On a nonstandard viscous nonlocal Cahn-Hilliard system

Jürgen Sprekels

Weierstrass Institute, Berlin, Germany

We consider a nonlocal version of a nonstandard system of Cahn–Hilliard type whose local analogue was introduced by P. Podio-Guidugli as a model for phase separation and diffusion of atomic species on a lattice [see Ric. Mat. 55 (2006), 105-118]. The local variant has been the subject of a series of papers by P. Colli, G. Gilardi, P. Podio-Guidugli, and the author, in the past years. In this lecture, we present an analysis of the more challenging nonlocal variant of the model. Besides existence and uniqueness, we establish strong stability results and, if time permits, an associated optimal control problem.