

Fixed Point theory for generalized nonexpansive mappings

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Let C be a nonempty subset of a Banach space X . A mapping $T : C \rightarrow X$ is said to be nonexpansive whenever $\|Tx - Ty\| \leq \|x - y\|$ for all $x, y \in C$. A Banach space X is said to have the fixed point property for nonexpansive mappings (FPP, in short) provided that every nonexpansive mapping $T : C \rightarrow C$ has a fixed point, where C is an arbitrary nonempty, closed, convex, bounded subset of X .

In 1965, Kirk proved that every reflexive Banach space with normal structure has the FPP. Since then, fixed point theory of nonexpansive mappings has been developed in several directions. On one side, many authors investigated sufficient conditions on X that imply that X has FPP. On another side, some authors have studied the existence of fixed points for some generalized nonexpansive mappings.

In this talk, we introduce a new class of generalized nonexpansive mappings and study the existence of fixed points.

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