

脉冲时滞Hassell-Varley-Holling功能性反应捕食者-食饵系统周期解的充要条件

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Necessary and Sufficient Conditions for the Existence of Periodic Solutions in an Impulsive Predator-prey System with Hassell-Varley-Holling Response

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摘要 研究一类具Hassell-Varley-Holling功能性反应的非自治脉冲时滞捕食者-食饵系统的周期解存在性问题. 基于重合度理论的延拓定理, 发展了一种新的解的估计技巧, 并运用拓扑度的同伦不变性, 得到了这类系统周期解存在的充要条件.

关键词: Hassell-Varley-Holling 功能性反应 捕食者-食饵系统 周期解

Abstract: This paper considers the existence of periodic solutions in an impulsive predator-prey system with Hassell-Varley-Holling response. Based on continuous theorem of coincidence theory, we develop a new estimate technique and obtain the necessary and sufficient conditions for the existence of periodic solutions by the invariance property of homotopy.

Key words: Hassell-Varley-Holling response predator-prey model periodic solutions

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