
Almost Periodicity of State-dependent Impulsive Neural Networks

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Abstract

In this talk, we address a new model of neural networks related to the discontinuity phenomena which is called impulsive recurrent neural networks with variable moments of time. Sufficient conditions for existence and uniqueness of exponentially stable almost periodic solution are investigated. An example is given to illustrate our theoretical results. The main novelty of the talk is to investigate sufficient conditions ensuring the existence and uniqueness of almost periodic solution. To solve the problem, we should develop the technique of the reduction of the considered system to system with fixed moments of impulses. That is, B-equivalence method, which was studied for bounded domain in the phase space, is utilized. Equations with non fixed moments of discontinuity create a great number of opportunities for theoretical inquiry as well as theoretical challenges. The proposed new involvements have an important role for the real world problems. Exceptional practical interest is connected with discontinuities, which appear at non-prescribed moments of time.

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