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A new general iterative scheme for split variational inclusion and fixed point problems of k -strict pseudo-contraction mappings with convergence analysis

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Abstract

In this paper, we modify the general iterative method to approximate a common element of the set of solutions of split variational inclusion problem and the set of common fixed points of a finite family of k -strictly pseudo-contractive nonself mapping. Strong convergence theorem is established under some suitable conditions in a real Hilbert space, which also solves some variational inequality problems. Results presented in this paper may be viewed as a refinement and important generalizations of the previously known results announced by many other authors. Finally, some examples to study the rate of convergence and some illustrative numerical examples are presented.

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