

Banach空间中脉冲微分方程初值问题解的存在性

秦丽娟

甘肃农业大学理学院, 兰州, 730070

Existence of Solutions for the Initial Value Problems of the Impulsive Differential Equations in Banach Space

QIN Lijuan

College of Science, Gansu Agriculture University, Lanzhou, 730070

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摘要 利用凝聚映射的不动点定理, 对脉冲函数不加紧性条件 和其他额外条件, 通过逐段延拓的方法, 获得了无穷区间上脉冲微分方程初值问题解的存在性, 本质上改进了某些已知的结果.

关键词: Banach空间 初值问题 非紧性测度 解的存在性

Abstract: Based on the fixed point theorem of condensing mapping, the impulsive functions not using compacting and extra conditions, the author obtains the existence results of initial value problems for impulsive equations by the method of extending interval on infinite interval and essentially improves the results.

Key words: Banach spaces initial value problems measure of noncompactness existence of solution

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


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- [1] Erbe L H, Liu X. Quasi-solutions of Nonlinear Impulsive Differential Equations in Abstract Cones. *Appl. Anal.*, 1989, 34: 231-250 
- [2] 谢胜利, 杨志林. Banach空间非线性脉冲Volterra型积分方程和积分-微分方程的可解性. 数学学报, 2003, 46(3): 445-452(Xie Shengli, Yang Zhilin. Solvability of Nonlinear Impulsive Volterra Integral Equations and Integro-Differential Equations in Banach Spaces. *Acta Mathematica Sinica*, 2003, 46(3): 445-452) 
- [3] 路慧芹, 刘立山. Banach空间非线性脉冲Volterra型积分方程整体解的存在性定理及应用. 数学物理学报, 2000, 20(1): 35-48(Lu Huiqin, Liu Lishan. Existence Theorems of Solutions for Nonlinear Impulsive Volterra Integral in Banach Spaces and Applications. *Acta Mathematica Scientia*, 2000, 20(1): 35-48)
- [4] Liu Lishan, Wu Congxin, Fei Guo. A Unique Solution of Initial Value Problems for First-order Impulsive Integro-differential Equations of Mixed Type in Banach Spaces. *J. Math. Anal.*, 2002, 275: 368-385
- [5] 李永祥. 抽象半线性发展方程初值问题解的存在性. 数学学报, 2005, 48(6): 1089-1094(Li Yongxiang. Existence of Solutions of Initial Value Problems for Abstract Semilinear Evolution Equations. *Acta Mathematica Sinica*, 2005, 48(6): 1089-1094) 
- [6] Heinz H R. On the Behaviour of Measure of Noncompactness with Respect to Differentiation and Integration of Vector-valued Functions. *Nonlinear Anal.*, 1983, 7: 1351-1371 

- [7] 于立新, 刘立山. Banach空间中一阶非线性脉冲积分-微分方程初值问题解的存在性. 系统科学与数学, 2003(4), 23(2): 257-265(Yu Lixin, Liu Lishan. The Existence of Solutions of Initial Value Problems for First Order Nonlinear Impulsive Integro-Differential Equation in Banach Space. *Journal of System Science and Mathematical Science*, 2003, 23(2): 257-265)
- [8] Guo Dajun, Liu Xinzhi. Extremal Solutions of Nonlinear Impulsive Integro-differential Equations in Banach Space. *J. Math. Anal. Appl.*, 1993, 177(2): 538-552 
- [1] 陈健, 沈娟, 王其中. 一类非线性斯图谟-刘维尔方程两点边值问题解的存在性[J]. 应用数学学报, 2013, 36(2): 298-305.
- [2] 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.
- [3] 邓义华. 一类中立型延迟积分微分方程线性 θ -方法的渐近稳定性[J]. 应用数学学报, 2010, 33(3): 524-531.
- [4] 倪仁兴. 拟增生算子方程的广义最速下降逼近的收敛性[J]. 应用数学学报, 2009, 32(1): 143-153.
- [5] 王周宏. Farkas引理的几个等价形式及其推广[J]. 应用数学学报, 2008, 31(5): 929-939.
- [6] 俞建. 自反Banach空间中Ky Fan点的存在性[J]. 应用数学学报, 2008, 31(1): 126-131.
- [7] 曾六川. Banach空间中渐近非扩张映象的带误差的修正的Ishikawa与Mann迭代程序[J]. 应用数学学报, 2004, 27(4): 674-681.
- [8] 王定成, 苏淳. B值独立同分布随机变元序列的矩完全收敛性[J]. 应用数学学报, 2004, 27(3): 440-448.
- [9] 柴国庆. 二阶奇异初值问题正解[J]. 应用数学学报, 2003, 26(2): 199-207.
- [10] 陈秀. 奇摄动非线性微分方程初值问题的双重层解[J]. 应用数学学报, 2001, 24(2): 291-294.
- [11] 杨志坚, 陈国旺. Boussinesq型方程的周期边界问题与初值问题的解的存在性[J]. 应用数学学报, 2000, 23(2): 261-269.
- [12] 杨志坚, 陈国旺. 具有阻尼项的非线性波动方程的初值问题[J]. 应用数学学报, 2000, 23(1): 45-054.
- [13] 刘亚成. 神经传播型方程初值问题解的Blow-up[J]. 应用数学学报, 1997, 20(2): 0-0.
- [14] 徐宗本, 王利生. 非线性Lipschitz算子的定量性质(I)—Lip数[J]. 应用数学学报, 1996, 19(2): 175-184.
- [15] 蒋耀林, 游兆永. 二阶非线性发展方程及其差分方程解的渐近性态[J]. 应用数学学报, 1996, 19(2): 271-278.