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Weak convergence theorems for nonexpansive mappings and monotone mappings. (English)

Zbl 1055.47052

J. Optim. Theory Appl. 118, No. 2, 417-428 (2003).

Let K be a closed convex subset of a real Hilbert space H , $A : K \rightarrow H$ be inverse strongly monotone, and $S : K \rightarrow K$ be nonexpansive. Assuming that the set of solutions of the variational inequality for A and the set of fixed points of S have a nonempty intersection, the authors introduce an iteration process that is shown to generate a sequence converging weakly to an element of this intersection. This is the main result of the paper, which is then applied to obtain a sequence converging to a common fixed point of a nonexpansive map and a strictly pseudocontractive map.

Reviewer: **Nicolas Hadjisavvas (Hermoupolis)**

MSC:

47H10 Fixed-point theorems

55M20 Fixed points and coincidences in algebraic topology

49J40 Variational inequalities

47J20 Variational and other types of inequalities involving nonlinear operators (general)

Cited in **8** Reviews
Cited in **338** Documents

Keywords:

fixed points; nonexpansive mappings; variational inequalities; inverse strongly-monotone mappings

Full Text: [DOI](#)

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