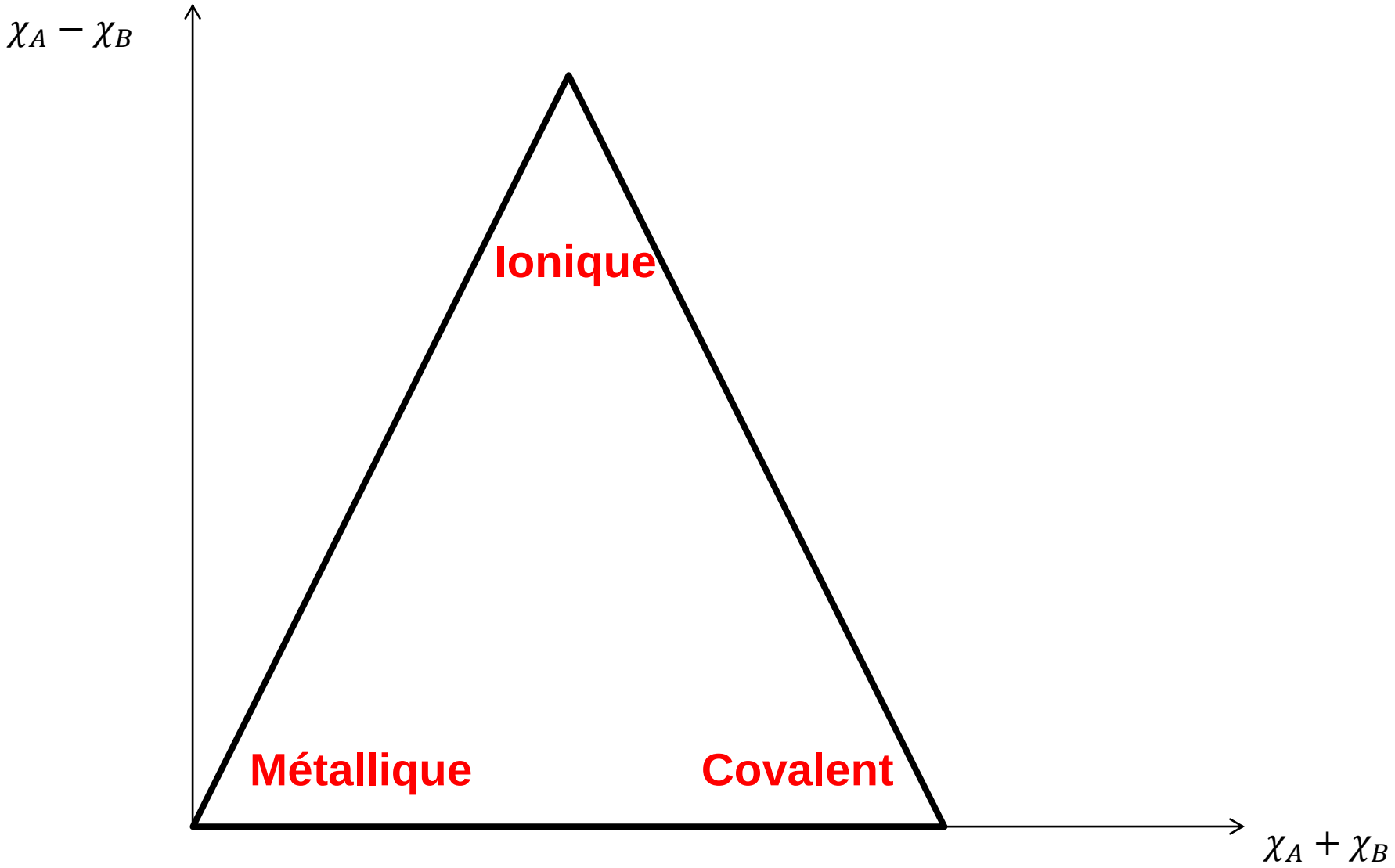
LC17 : Solides cristallins

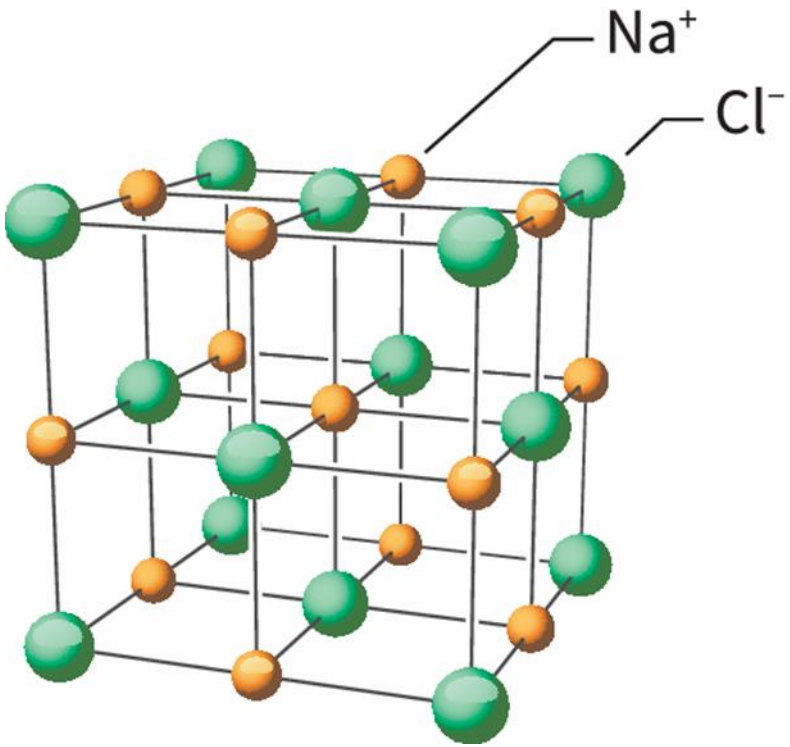
Niveau : CPGE

Prérequis : Modèle du cristal