DISLOCATED QUASI-METRIC AND GENERALIZED CONTRACTIONS

LECH PASICKI

AGH University of Science and Technology
Faculty of Applied Mathematics
Al. Mickiewicza 30
30-059 Kraków, Poland
E-mail: pasicki@agh.edu.pl

Abstract. The paper contains some fixed point theorems for generalized contractions in dislocated quasi-metric spaces. The simplest requirement is condition: \( p(f(y), f(x)) \leq g(p(y, x)) \), for all \( x, y \in X \), where \( p \) is a dislocated quasi-metric on \( X \) (if \( p(x, y) = p(y, x) = 0 \), then \( x = y \); \( 0 \leq p(x, z) \leq p(x, y) + p(y, z) \)) and \( g \) is a comparison function of a general type. Our results are far extensions of some known fixed point theorems for dislocated quasi-metric spaces.

Key Words and Phrases: Dislocated quasi-metric, fixed point, generalized contraction, fixed point, cyclic mapping.

2010 Mathematics Subject Classification: 54H25, 47H10, 54E99.

Acknowledgement. The work has been supported by the Polish Ministry of Science and Higher Education.

References


Received: January 6, 2016; Accepted: March 12, 2016.