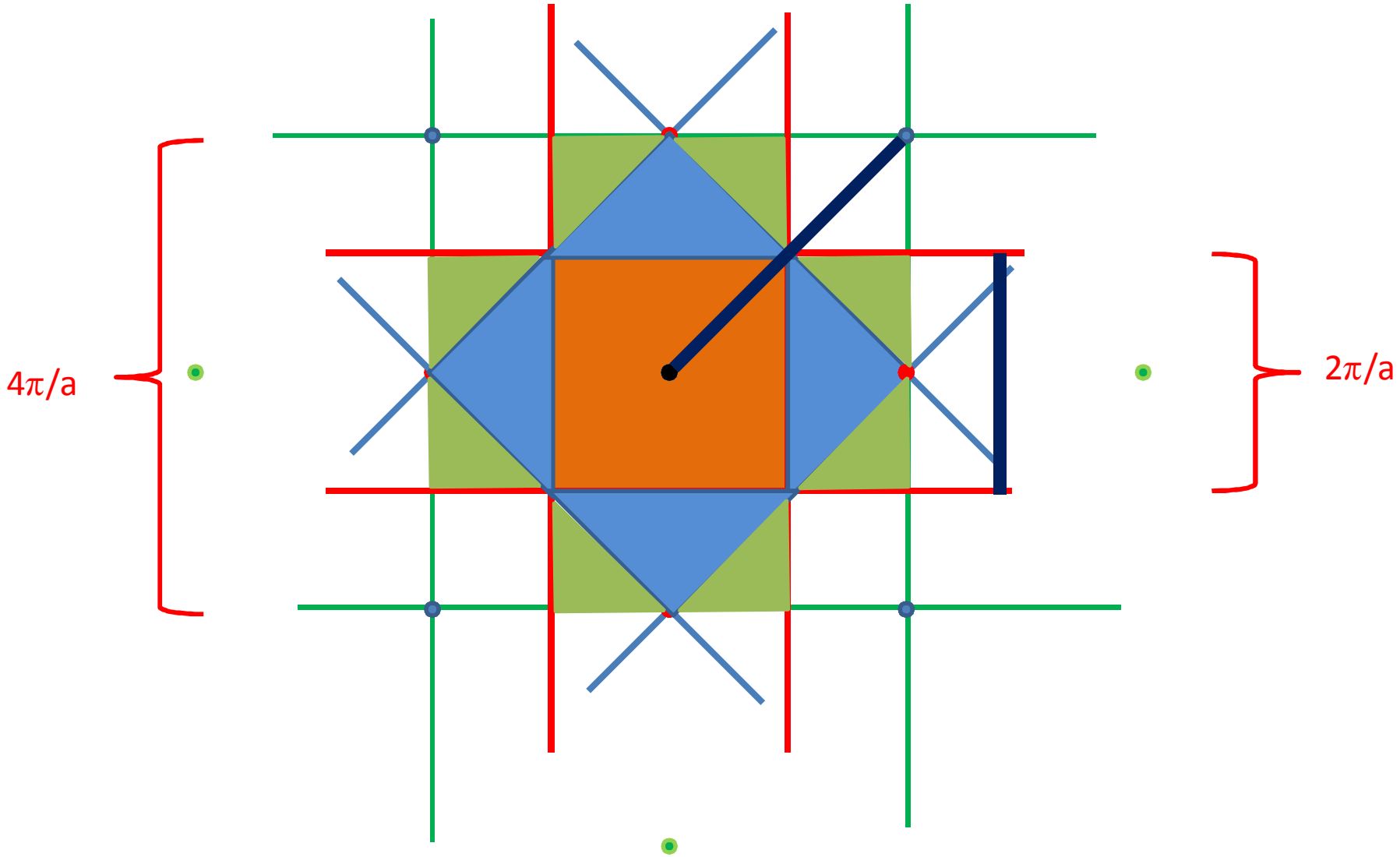
Slides
Condensed Matter Physics
Lecture 14

