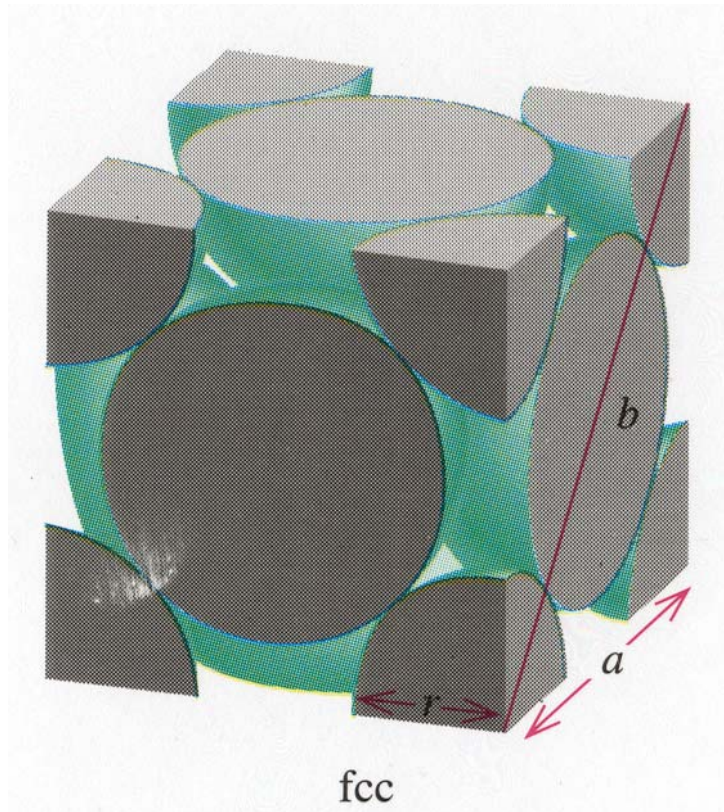


Metals and their Compounds

Lecture 3.4

Face-centered cube (p 417 BLB)



cube length = a

atom radius = r

Atoms *touch* along *face-diagonal* of cube, so

$$b = 4r \text{ and } r = b/4$$

$$b^2 = a^2 + a^2 \text{ so } b^2 = 2a^2 \text{ so } b = \sqrt{2}a$$

$$\text{so } r = \sqrt{2}a/4 = a/(2\sqrt{2})$$