A discussion of two models extending the Cahn-Hilliard equation to a temperature-dependent setting

Anja Schlömerkemper (Universität Würzburg)

The dynamics of binary media can be modeled by the Cahn-Hilliard equation. Sometimes the phase separation depends crucially on the temperature. I will discuss two models introduced in joint work with Francesco De Anna, Chun Liu and Jan-Eric Sulzbach, arXiv:2112.14665. The models are obtained by combining ideas from non-equilibrium thermodynamics with an energetic variational approach and taking the transport property of the temperature into account. I will discuss selection criteria for these models and provide some analytical results regarding well-posedness of one of the models.