

Strong convergence for the split common fixed point problems for demicontractive mappings in Hilbert spaces

ABSTRACT

The split common fixed problem (SCFPP) has been intensively studied by numerous authors due to its various applications in many physical problems. However, to employ the algorithm for solving such a problem, one needs to know the prior information on the normed or bounded linear operator. Recently, Cui and Wang introduced the new algorithm for solving such a problem which does not need any prior information on the normed or bounded linear operator and they established the weak convergence results under some mild conditions. It is well-known that in the setting of infinite dimensional Hilbert space, the weak convergence does not imply strong convergence. It is the aim of this article to continue studying this problem (SCFPP) and establish the strong convergence result based on the result of Cui and Wang, this will be done for the class of demicontractive mappings. The results presented in this paper, not only extend and improve the result of Cui and Wang, but also extend, improve and generalize several well-known results announced.

Keyword: Split common fixed problem; Strong convergence; Demicontractive mappings; Hilbert spaces