Common Solutions of An Iterative Scheme for Variational Inclusions, Equilibrium Problems and Fixed Point Problems

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Abstract. In this paper, we introduce an iterative scheme by the viscosity approximate method for finding a common element of the set of solutions of a variational inclusion with set-valued maximal monotone mapping and inverse strongly monotone mappings, the set of solutions of an equilibrium problem and the set of fixed points of a nonexpansive mapping. We obtain a strong convergence theorem for the sequences generated by these processes in Hilbert spaces. The results in this paper unify, extend and improve some well-known results in the literature.

Key words. Variational inclusion; Equilibrium problem; Fixed point; Nonexpansive mapping; Maximal monotone mapping; Inverse-strongly monotone mapping