REGULARIZED PROJECTION METHOD OF SOLVING SPLIT SYSTEM OF FIXED POINT SET CONSTRAINT EQUILIBRIUM PROBLEMS IN REAL HILBERT SPACE

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Abstract. In this paper, we propose two algorithms which combines Mann iterative scheme, regularization technique and projection method for solving finite family of split equilibrium problems and split common fixed point problems: we call the problems split system of fixed point set constraint equilibrium problems (SSFPSCEPs). The weak and strong convergence theorems for iterative sequences generated by the algorithms are established under widely used assumptions for equilibrium bifunctions. To obtain the strong convergence, we combine the first algorithm with the shrinking projection method in the second algorithm. Finally, an application and one numerical experiment is given to demonstrate the efficiency of our algorithms.

Key Words and Phrases: Common fixed point problem, split equilibrium problem, monotone bifunction, regularization technique, shrinking projection.

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