22(6)

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摘要
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分类号   35K55

Ginzburg-Landau Vortex and Mean Curvature Flow with External Force Field

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Abstract This paper is devoted to the study of the vortex dynamics of the Cauchy problem for a parabolic Ginzburg--Landau system which simulates inhomogeneous type II superconducting materials and three-dimensional superconducting thin films having variable thickness. We will prove that the vortex of the problem is moved by a codimension k mean curvature flow with external force field. Besides, we will show that the mean curvature flow depends strongly on the external force, having completely different phenomena from the usual mean curvature flow.

Key words   system of parabolic equations   Ginzburg--Landau vortex   mean curvature flow

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