Convergence of solutions of nonlocal phase-separation models to equilibria

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We will discuss convergence of solutions of phase-transitions systems which are nonlocal in space. These models take into account interactions between states in both short and long scales, which is expressed by a convolution with a suitable kernel. Solutions of the models in question satisfy the energy inequality, however, the corresponding energy functionals are not twice continuously differentiable on the spaces where compactness of trajectories has been proved. This makes impossible an application of the standard Łojasiewicz inequality, which is commonly used in proofs of convergence of solutions of phase-field systems, and requires to employ a non-smooth version of this inequality.