

TO THE THEORY OF FORCE
CONSTANTS FOR MULTIATOMIC SYSTEMS
IN THE TIGHT-BINDING MODEL (PART II)

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S u m m a r y

An approximate expression for the Coulomb interaction energy in solids has been obtained in the framework of the tight-binding model. The condition of adiabatic approximation and the procedure of quantum statistical averaging for the first (static) term in the expansion of the average potential energy in small nuclear shifts are analyzed, which allowed the electron contribution to the thermal expansion of solids to be calculated. An equation of state for a solid is obtained in the harmonic approximation by analyzing the internal energy and the thermal properties of the solid. A relationship between the specific heats C_v and C_p , which agrees with the Grüneisen law, is found.