FIXED POINT THEORY FOR CYCLIC BERINDE OPERATORS

MĂDĂLINA PĂCURAR

Department of Statistics, Forecast and Mathematics
Faculty of Economics and Business Administration, Babeș-Bolyai University
Th. Mihali Street No. 58-60, 400591 Cluj-Napoca, Romania.
E-mail: madalina.pacurar@econ.ubbcluj.ro

Abstract. Inspired by the considerations in [Kirk, W.A., Srinivasan, P.S., Veeramany, P., Fixed points for mappings satisfying cyclical contractive conditions, Fixed Point Theory, 4 (2003), No. 1, 79-89], which were further discussed in [Rus, I.A., Cyclic representations and fixed points, Ann. T. Popoviciu Seminar Funct. Eq. Approx. Convexity, 3 (2005), 171-178], we establish the existence and uniqueness of the fixed point for cyclic strict Berinde operators. Following [Rus, I.A., The theory of a metrical fixed point theorem: theoretical and applicative relevances, Fixed Point Theory, 9 (2008), No. 2, 541-559], we build a so-called theory of the main result, referring concepts and phenomena like Picard operators, data dependence, limit shadowing, well-posedness of the fixed point problem. A Maia type result for cyclic strict Berinde operators is also given.

Key Words and Phrases: Cyclic almost contraction, cyclic Berinde operator, Picard operator, data dependence, well-posedness of a fixed point problem, limit shadowing.

2010 Mathematics Subject Classification: 47H10, 54H25.

References


This work was partially supported by CNCSIS–UEFISCSU, project number PNII-IDEI 2366/2008.

419


Received: November 4, 2010; Accepted: March 10, 2011.