1^{st}, 2^{nd}, 3^{rd} Brillouin Zone
Of the Square lattice



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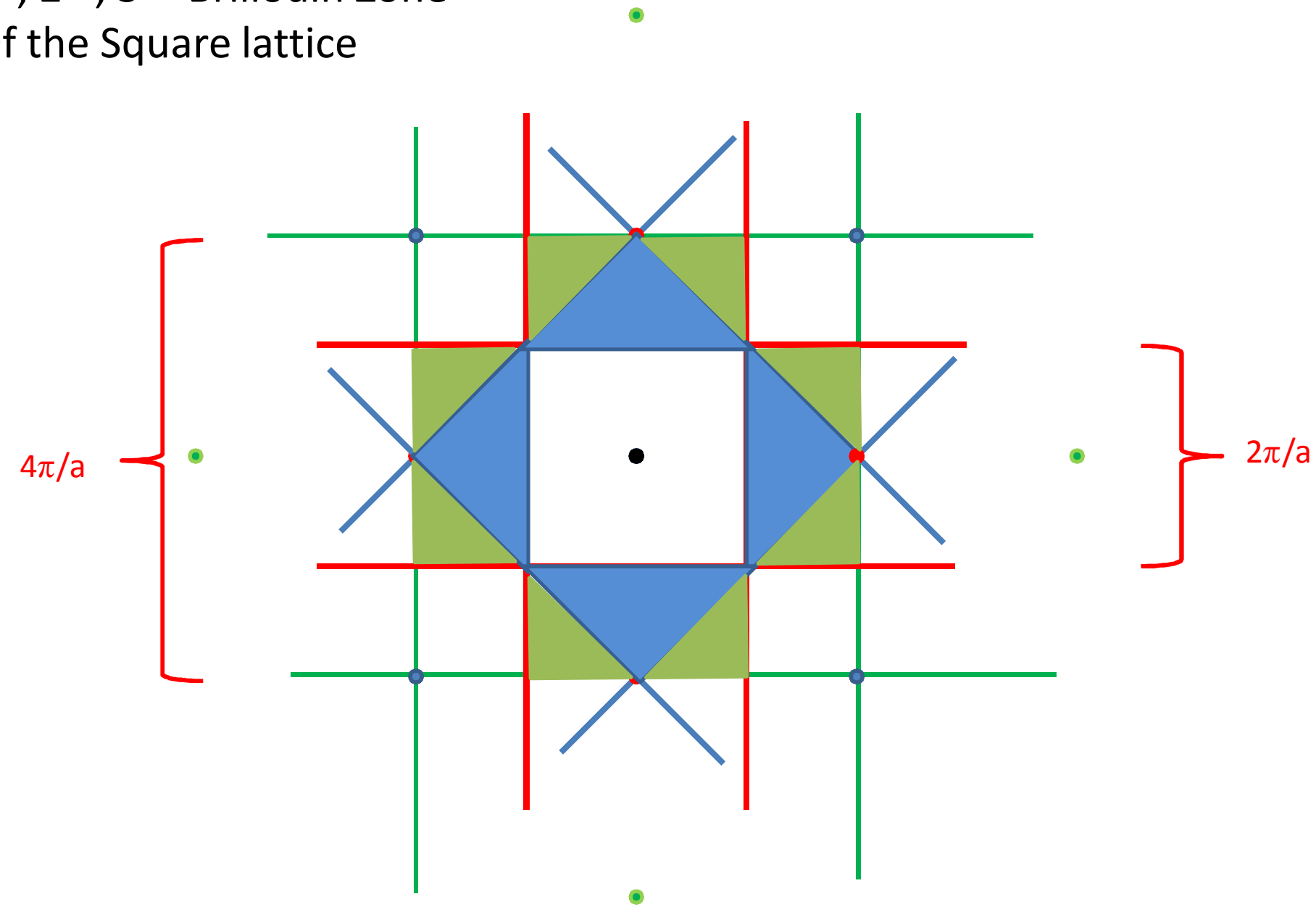

