



High Energy Physics - Phenomenology

Kinetics of Chiral Phase Transitions in Quark Matter

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(Submitted on 27 Jun 2011)

We study the kinetics of chiral transitions in quark matter using a microscopic framework (Nambu-Jona-Lasinio model) and a phenomenological model (Ginzburg-Landau free energy). We focus on the coarsening dynamics subsequent to a quench from the massless quark phase to the massive quark phase. The morphology of the ordering system is characterized by the scaling of the order-parameter correlation function. The domain growth process obeys the Allen-Cahn growth law, $L(t) \sim t^{1/2}$. We also study the growth of bubbles of the stable massive phase from the metastable massless phase.

Comments: To appear in proceedings of Gribov-80 Memorial workshop on Quantum Chromodynamics and Beyond, ICTP, 26-28 May 2010, to be published by World Scientific

Subjects: **High Energy Physics - Phenomenology (hep-ph)**; Statistical Mechanics (cond-mat.stat-mech); Nuclear Theory (nucl-th)

Cite as: **arXiv:1106.5360 [hep-ph]**
(or **arXiv:1106.5360v1 [hep-ph]** for this version)

Submission history

From: Hiranmaya Mishra [view email]

[v1] Mon, 27 Jun 2011 11:00:36 GMT (594kb)

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