parfait, liaisons métallique, covalente, ionique

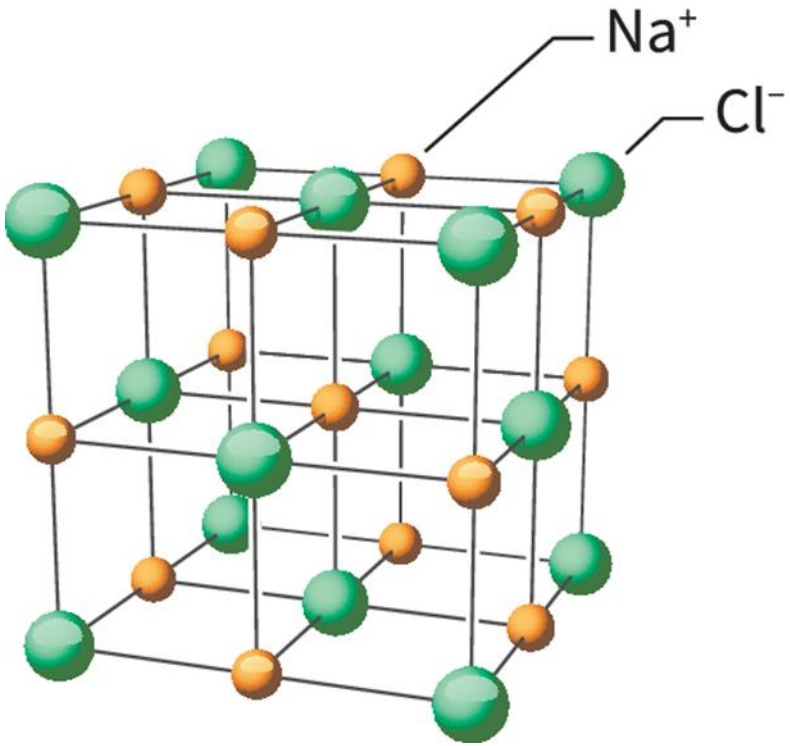
Triangle de Ketelaat

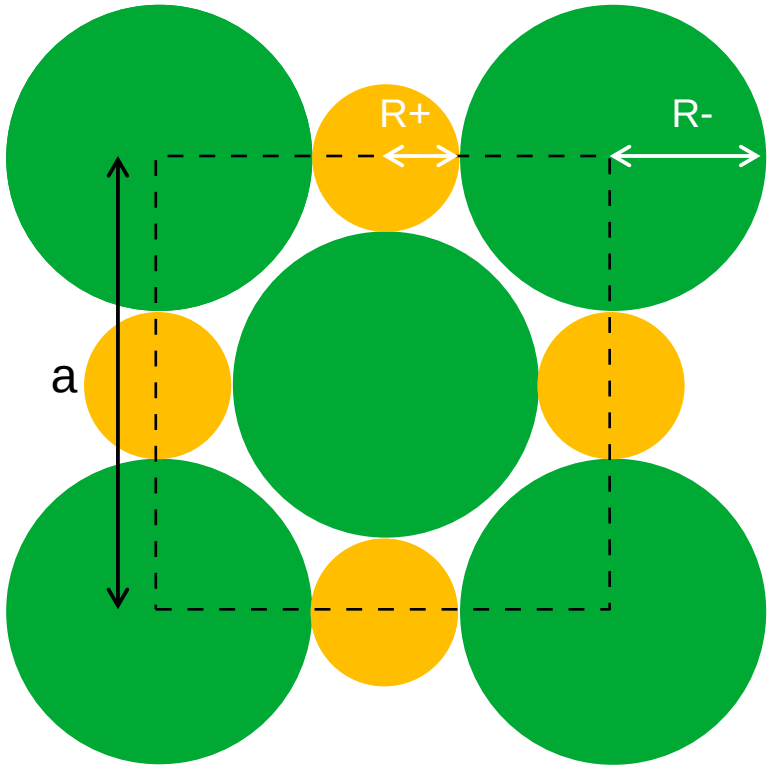


Cristal de NaCl

