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Quark-Meson model from the real-time functional renormalization group

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In this work, Quark-Meson model is formulated in real-time, taking into account the dynamic properties (dissipation of σ and π) by considering the system interacting with a heat bath. The symmetry of thermal equilibrium of the real-time action combined fermionic system is studied. Real-time functional renormalization group method is employed to study the flow of the effective potential and it is found that the dynamic properties of the system does have influence on the static observables but the influence is minor. We compare the phase diagrams and static observables such as screening masses and condensates under zero damping, physical damping and infinite damping.

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