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Time-dependent GL approach to the dynamics of inhomogeneous chiral condensates

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We study the dynamics of inhomogeneous scalar and pseudoscalar chiral order parameters within the frame-work of the time-dependent Ginzburg-Landau equations. We utilize a nonlocal chiral quark model to obtain the phase diagram of the model as function of temperature and baryon chemical potential and study the formation of metastable spatial domains of matter where the order parameters acquire a spatial modulation in the course their dynamical evolution. We found that, before reaching the expected equilibrium homogeneous state, both scalar and pseudoscalar chiral condensates go through long-lived metastable inhomogeneous structures.

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