LONG-WAVE HIGH-FREQUENCY OSCILLATIONS IN IONIC CRYSTALS WITH TWO ATOMS IN ELEMENTARY CELL

A.A. Stupka

Oles Honchar Dnipropetrovsk National University (72, Gagarin Ave., Dnipropetrovsk 49050, Ukraine; e-mail: antonstupka@mail.ru)

Summary

Long-wave high-frequency electromagnetic oscillations in an ionic crystal with two atoms in an elementary cell have been considered in the framework of a self-consistent model for free point charges in the electromagnetic field in a dielectric medium. The frequency of longitudinal phonons is shown to equal the ionic plasma frequency divided by the square root of the high-frequency dielectric permittivity. The standard dispersion law for the upper phonon-polariton branch is obtained.