

EXACT PENALTIES IN A PROBLEM OF CONSTRUCTING AN OPTIMAL SOLUTION OF A DIFFERENTIAL INCLUSION**V. V. Karelin, A. V. Fominykh**

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A differential inclusion with given set-valued mapping and initial point is considered. For this differential inclusion, it is required to find a solution that minimizes an integral functional. We use the techniques of support functions and exact penalty functions to obtain some classical results of the maximum principle for differential inclusions in the case where the support function of the set-valued mapping is continuously differentiable in the phase variables. We also consider the case where the support function of the set-valued mapping is not differentiable in the phase variables.

Keywords: nonsmooth functional, differential inclusion, support function, exact penalty function, maximum principle.

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