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PS1-05: Channeling and Quasi-Characteristic Radiation of Charged Particles in Charged Axis of Ionic Crystals of CsCl-Type

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The given paper investigates the orientation motion of charged particles (electrons, positrons, ions) in charged [100] and [110] axes of CsCl-type crystals. Principle difference from previous work which investigated similar problems is in the usage of more correct and ground type of potential of charged axes for such crystals.

This potential consists of the following steps: 1) the calculation is carried out on the basis of one-particle Coulomb potentials; 2) the calculation assumes the expansion of charged axes system potential by the reverse grid vectors; 3) this expansion transforms to the periodic function for the next calculations; 4) summarizing (with future approximation) of this potential with the potentials corresponding to neutral skeletons of the same axes is done; 5) method of Sturm-Liouville problem numerical calculation helps to find energy levels, corresponding wave functions and QCR spectrum.

Besides, the paper investigates temperature factor influence on the forms of potential pits and QCR spectrum in the crystals under consideration.

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