

具有 n 个小时滞脉冲系统的周期解

杨秋鸿, 冯春华

广西师范大学数学科学学院, 桂林 541004

Periodic Solutions of Impulsive Systems with n Small Delays

YANG Qiuhong, FENG Chunhua

College of Mathematical Science, Guangxi Normal University, Guilin 541004

- 摘要
- 参考文献
- 相关文章

全文: [PDF \(299 KB\)](#) [HTML \(1 KB\)](#) 输出: [BibTeX](#) | [EndNote \(RIS\)](#) [背景资料](#)

服务

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ E-mail Alert
- ▶ RSS

作者相关文章

- ▶ 杨秋鸿
- ▶ 冯春华

摘要 本文考虑有 n 个小时滞的脉冲系统, 利用隐函数存在性定理证明了该系统时滞充分小时, 系统的周期解存在性, 推广了已有的相关结论.

关键词: 小时滞 脉冲 周期解 隐函数存在性定理

Abstract: An impulsive system with n small delays is considered. If the delays are small enough, existence of periodic solutions for impulsive system is proved by using the implicit function theorem. The results generalize the corresponding work of known literature.

Key words: small delay impulsive periodic solution implicit function theorem

收稿日期: 2009-03-16;






基金资助:




国家自然科学基金(10961005)和广西壮族自治区研究生教育创新计划(2008106020701 M234)资助项目.

引用本文:

杨秋鸿,冯春华. 具有 n 个小时滞脉冲系统的周期解[J]. 应用数学学报, 2013, (1): 165-175.

YANG Qiuhong,FENG Chunhua. Periodic Solutions of Impulsive Systems with n Small Delays[J]. Acta Mathematicae Applicatae Sinica, 2013, (1): 165-175.

- [1] Zheng X Y, Ng K F. Metric Subregularity and Constraint Qualifications for Convex Generalized Equations in Banach Spaces. SIAM J Optim., 2007, 18: 437-460 
- [2] Zheng X Y, Ng K F. Calmness for L-subsmooth Multifunction in Banach Spaces. SIAM, J. Optim., 2009, 19: 1648-1673 
- [3] Li Wantong, Huo Haifeng. Existence and Global Attractivity of Positive Periodic Solutions of Functional Differential Equations with Impulses. Nonlinear Analysis 2004, 59: 857-877
- [4] Ng K F, Yang W H. Error Bounds for Abstract Linear Inequality Systems. SIAM J. Optim., 2002, 13: 24-43 
- [5] Yang Zhichun, Xu Daoyi. Existence and Exponential Stability of Periodic Solution for Impulsive Delay Differential Equations and Applications. Nonlinear Analysis, 2006, 64: 130-145 
- [6] Ng K F, Zheng X Y. Error Bounds of Constrained Quadratic Functions and Piecewise Affine Inequality System. Journal of Optimization Theory and Applications, 2003, 118: 601-618 
- [7] Weng Aizhi, Sun Jitao. Globally Exponential Stability of Periodic Solutions for Nonlinear Impulsive Delay Systems. Nonlinear Analysis

- [8] Zheng X Y, Ng K F. Linear Regularity for a Collection of Subsmooth Sets in Banach Spaces. *SIAM, J. Optim.*, 2008, 19: 62-76 
- [9] Clarke F H. *Optimization and Nonsmooth Analysis*. New York: Wiley, 1983
- [10] Mordukhovich B S. *Variational Analysis and Generalized Differentiation I, II*. Berlin, Heidelberg: Springer-Verlag, 2006
- [11] Zhang Liang, Li Hongxu. Periodicity on a Class of Neutral Impulsive Delay System. *Applied Mathematics and Computation*, 2008, 20: 178-185
- [12] Mordukhovich B S, Shao Y. Nonsmooth Sequential Analysis in Asplund Spaces. *Trans. Amer. Math. Soc.*, 1996, 348: 1235-1280 
- [13] Lakshmikantham V, Bainov D, Simeonov P. *Theory of Impulsive Differential Equations*. Singapore: World Scientific, 1989 
- [1] 叶国炳, 申建华, 李建利. 带超前项的三阶脉冲中立型积分微分方程的初值问题[J]. *应用数学学报*, 2012, (6): 1044-1057.
- [2] 何世峰, Sotiris K. Ntouyas, 任永. 一类具有无穷时滞中立型非稠定脉冲随机泛函微分方程积分分解的存在性[J]. *应用数学学报*, 2012, (4): 703-718.
- [3] 钟敏玲, 刘秀湘. 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[J]. *应用数学学报*, 2012, (2): 297-308.
- [4] 赵书芬, 张建元. 时滞脉冲抛物型微分方程解的存在性及其在种群动力学中的应用[J]. *应用数学学报*, 2011, 34(6): 1068-1081.
- [5] 李晓静, 周友明, 鲁世平. 一类二阶 n -维中立型泛函微分系统周期解存在性问题[J]. *应用数学学报*, 2011, 34(3): 560-573.
- [6] 施秀莲. 一类具有Holling III类功能性反应的捕食者-食饵系统的时间周期解的存在性与稳定性[J]. *应用数学学报*, 2011, 34(2): 272-282.
- [7] 施秀莲. 一类具有Holling III类功能性反应的捕食者-食饵系统的时间周期解的存在性与稳定性[J]. *应用数学学报*, 2011, 34(1): 272-282.
- [8] 魏春金, 陈兰荪. 在污染环境下竞争Monod恒化器模型的动力学分析[J]. *应用数学学报*, 2010, 33(6): 990-1000.
- [9] 张兴秋, 王新华. 半直线上具有 p -Laplacian算子的Sturm-Liouville型脉冲边值问题的单调迭代正解[J]. *应用数学学报*, 2010, 33(5): 780-791.
- [10] 陈远强, 许弘雷. 脉冲控制系统的渐近稳定性分析[J]. *应用数学学报*, 2010, 33(3): 479-489.