

THE SINGULARITY OF THE TWO-PARTICLE CORRELATOR IN THE VICINITY OF THE PHASE TRANSITION POINT OF THE PURE METAL MELT

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The phase transition point of the substance, in spite of its exclusive effect on the behavior of a substance, is not special for its thermodynamic functions [1, 2].

It is shown that certain two-particle motion correlators have singularities in the neighborhood of the phase transition point. Correlators similar to those described in the paper [3], were calculated for systems of pure metal melt, modeled by the molecular dynamics method. The time behavior of the motion correlators is different in the liquid stable and supercooled metastable melt phase for a variety of metals. A physical interpretation of such spatial correlations of long-range order in metastable systems is also given. Dependences of correlation functions on the rate of cooling, as well as on the sort and number of atoms in the system are shown.

This work was supported by the grant of the President of Russian Federation for young scientists MK-1404.2017.8.

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