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Weak solutions of grain boundary motion model with singularity. (English) Zbl 1183.35159
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Summary: We consider the grain boundary motion model of Kobayashi-Warren-Carter type, which arises in material sciences. The system, which consists of two nonlinear parabolic PDEs with singularity, is of the phase-field type. In this paper we show the global existence of solutions for our model in a weak variational sense.

MSC:

[35K51](#) Initial-boundary value problems for second-order parabolic systems

[35R35](#) Free boundary problems for PDEs

[35D30](#) Weak solutions to PDEs

[35K59](#) Quasilinear parabolic equations

[35K67](#) Singular parabolic equations

Cited in **6** Documents

Keywords:

Kobayashi-Warren-Carter type; global existence