

Electrostatic energy of solid binary ionic mixtures

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We study the electrostatic energy of binary ionic mixtures in the form of ordered Coulomb crystals. We consider different binary bcc and fcc like lattices, accurately calculate their electrostatic energies and approximate them by a unified equation. A detailed comparison with previous results is made, particularly, using in the linear mixing rule approximation. The obtained approximation expression is used to analyze the phase diagrams of degenerate matter in the interiors of degenerate stars.

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