Breaking of translational invariance, Brillouin zone formation and the corresponding solutions of partial differential equations

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Abstract

Bloch's theorem is introduced as a consequence of reduction of complete translational symmetry into discrete transaltional ones.Under this smaller symmetry group the set of allowed solutions of partial differential equations, becomes discrete in fourier space and leads to the concept of reciprocal lattice.Geometry of the unit cell of this reciprocal lattice,*i.e.* Brillouin zone , is determined by the symmetries of unit cell of the periodic lattice.

References

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