

**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 semi-linear 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 δ -solutions to the original problem.

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

2000 Mathematics Subject Classification: 34A60, 34G25, 34K45.

*The author is partially supported by RFBR Grant 04-01-00324.

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Received 16 November 2005