

Banach J. Math. Anal. 6 (2012), no. 1, 74–89

BANACH JOURNAL OF MATHEMATICAL ANALYSIS ISSN: 1735-8787 (electronic) www.emis.de/journals/BJMA/

QUADRUPLE FIXED POINT THEOREMS FOR NONLINEAR CONTRACTIONS IN PARTIALLY ORDERED METRIC SPACES

ERDAL KARAPINAR^{1*} AND VASILE BERINDE²

Communicated by M. A. Japón Pineda

ABSTRACT. In this paper we obtain existence and uniqueness results for quadruple fixed points of operators $F: X^4 \to X$. We also give some examples to support our results.

¹ DEPARTMENT OF MATHEMATICS, ATILIM UNIVERSITY 06836, İNCEK, ANKARA, TURKEY. *E-mail address:* erdalkarapinar@yahoo.com, ekarapinar@atilim.edu.tr

² DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE, NORTH UNIVERSITY OF BAIA MARE, VICTORIEI 76, 430122, BAIA MARE, ROMANIA. *E-mail address*: vasileberinde@vahoo.com

Date: Received: 22 July 2011; Revised: 15 September 2011; Accepted: 12 October 2011. \ast Corresponding author.

²⁰¹⁰ Mathematics Subject Classification. Primary 47H10; Secondary 46J10, 54H25.

Key words and phrases. Fixed point theorems, Nonlinear contraction, Partially ordered, Quadruple Fixed Point, mixed g-monotone.