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8. Analysis

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Iterative solutions of nonlinear equations of the accretive type

Suppose E is a real uniformly smooth Banach space and $T : E \to E$ is a demicontinuous $\emptyset$-strongly accretive operator. Strong convergence theorems for the iterative approximation of the solution of the equation $T\chi = f$, $f \in E$ are proved using both the Mann and Ishikawa iteration methods. A related result deals with the iterative approximation of fixed points of $\emptyset$-hemicontractive operators—a class of operators more general than the important class of strong pseudocontractions.