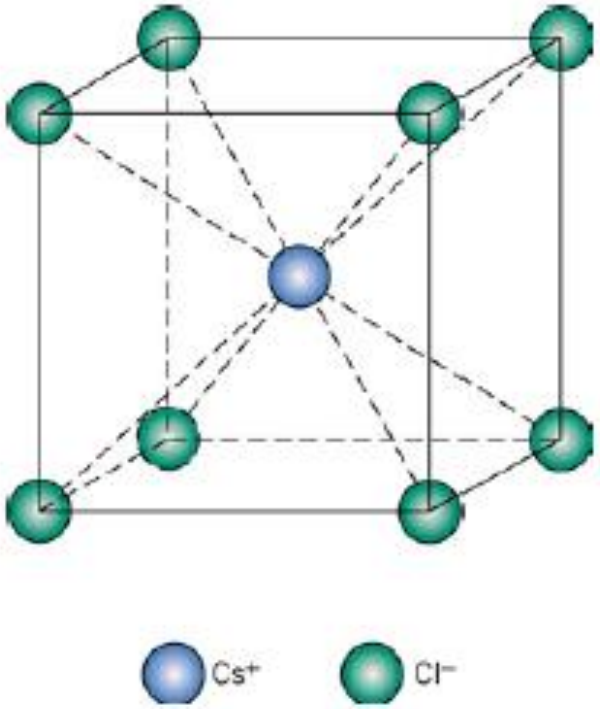


Cristal de NaCl



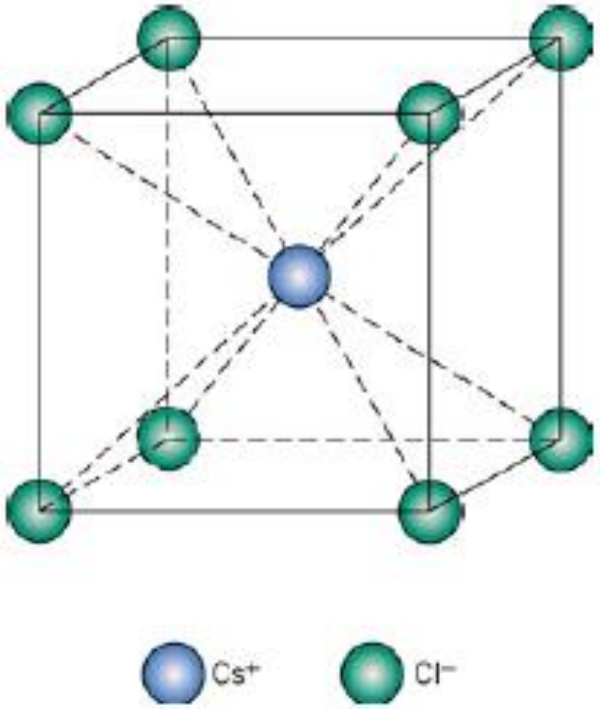


Structure type CsCl



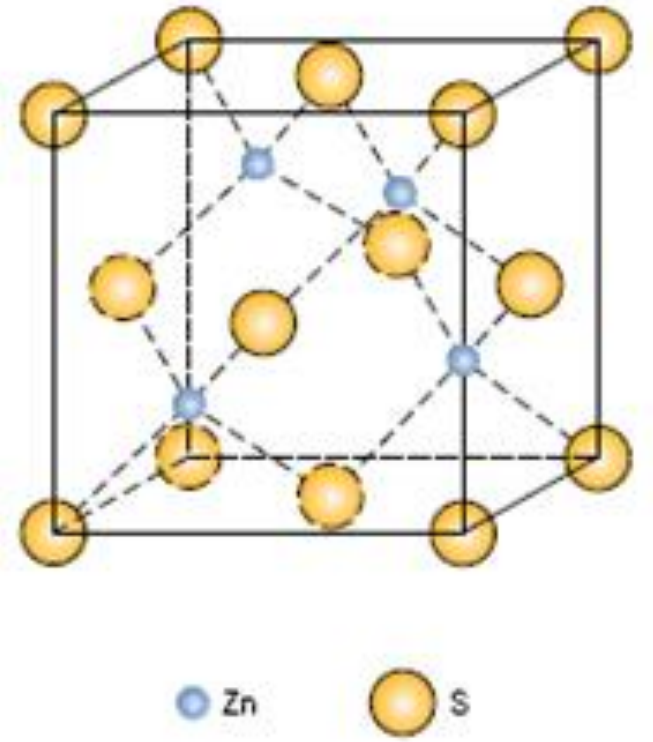
