REPRESENTATION OF THE SET OF MILD SOLUTIONS TO THE RELAXED SEMILINEAR DIFFERENTIAL INCLUSION

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Abstract

We study the relation between the solutions set to a perturbed semilinear differential inclusion with nonconvex and non-Lipschitz right-hand side in a Banach space and the solutions set to the relaxed problem corresponding to the original one. We find the conditions under which the set of solutions for the relaxed problem coincides with the intersection of closures (in the space of continuous functions) of sets of \( \delta \)-solutions to the original problem.

Keywords: differential inclusion, mild solution, quasi-solution, convexified and perturbed problem, relaxation theorem.

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