Coexistence of phases in final one-dimensional systems VLADIMIR
UDODOV, IVAN NAUMOV — Within the framework of L.D. Landau (1908-1968)
approach it is shown, that two-phase equilibrium is possible in linear macrosystems
of the final size at low temperatures. At further downturn of temperature two-phase
equilibrium becomes unstable and the system passes in a single-phase state. These
results remain in force and at the account of interaction of interphase borders with
each other and with the ends of linear system. Following Landau [1] we shall consider
the linear system made of alternating pieces of two various phases. Points of contact
between various phases (interphase borders) we shall present as a weak solution.
For linear system of the limited size L $(L >> 1)$ at low temperatures a single-phase
state is stable. The increase in temperature will lead to phase transition of the first
order in a two-phase state. The original cascade of phase transitions of the first
order, because of increase of quantity of interphase border *of item* will be observed
actually. 1. L.D.Landau, E.M.Lifshits. Theoretical physics. Statistical physics. A
part 1. 4 edition. Moscow (In Russian): the Science publisher, 1995.

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