Almost automorphic and almost periodic dynamics for quasimonotone non-autonomous delay differential equations *

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Abstract

Conditions establishing the occurrence of almost automorphic and almost periodic dynamics for monotone non-autonomous recurrent finite-delay functional differential equations are established. Topological methods are used in order to ensure the presence of almost automorphic dynamcis for a monotone skew-product semiflow in the case of existence of a semicontinuous semi-equilibrium. When the semiflow arises from a recurrent quasimonotone finite-delay differential equation, and if the semi-equilibria are continuous and strong, the presence of almost automorphic extensions of the base flow is persistent under small perturbations. These methods show the existence of almost-periodic minimal sets under an additional convexity condition. Some examples show the applicability of these results.