On dynamics in the vicinity of a phase transition to a superconducting state.

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We begin with a microscopic description in the temperature Green's function formalism to derive an effective static model of the superconducting phase transition. Then, dynamical equations that are valid in the vicinity of the phase transition into the superconducting state are given. The possible effects of the field of charge carriers' magnetic interactions and the field of temperature fluctuations were taken into account. The order of the phase transition is discussed on the bases of renormalisation group and $4-\varepsilon$ expansion. The high order behavior of the expansion in the model is found and used for the Borel–transform of the series.