Interionic forces and phonons in superionic conductor CsPbCl₃

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The phonon dispersion in three symmetric directions of superionic conductor CsPbCl₃ has been calculated by applying a de Launey angular force model. The results interpret reasonably the fastened combining among the frame ions and weakened combining between mobile and frame ions in high ionic conduction phase of superionic conductors. The temperature dependence of short range and long range forces for high frequency bands are also calculated by applying point charge model. The observed results are justified satisfactorily from the present calculation of phonons.