DECAY SOLUTIONS TO RETARDED FRACTIONAL EVOLUTION INCLUSIONS WITH SUPERLINEAR PERTURBATIONS

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Abstract. In this paper, we consider a class of abstract fractional differential inclusion with finite delay in which the multi-valued nonlinearity is possibly superlinear. We analyze some sufficient conditions that ensure the global solvability of problem. Our main result is the existence of a compact set of decay solutions to our problem by estimating the measure of noncompactness and using the fixed point theory for a condensing map. The obtained results will be applied to a concrete polytope fractional differential system.

Key Words and Phrases: Decay solutions, differential inclusion, fixed point, measure of non-compactness; MNC-estimate.

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