On system of split generalised mixed equilibrium problem and fixed point problems for multivalued mappings with no prior knowledge of operator norm

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Abstract: In this paper, we introduce system of split generalised mixed equilibrium problem, which is more general than the existing well known split equilibrium problems and their generalisations, split variational inequality problems and several other related problems. We propose a new iterative scheme with inertial term, which is independent on the operator norm and obtain strong convergence result for approximating a common solution of the problem and fixed point of finite family of multivalued demicontractive mappings. We obtain consequent results which complement several existing results in this direction in the current literature. We also apply our results to approximate the solution of split convex minimisation problems and present numerical examples to demonstrate the efficiency of our algorithm in comparison with some existing algorithms in the literature.

Keywords: Inertial algorithm, system of split generalised mixed equilibrium problems, fixed point problems, multivalued demicontractive mappings, strong convergence.

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References


