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Strong convergence of composite iterative schemes for zeros of m -accretive operators in Banach spaces. (English) [Zbl 1226.47069](#)

Nonlinear Anal., Theory Methods Appl., Ser. A, Theory Methods 70, No. 5, 1830-1840 (2009).

Summary: We introduce a new composite iterative scheme to approximate a zero of an m -accretive operator A defined on uniform smooth Banach spaces and a reflexive Banach space having a weakly continuous duality map. It is shown that the iterative process in each case converges strongly to a zero of A . The results presented in this paper substantially improve and extend the results due to the first author and *H.-K. Xu* [*Taiwanese J. Math.* 11, No. 3, 661–682 (2007; [Zbl 1219.47102](#))], *T.-H. Kim* and *H.-K. Xu* [*Nonlinear Anal., Theory Methods Appl.* 61, No. 1–2, A, 51–60 (2005; [Zbl 1091.47055](#))] and *H.-K. Xu* [*J. Math. Anal. Appl.* 314, No. 2, 631–643 (2006; [Zbl 1086.47060](#))]. Our work provides a new approach for the construction of a zero of m -accretive operators.

MSC:

[47J25](#) Iterative procedures involving nonlinear operators
[47H06](#) Nonlinear accretive operators, dissipative operators, etc.

Cited in **2** Reviews
Cited in **33** Documents

Keywords:

m -accretive operator; zero of an operator; composite iterative scheme; uniformly smooth; weakly continuous duality map; strong convergence

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