Cl : réseau cubique
Cs : au centre du cube

Structure type CsCl



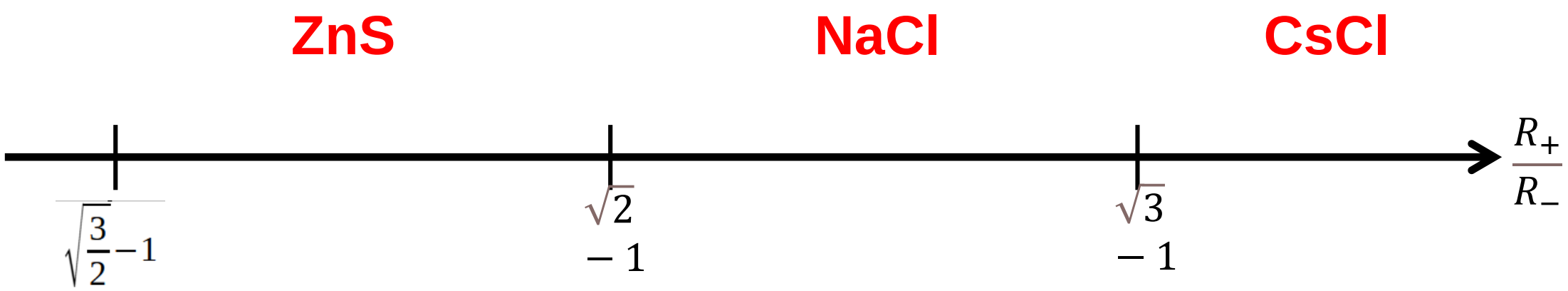
Cl : réseau cubique
Cs : au centre du cube