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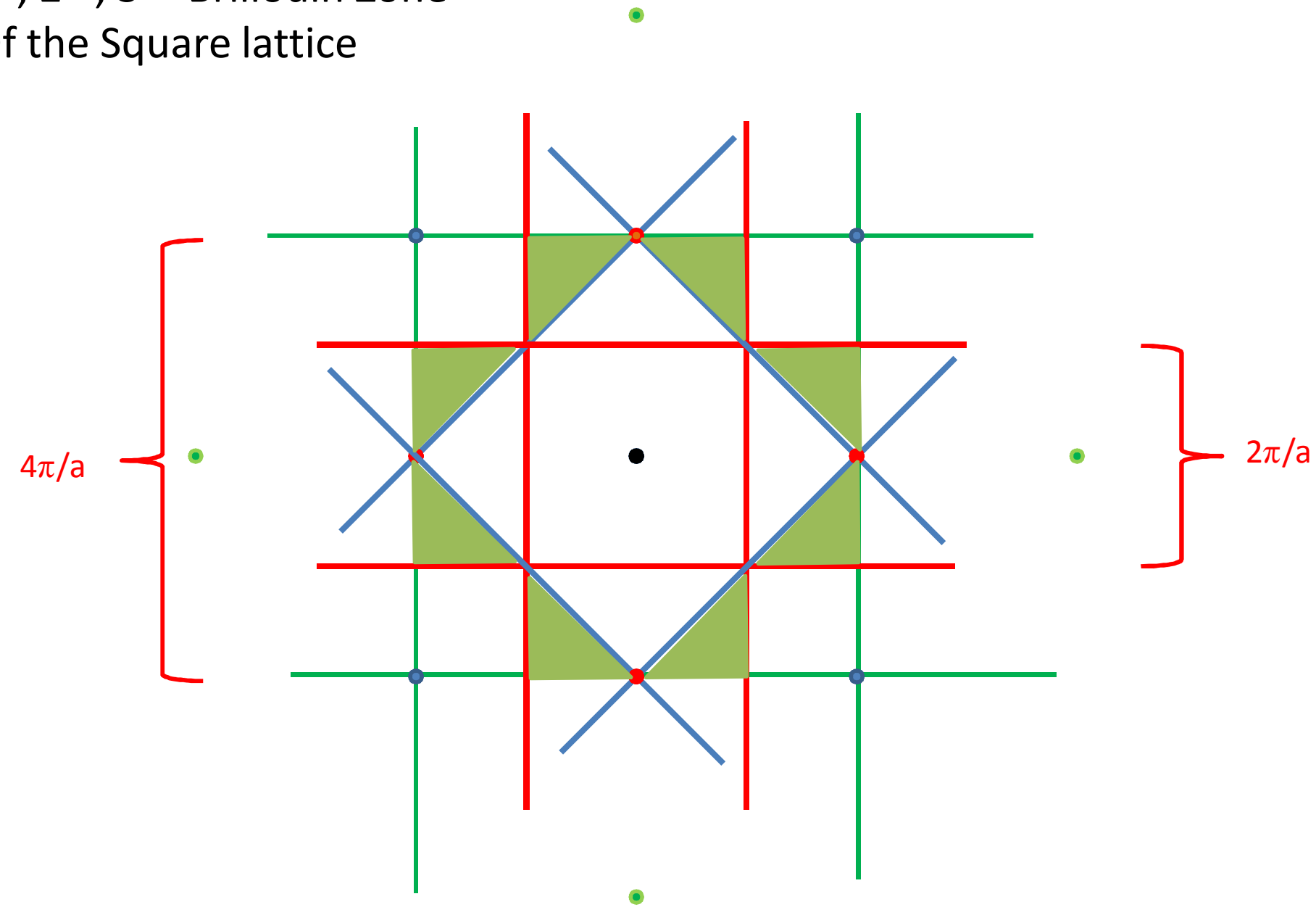
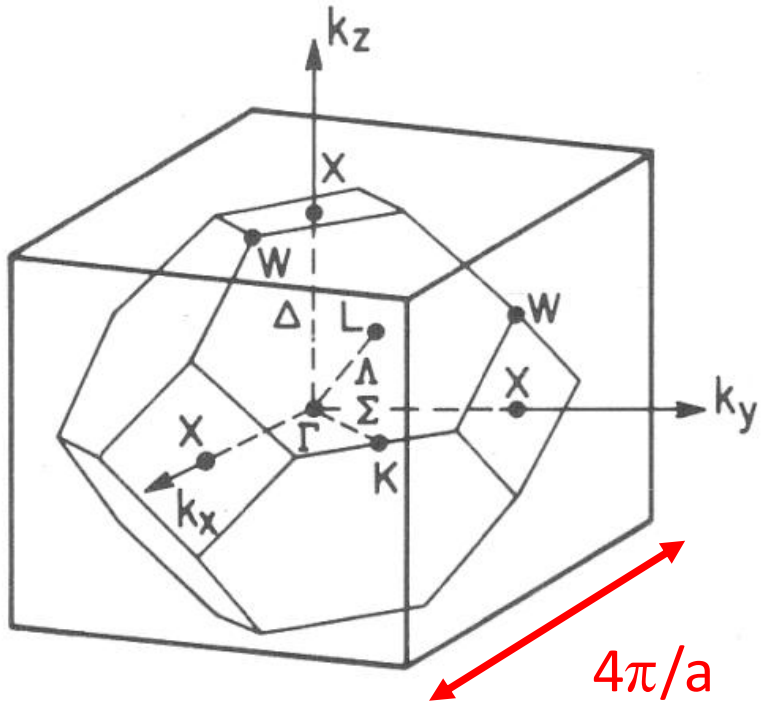


