Evgenios P. Avgerinos, Nikolaos S. Papageorgiou

Topological properties of the solution set of integrodifferential inclusions

Comment.Math.Univ.Carolinae 36,3 (1995) 429-442.

Abstract: In this paper we examine nonlinear integrodifferential inclusions in $\mathbb{R}^N$. For the nonconvex problem, we show that the solution set is a retract of the Sobolev space $W^{1,1}(T,\mathbb{R}^N)$ and the retraction can be chosen to depend continuously on a parameter λ. Using that result we show that the solution multifunction admits a continuous selector. For the convex problem we show that the solution set is a retract of $C(T,\mathbb{R}^N)$. Finally we prove some continuous dependence results.

Keywords: retract, absolute retract, path-connected, Vietoris continuous, h-continuous, orientor field
AMS Subject Classification: 34A60