

一类基于IPM策略的捕食者-食饵系统的动力学性质

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The Dynamics of a Predator-Prey Model Concerning Integrated Pest Management

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摘要 基于综合害虫管理策略(IPM), 研究了一类具有阶段结构和脉冲效应的捕食者-食饵系统的动力学性质. 根据 Floquet 乘子理论和小振幅扰动理论, 证明了当脉冲周期小于某个临界值时, 系统存在一个全局渐近稳定的害虫根除周期解; 给出了系统持续生存的充分条件.

关键词: [捕食系统](#) [IPM策略](#) [持续生存](#) [灭绝](#)

Abstract: Based on integrated pest management, a stage-structured predator-prey system with impulsive effect is proposed and investigated. By the Floquet theory and small amplitude perturbation skills, it is proved that there exists a globally stable pest-eradication periodic solution when the impulsive period is less than some critical values. Further, sufficient conditions for the permanence of the system is established.

Key words: [predator-prey system](#) [IPM](#) [permanence](#) [extinction](#)

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