

Claudio H. Morales

Multivalued pseudo-contractive mappings defined on unbounded sets in Banach spaces

Comment.Math.Univ.Carolinae 33,4 (1992) 625-630.

Abstract: Let X be a real Banach space. A multivalued operator T from K into 2^X is said to be pseudo-contractive if for every x, y in K , $u \in T(x)$, $v \in T(y)$ and all $r > 0$, $\|x - y\| \leq \|(1 + r)(x - y) - r(u - v)\|$. Denote by $G(z, w)$ the set $\{u \in K : \|u - w\| \leq \|u - z\|\}$. Suppose every bounded closed and convex subset of X has the fixed point property with respect to nonexpansive selfmappings. Now if T is a Lipschitzian and pseudo-contractive mapping from K into the family of closed and bounded subsets of K so that the set $G(z, w)$ is bounded for some $z \in K$ and some $w \in T(z)$, then T has a fixed point in K .

Keywords: pseudo-contractive mappings

AMS Subject Classification: Primary 47H10