Structure type ZnS



S : réseau CFC
Zn: un site tétraédrique sur deux

Différents types de maille en fonction des rayons



Principe d’une mesure au pycnomètre

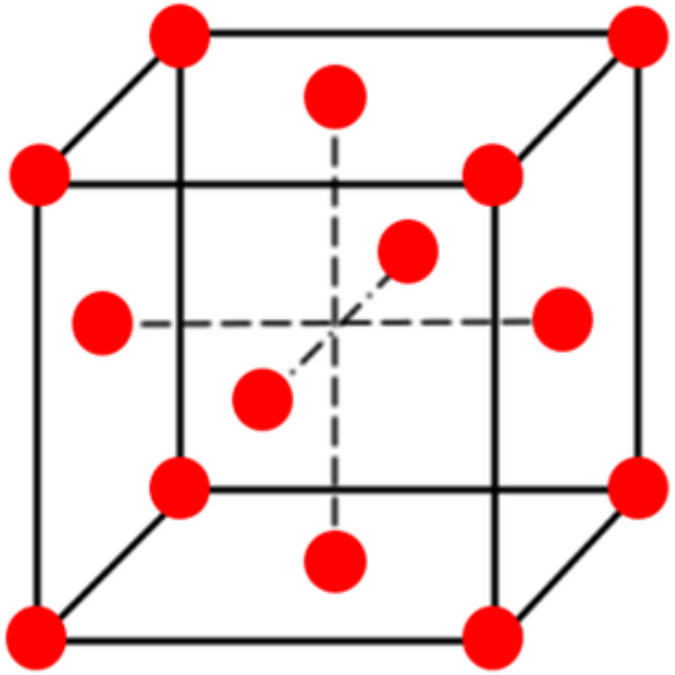
Capillaire

Bouchon percé

Principe d'une mesure au pycnomètre

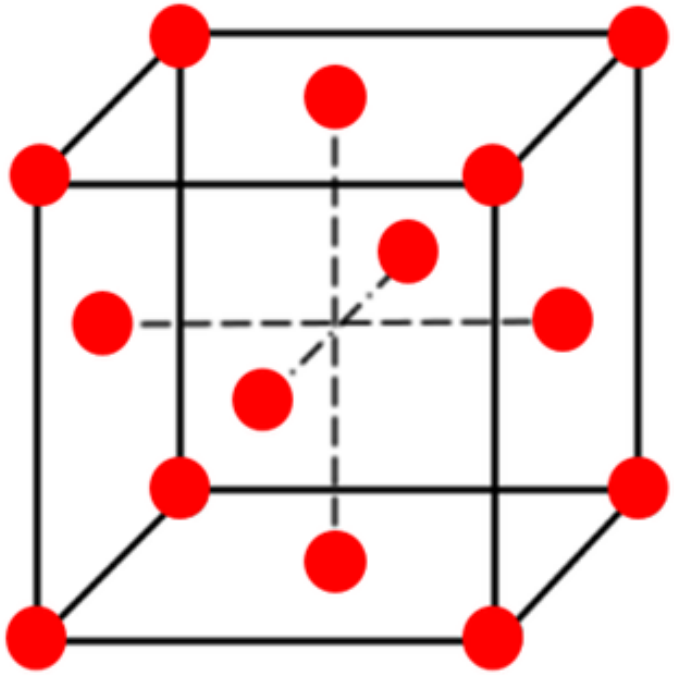
$$\rho_{NaCl} = \frac{m_{NaCl}}{V_{pyc} - \frac{m_{cyclo}}{\rho_{cyclo}}}$$

