RATE OF CONVERGENCE OF GLOBAL ATTRACTORS FOR SOME PERTURBED REACTION-DIFFUSION EQUATIONS UNDER SMOOTH PERTURBATIONS OF THE DOMAIN

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Abstract. In this paper we obtain a rate of convergence for the asymptotic behavior of some semilinar parabolic problems with Dirichlet boundary conditions relatively to smooth perturbations of the domain. We will obtain a rate of convergence dependent on convergence of domains for eigenvalues, eigenfunctions, invariant manifolds and continuity of attractors.

1. Introduction

There are several physical, biological and engineering problems where a good model to describe the behaviour of the problem can be made with a semilinear reaction-diffusion system, some examples can be found in classical books like, for instance, [9]. The study of the asymptotic behaviour of the systems solutions is one of the most interesting subjects for these problems, more specifically the existence of asymptotic concentrations knows as attractors and the continuity of this attractors for perturbed problems, see more about this in [5] and their references. The authors of [1] developed some important results about the continuity of the asymptotic dynamics for semilinear parabolic problems with Dirichlet boundary conditions relatively to perturbation on the domain. This type of problems