Mathematics > Analysis of PDEs

Continuity of attractors for a nonlinear parabolic problem with terms concentrating in the boundary

Gleiciane S. Aragão, Antônio L. Pereira, Marcone C. Pereira

(Submitted on 31 Mar 2012)

We analyze the dynamics of the flow generated by a nonlinear parabolic problem when some reaction and potential terms are concentrated in a neighborhood of the boundary. We assume that this neighborhood shrinks to the boundary as a parameter \epsilon goes to zero. Also, we suppose that the "inner boundary" of this neighborhood presents a highly oscillatory behavior. Our main goal here is to show the continuity of the family of attractors with respect to \epsilon. Indeed, we prove upper semicontinuity under the usual properties of regularity and dissipativeness and, assuming hyperbolicity of the equilibria, we also show the lower semicontinuity of the attractors at \epsilon=0.

Subjects:	**Analysis of PDEs (math.AP)**
MSC classes:	35R15, 35B40, 35B41, 35B25
Cite as:	**arXiv:1204.0117 [math.AP]**
	(or **arXiv:1204.0117v1 [math.AP]** for this version)

Submission history

From: Marcone Pereira Ph. D. [view email]
[v1] Sat, 31 Mar 2012 17:24:49 GMT (73kb,D)

Which authors of this paper are endorsers?