1st Brillouin Zone of an FCC lattice
=same shape as Wigner Seitz
cell of a BCC lattice



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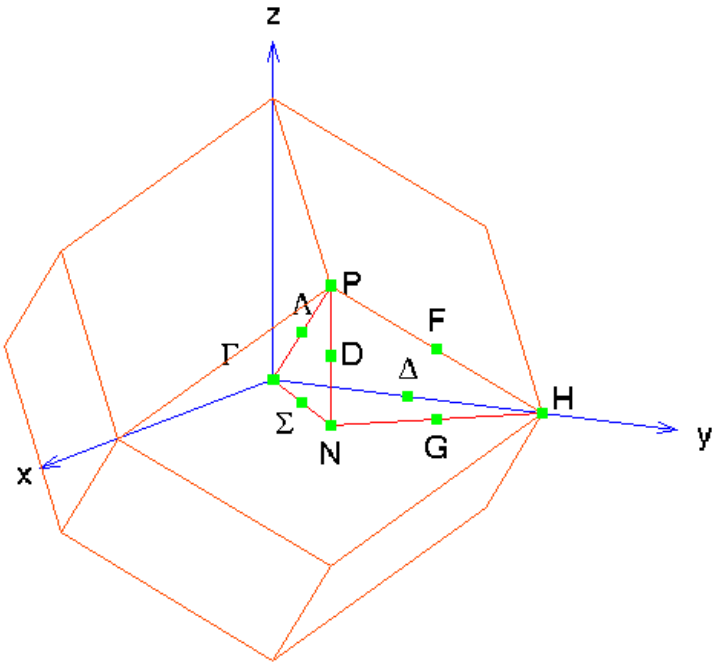
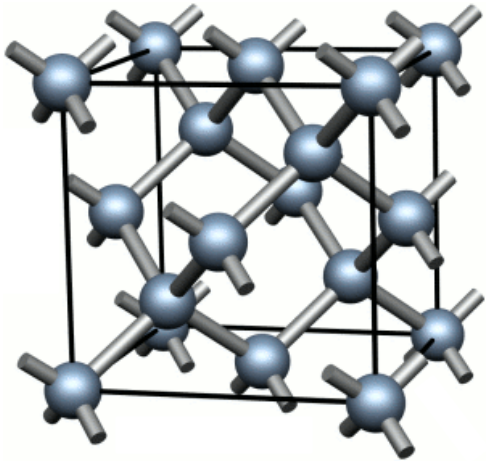
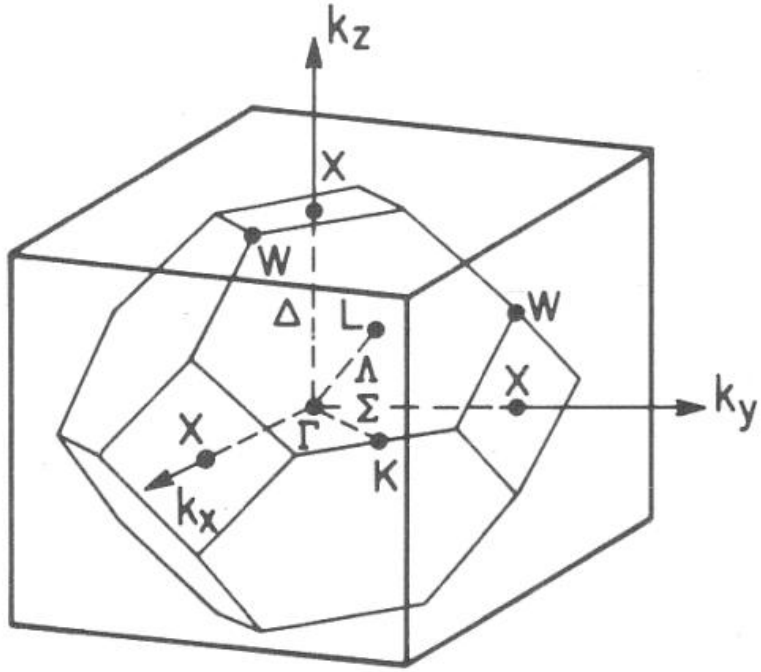


