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Nicolaus Copernicus University in Toruń

ON SPLIT EQUALITY MONOTONE VARIATIONAL INCLUSION AND FIXED POINT PROBLEMS IN REFLEXIVE BANACH SPACES

HAMMED ANUOLUWAPO ABASS — OLAWALE KAZEEM OYEWOLE
MAGGIE APHANE

ABSTRACT. In this paper, motivated by the works of Akbar and Shahrosvand [Filomat **32** (2018), no. 11, 3917–3932], Ogbuisi and Izuchukwu [Numer. Funct. Anal. Optim. **41** (2020), no. 2, 322–343], and some other related results in the literature, we introduce a Halpern iterative algorithm and employ a Bregman distance approach for approximating a solution of split equality monotone variational inclusion problem and fixed point problem of Bregman relatively nonexpansive mapping in reflexive Banach spaces. Under suitable condition, we state and prove a strong convergence result for approximating a common solution of the aforementioned problems. Furthermore, we give an application of our main result to variational inequality problems and provide some numerical examples to illustrate the convergence behavior of our result. The result presented in this paper extends and complements many related results in literature.

1. Introduction

Let E be a reflexive real Banach space with E^* its dual. Let $A: E \rightarrow 2^{E^*}$ be a set-valued mapping and $B: E \rightarrow E^*$ be a single-valued nonlinear mapping. Then the Monotone Variational Inclusion Problem (MVIP) is to find $x \in E$ such

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