Long-time behaviour of solutions to phase-field systems

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Long-time be haviour of solutions of several kinds of phase-field systems will be studied. We show that any global bounded solution converges to a single stationary state as time goes to infinity. It is possible to find Lyapunov functionals for the problems and compactness of trajectories can be proved. However, it is not enough for convergence because the set of stationary solutions need not be discrete. Hence a generalized versions of the Łojasiewicz-Simon theorem are applied, where the idea of analyticity plays a key role.

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