Diamond = FCC with a 2-atom basis

C @ [0,0,0] and C @ [¼, ¼, ¼]





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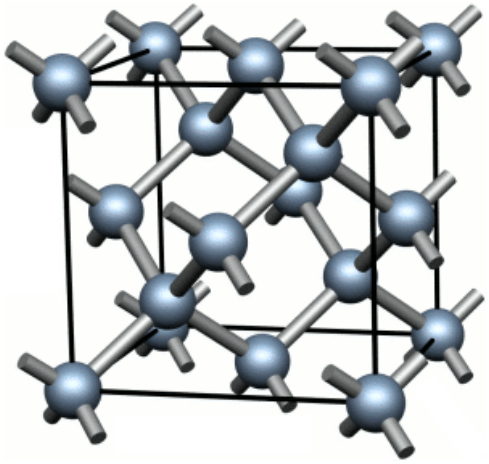
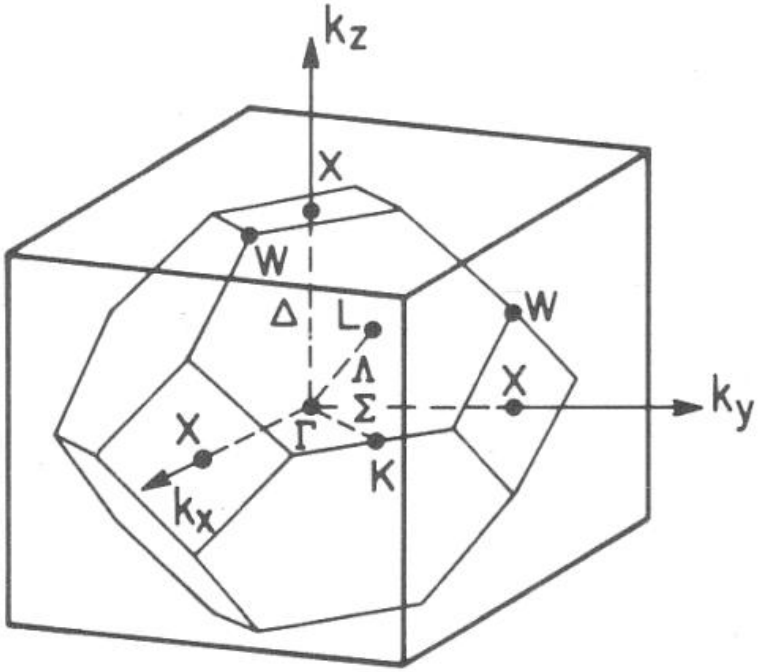
