

论文

关于增生算子方程解的带误差的Ishikawa迭代程序

上海师范大学数学系

摘要:

该文在 Banach空间中证明了,带误差的Ishikawa迭代序列强收敛到Lipschitz连续的增生算子方程的唯一解.而且,也给Ishikawa迭代序列提供了一般的收敛率估计.利用该结果还推得,带误差的Ishikawa迭代序列也强收敛到Lipschitz 连续的强增生算子方程的唯一解.

关键词: 任意实 Banach空间 增生算子 带误差的Ishikawa 迭代序列 收敛率估计

分类号:

47H09; 47H10; 47H17

Ishikawa Iteration Process with Errors for Solutions to Equations Involving Accretive Operators

Abstract:

It is shown that the Ishikawa iterative sequence with errors converges strongly to the unique solution of the equation involving the Lipschitz continuous accretive operator in a Banach space. Moreover, our result provides a general convergence rate estimate for the Ishikawa iterative sequence. From this result, it follows that the Ishikawa iterative sequence with errors alsoconverges strongly to the unique solution of the equation of the Lipschitz continuous strongly accretive operator.

Keywords: Arbitrary real Banach space Accretive operator Ishikawa iterative sequence with errors Convergence rate estimate.

收稿日期 修回日期 网络版发布日期

DOI:

基金项目:

高等学校优秀青年教师教学和科研奖励基金、上海市高校科技发展基金(部分)和上海市曙光计划基金

通讯作者:

作者简介:

参考文献:

[1] Browder F E. Nonlinear mapping of nonexpansive and accretive type in Banach spaces. Bull Amer Math Soc, 1967, [STHZ]73 [STBZ]: 875-882

[2] Liu L W. Strong convergence of iteration methods for equations involving accretive operators in Banach spaces. Nonlinear Anal, 2000,42: 271-276

[3] Liu L W. Approximation of fixed points of a strictly pseudocontractive mapping. Proc Amer Math Soc,1997, [125: 1363-1366

[4] 李育强, 刘理蔚. 关于Lipschitz强增生算子的迭代程序. 数学学报, 1998, 41(4): 845-850

[5] Chidume C E. An iterative process for nonlinear Lipschitzian strongly accretive mappings in

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(340KB)
- ▶ [HTML全文]
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ 任意实 Banach空间
- ▶ 增生算子
- ▶ 带误差的Ishikawa 迭代序列
- ▶ 收敛率估计

本文作者相关文章

- ▶ 曾六川

PubMed

- ▶ Article by Ceng, L. C.

spaces. J Math Anal Appl, 1990,15: 453-461

[6] Chidume C E, Osilike M O. Ishikawa iteration process for nonlinear Lipschitz strongly accretive mappings. J Math Anal Appl, 1995,192: 727-741

[7] Rhoades B E. Comments on two fixed point iteration methods. J Math Anal Appl, 1976, 56: 741-750

[8] Martin R H. A global existence theorem for autonomous differential equations in Banach spaces. Proc Amer Math Soc, 1970, 26: 307-314

[9] Morales C. Pseudocontractive mappings and Leray Schauder boundary condition. Comment Math Univ Carolina, 1979, 20: 745-746

[10] Reich S. Constructive techniques for accretive and monotone operators, in: Applied Nonlinear Analysis. New York: Academic Press, 1979, 335-345

[11] Tan K K, Xu H K. Iterative solutions to nonlinear equations of strongly accretive operators in Banach spaces. J Math Anal Appl, 1993, 178: 9-21

[12] Zeng L C. Error bounds for approximation solutions to nonlinear equations of strongly accretive operators in uniformly smooth Banach spaces. J Math Anal Appl, 1997, 209: 67-80

[13] Zeng L C. Iterative approximation of solutions to nonlinear equations of strongly accretive operators in Banach spaces. Nonlinear Anal, 1998, 31: 589-598

[14] 曾六川. Lipschitz局部强增殖算子的非线性方程的解的迭代构造. 应用数学和力学, 1995,16: 543-552

[15] 曾六川, 杨亚立. Banach空间中Lipschitz严格伪压缩映象的迭代逼近. 数学年刊, 1999,20A: 389-398

[16] Liu L S. Ishikawa and Mann iterative process with errors for nonlinear strongly accretive mappings in Banach spaces. J Math Anal Appl, 1995, 194: 114-125

[17] Liu L S. Ishikawa type and Mann type iterative process with errors for constructing solutions of nonlinear equations involving m accretive operators in Banach spaces. Nonlinear Anal, 1998, 34: 307-317

[18] Dunn J C. Iterative construction of fixed points for multivalued operators of the monotone type. J FunctAnal, 1978, 27: 38-50

本刊中的类似文章

1. 宋义生, 杨长森. 关于弱压缩算子的变分不等式解的粘滞逼近算法[J]. 数学物理学报, 2009,29(3): 656-668

文章评论 (请注意: 本站实行文责自负, 请不要发表与学术无关的内容! 评论内容不代表本站观点.)

反馈人	<input type="text"/>	邮箱地址	<input type="text"/>
反馈标题	<input type="text"/>	验证码	<input type="text" value="5729"/>