Empilements compacts

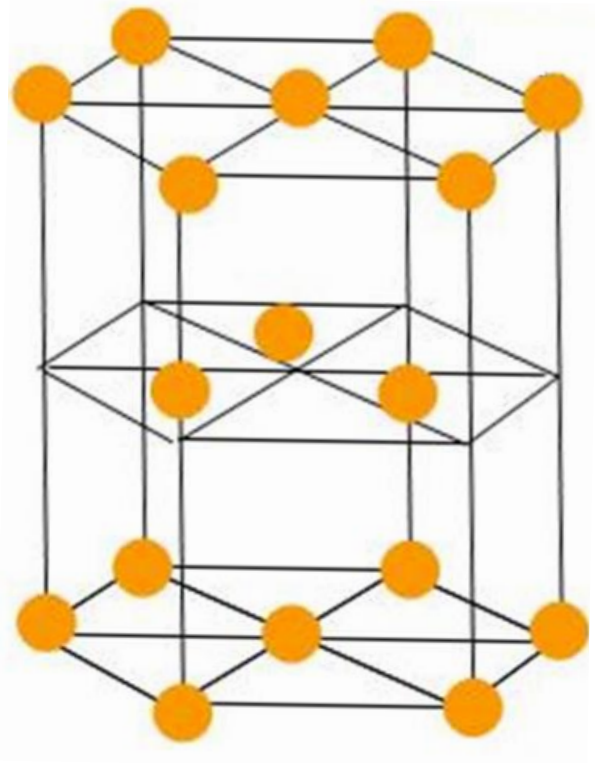


Empilement type **ABCA**
–> structure CFC

Empilements compacts

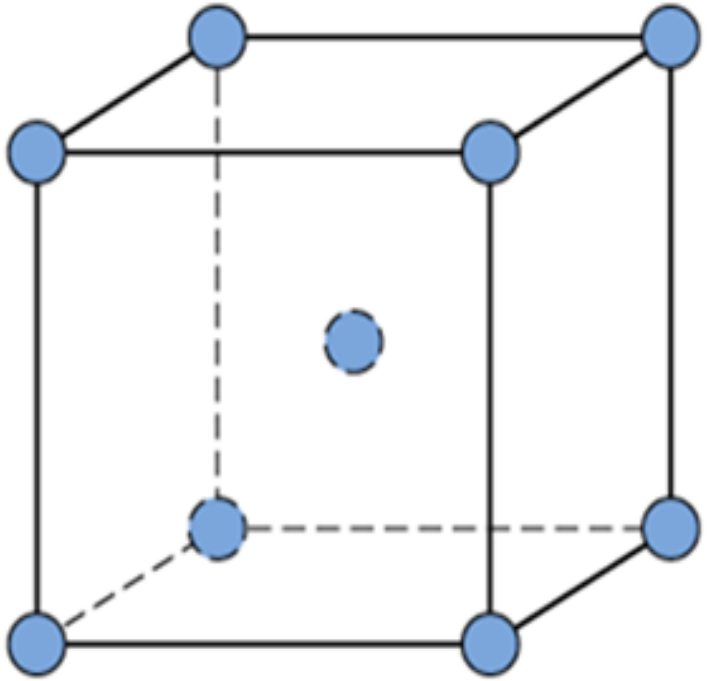


Empilement type **ABCA**
–> structure CFC



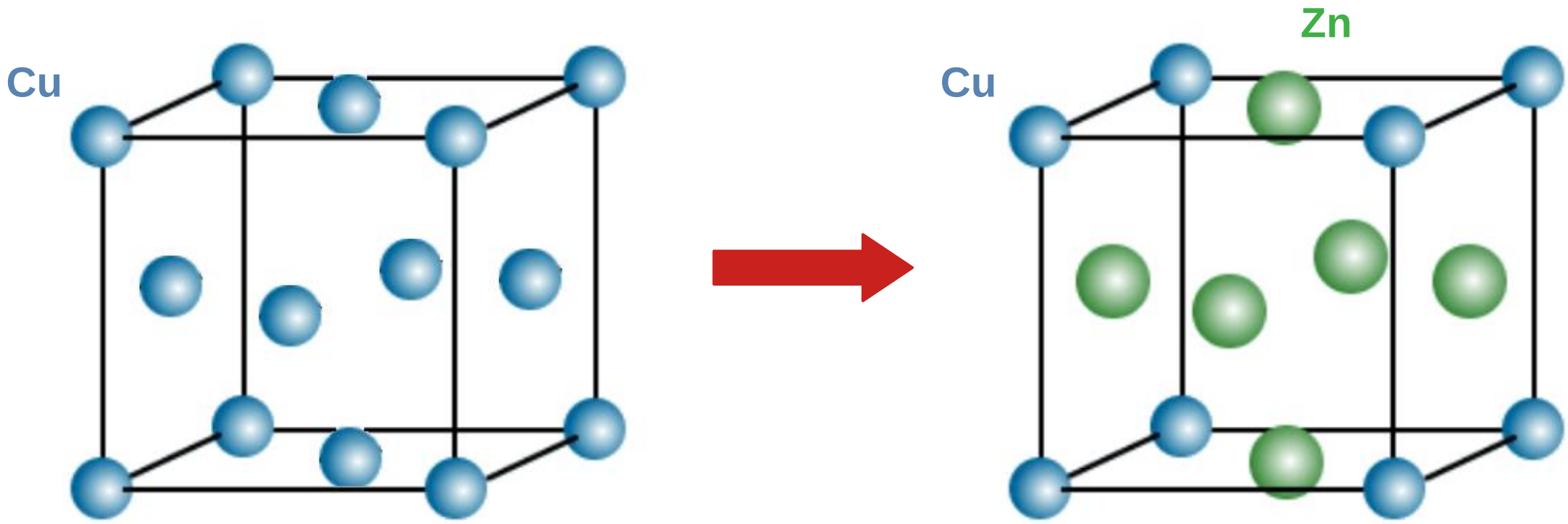
Empilement type **ABA**
–> structure hexagonale compacte

