Fixed Point Theory, 14(2013), No. 2, 301-312
http://www.math.ubbcluj.ro/~nodeacj/sfptcj.html

FIXED POINT THEOREMS FOR NONSELF SINGLE-VALUED ALMOST CONTRACTIONS

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Abstract. Let $X$ be a Banach space, $K$ a non-empty closed subset of $X$ and let $T : K \to X$ be a non-self almost contraction. The main result of this paper shows that if $T$ has the so called property $(M)$ and satisfies Rothe’s boundary condition, i.e., maps $\partial K$ (the boundary of $K$) into $K$, then $T$ has a fixed point in $K$. This theorem generalizes several fixed point theorems for non-self mappings and also extends several important results in the fixed point theory of self mappings to the case on non-self mappings.

Key Words and Phrases: Banach space; non self almost contraction; fixed point; property (M)

2010 Mathematics Subject Classification: 47H09, 47H10.

Acknowledgements. The authors research was supported by the Grant PN-II-RU-TE-2011-3-239 of the Romanian Ministry of Education and Research.

The authors thank Professor Ioan A. Rus for pertinent comments and suggestions that contributed to the improvement of the manuscript.

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301
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Received: March 21, 2012; Accepted: June 10, 2012.