

Diagonal operators and coupled fixed points via weakly Picard operator technique*

Adrian Petruşel[†] Ioan A. Rus[‡] Marcel-Adrian Şerban[§]

Abstract

In this note, using the weakly Picard operator technique we will present some qualitative results for operators generated by an operator defined on a Cartesian product of a metric space with itself. The work is based on a recent paper of the authors.

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keywords: diagonal operator, fixed point, coupled fixed point, weakly Picard operator, qualitative properties, research directions.

1 Introduction

Let X be a nonempty set and $T : X \times X \rightarrow X$ be an operator. By definition, the operator $U_T : X \rightarrow X$, defined by

$$U_T(x) := T(x, x), \quad x \in X$$

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[†]petrusel@math.ubbcluj.ro Babeş-Bolyai University Cluj-Napoca, Department of Mathematics, Kogălniceanu Street No. 1, 400084, Cluj-Napoca, Romania and Academy of Romanian Scientists

[‡]iarus@math.ubbcluj.ro Babeş-Bolyai University Cluj-Napoca, Department of Mathematics, Kogălniceanu Street No. 1, 400084, Cluj-Napoca, Romania

[§]mserban@math.ubbcluj.ro Babeş-Bolyai University Cluj-Napoca, Department of Mathematics, Kogălniceanu Street No. 1, 400084, Cluj-Napoca, Romania