Empilement non compact



–> cubique centrée : compacité=68 %

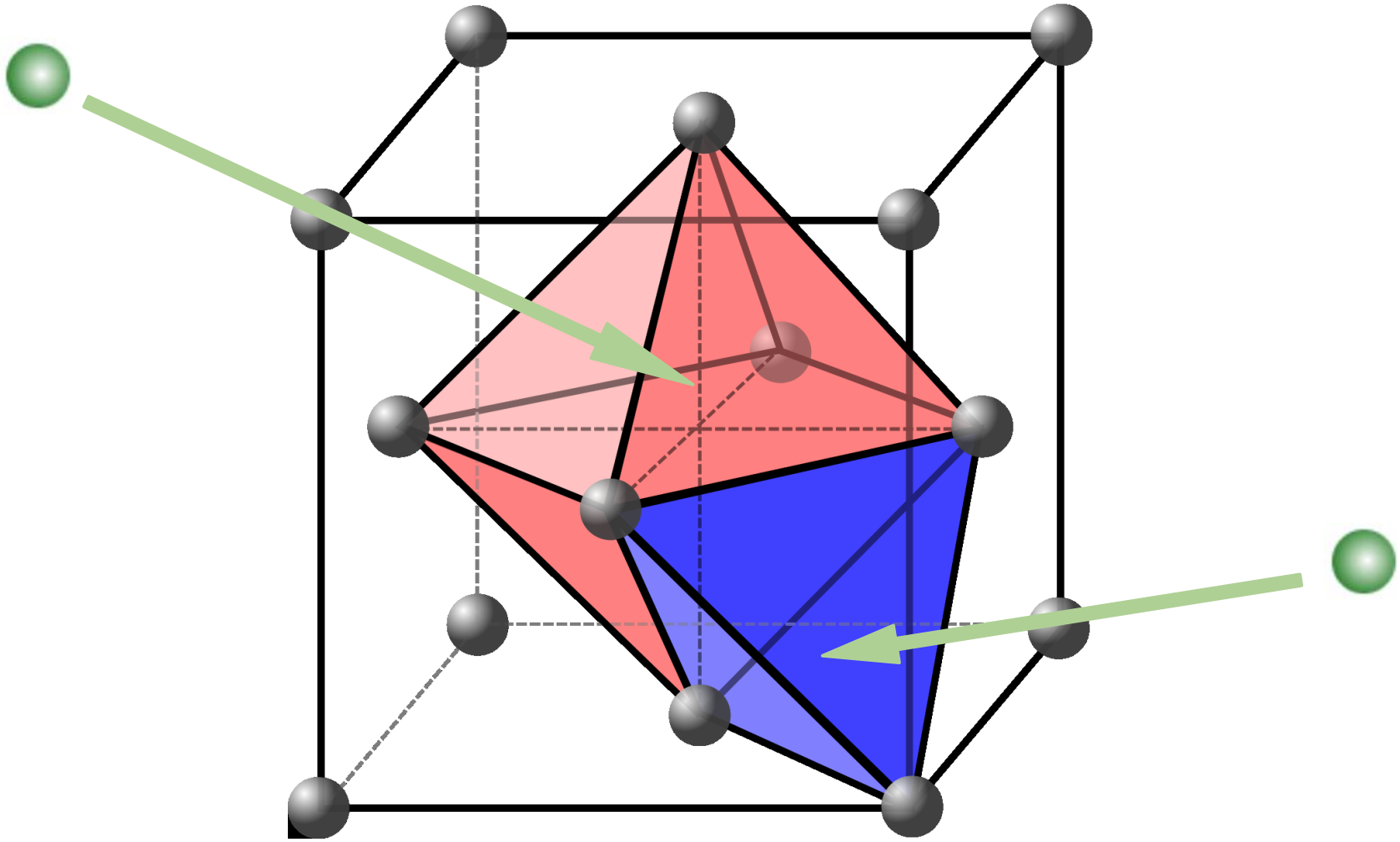
Alliages de substitution



Cuivre en CFC

Cuivre + substitution de Zinc

Alliages d’insertion



Dosage du laiton