

论文

关于弱压缩算子的变分不等式解的粘滞逼近算法

(河南师范大学 数学与信息科学学院 河南 新乡 453007)

摘要:

在严格凸且具有一致Gâteaux可微范数的Banach空间\$E\$框架内, 该文借助于两种粘滞逼近算法去近似逼近关于弱压缩算子的变分不等式解并且也获得了相应的收敛率估计.

关键词: 粘滞逼近算法 非扩张映射序列 弱压缩算子 收敛率估计 严格凸Banach空间

分类号:

47H06; 47J05

Solving Variational Inequality with Weak Contraction by Using Viscosity Approximation Methods

(College of Mathematics and Information Science, Henan Normal University, Henan Xinxiang 453007)

Abstract:

In this paper, under the framework of a strictly convex Banach space with a uniformly Gâteaux differentiable norm, we study strong convergence of two explicit viscosity approximation methods for finding a solution to the variational inequality with weakly contractive mapping  $A$ , and give the estimate of convergence rate.

Keywords: Viscosity approximation methods Nonexpansive mappings sequence Weak contractions The estimate of convergence rate Strictly convex Banach space

收稿日期 2007-12-20 修回日期 2009-04-15 网络版发布日期 2009-06-25

DOI:

基金项目:

教育部科技司科学基金(208081)和河南师范大学青年基金资助

通讯作者:

作者简介:

参考文献:

[1] Alber Ya I, Guerre-Delabriere S. Principles of Weakly Contractive Maps in Hilbert Spaces//Gohberg I, Yu Lyubich (Eds). New Results in Operator Theory. Basel: Birkh\{a}user, 1997

[2] Boyd D W, Wong T S W. On nonlinear contractions. Proc Amer Math Soc, 1969, 20: 458--464

[3] Kirk W A. Contraction Mapping and Extensions//Kirk W A, Sims B (Eds). Handbook of Metric Fixed Point Theory. Dordrecht: Kluwer Academic Publishers, 2001: 1--32

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(328KB)
- ▶ [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

- ▶ 粘滞逼近算法
- ▶ 非扩张映射序列
- ▶ 弱压缩算子
- ▶ 收敛率估计
- ▶ 严格凸Banach空间

本文作者相关文章

- ▶ 宋义生
- ▶ 杨长森

PubMed

- ▶ Article by Song, Y. S.
- ▶ Article by Yang, C. S.

[4] Rhoades B E. Some theorems on weakly contractive maps. *Nonlinear Anal*, 2001, 47: 2683--2693

[5] Chidume C E, Zegeye H, Aneke S J. Approximation of fixed points of weakly contractive nonself maps in Banach spaces. *J Math Anal Appl*, 2002, 270: 189--199

[6] Alber Y, Reich S, Yao J C. Iterative methods for solving fixed-point problems with nonself-mappings in Banach spaces. *Abstract Appl Anal*, 2003, 4: 193--216

[7] Zeng L C, Tanaka T, Yao J C. Iterative construction of fixed points of nonself-mappings in Banach spaces. *J Comput Appl Math*, 2007, 206: 814--825

[8] Moudafi A. Viscosity approximation methods for fixed-points problems. *J Math Anal Appl*, 20002, 41: 46--55

[9] Xu H K. Viscosity approximation methods for nonexpansive mappings. *J Math Anal Appl*, 2004, 298: 279--291

[10] Song Y, Chen R. Strong convergence theorems on an iterative method for a family of finite nonexpansive mappings. *Applied Mathematics and Computation*, 2006, 180: 275--287

[11] Song Y, Chen R. Viscosity approximation methods for nonexpansive nonself-mappings. *J Math Anal Appl*, 2006, 321: 316--326

[12] Song Y, Chen R. Iterative approximation to common fixed points of nonexpansive mapping sequences in reflexive Banach spaces. *Nonlinear Analysis*, 2007, 66: 591--603

[13] Song Y, Chen R. Convergence theorems of iterative algorithms for continuous pseudocontractive mappings. *Nonlinear Anal*, 2007, 67: 486--497

[14] Song Y, Chen R. An approximation method for continuous pseudocontractive mappings. *J Inequal Appl*, 2006: 1--9

[15] Song Y, Chen R, Zhou H. Viscosity approximation methods for nonexpansive mapping sequences in Banach spaces. *Nonlinear Analysis*, 2007, 66: 1016--1024

[16] Song Y. Iterative approximation to common fixed points of a countable family of nonexpansive mappings. *Applicable Analysis*, 2007, 86(11): 1329--1337

[17] Song Y. Iterative selection methods for the common fixed point problems in a Banach space. *Applied Mathematics and Computation*, 2007, 193(1): 7--17

[18] Song Y, Xu S. Strong convergence theorems for nonexpansive semigroup in Banach spaces. *J Math Anal Appl*, 2008, 338: 152--161

[19] Song Y, Chen R. Viscosity approximative methods to Cesaro means for non-expansive mappings.

[20] Suzuki T. Moudafi's viscosity approximations with Meir-Keeler contractions. J Math Anal Appl, 2007, 325: 342--352

[21] Reich S. Asymptotic behavior of contractions in Banach spaces. J Math Anal Appl, 1973, 44: 57--70

[22] Kopeck\`a E, Reich S. Nonexpansive retracts in Banach spaces. Banach Center Publications, 2007, 77: 161--174

[23] Reich S. Approximating zeros of accretive operators. Proc Amer Math Soc, 1975, 51: 381--384

[24] Megginson R E. An Introduction to Banach Space Theory. New York Inc: Springer-Verlag, 1998

[25] Takahashi W. Nonlinear Functional Analysis--Fixed Point Theory and its Applications. Yokohama: Yokohama Publishers inc, 2000

[26] Istratescu V I. Fixed Point Theory: An Introduction. Netherlands: D. Reidel Publishing Company, 1981

[27] Aubin J P, Ekeland I. Applied Nonlinear Analysis. Canada: Wiley-Interscience Publication John Wiley and Sons, 1984

[28] Halpern B. Fixed points of nonexpansive maps. Bull Amer Math Soc, 1967, 73: 957--961

[29] Bruck Jr R E. Properties of fixed-point sets of nonexpansive mappings in Banach spaces. Trans Amer Math Soc, 1973, 179: 251--262

[30] Alber Ya I, Iusem A N. Extension of subgradient techniques for nonsmooth optimization in Banach spaces. Set-valued Anal, 2001, 9(4): 315--335

[31] Bruck R E. A simple proof of the mean ergodic theorem for nonlinear contractions in Banach spaces. Israel J Math, 1979, 32: 107--116

[32] Bruck R E. On the convex approximation property and the asymptotic behavior of nonlinear contractions in Banach spaces. Israel J Math, 1981, 38: 304--314

本刊中的类似文章

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="8127"/>

