

FIXED POINTS FOR NONSPREADING-TYPE MULTI-VALUED MAPPINGS: EXISTENCE AND CONVERGENCE RESULTS*

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Abstract

In this paper, we introduce a new class of nonlinear multi-valued mappings which is called a *nonspreading-type mapping* in Hilbert spaces, and prove some properties and the existence results for the proposed mapping. Furthermore, we prove weak and strong convergence theorems for a finite family of nonspreading-type multi-valued mappings in Hilbert spaces. As applications, we give examples and numerical results to illustrate our iteration and results.

MSC: 47H04; 47H10; 54H25.

keywords: Fixed point; nonspreading-type multi-valued mapping; weak convergence; strong convergence; Opial's condition.

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