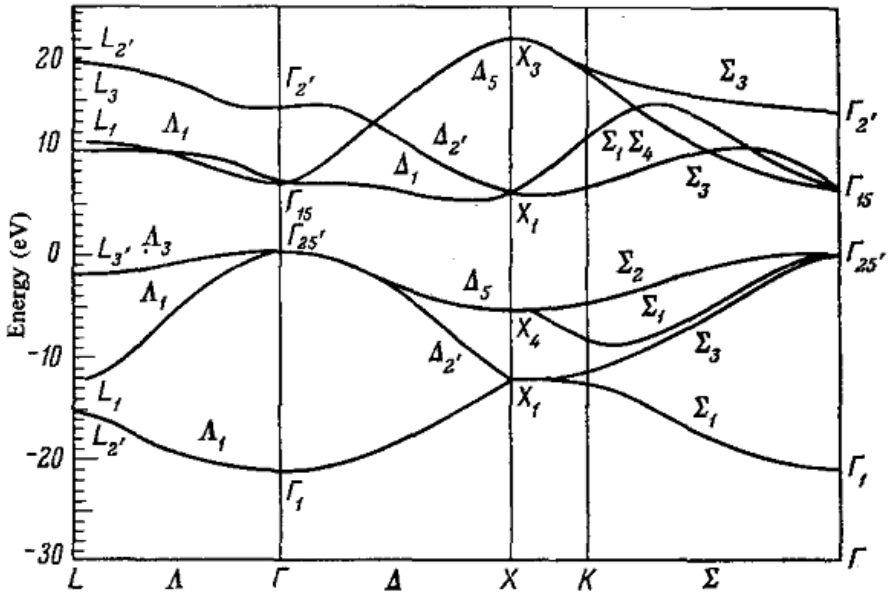
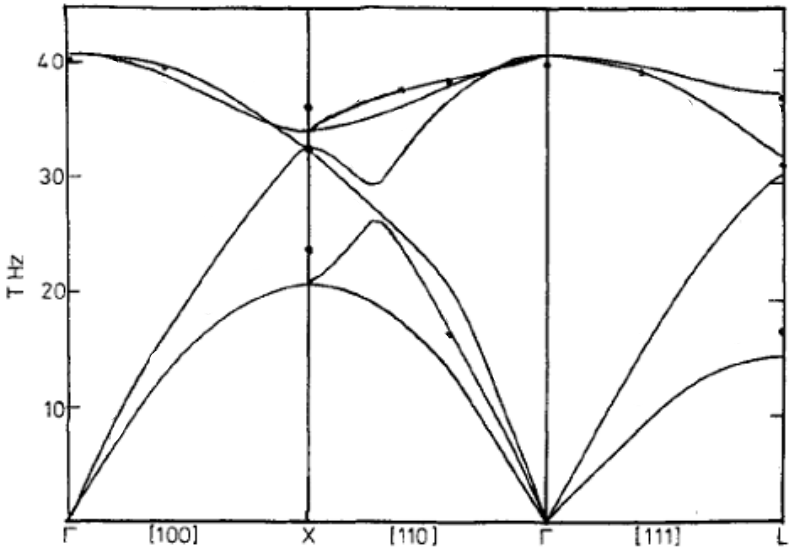






Diamond Electronic Band Structure



Diamond Phonon Spectrum

X-ray scattering on liquids
– like powder but peaks not sharp.