

**L^p -PULLBACK ATTRACTORS
FOR NON-AUTONOMOUS REACTION-DIFFUSION
EQUATIONS WITH DELAYS**

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ABSTRACT. In this paper, we consider the non-autonomous reaction-diffusion equations with hereditary effects and the nonlinear term f satisfying the polynomial growth of arbitrary order $p - 1$ ($p \geq 2$). The delay term may be driven by a function with very weak assumptions, namely, just measurability. We extend the asymptotic *a priori* estimate method (see [29]) to our problem and establish a new existence theorem for the pullback attractors in $C_{L^p(\Omega)}$ ($p > 2$) (see Theorem 2.12), which generalizes the results obtained in [12].

1. Introduction

Delay differential equations (DDE for short) are considered as mathematical models to describe the dynamics of events occurring in the past. For this reason DDE are receiving extensive attention and are widely applied to describe physical and chemical processes, engineering systems, biological and/or communication systems, etc. (see [18]). In the field of mathematics, one pays much attention to the well-posedness and long-time behaviour of solutions for the DDE. For the well-posedness of solutions and dynamical behaviour about DDE, there exists

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