MANN ITERATION FOR DIRECT PSEUDOCONTRACTIVE MAPS

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Abstract. In this note we introduce a new class of maps. Let X be a real normed space, and $B \subset X$ be a nonempty set. The map $T : B \to B$ is *direct pseudocontractive* if there exists $k \in (0, 1)$ such that

$$\|Tx - Ty\|^2 \le k \|x - y\|^2 + \|(I - T)x - (I - T)y\|^2, \forall x, y \in B.$$

For T a direct pseudocontractive map, we prove the convergence of *Mann iteration* to the fixed point of T.

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