A NOTE ON SOME BOUNDARY VALUE PROBLEMS FOR HIGHER ORDER DIFFERENTIAL INCLUSIONS*

Aurelian Cernea†

Abstract

We establish Filippov existence theorems for solutions of certain boundary value problems associated to some higher order differential inclusions.

MSC: 34A60

keywords: differential inclusion, boundary value problem, measurable selection.

1 Introduction

This paper is concerned with differential inclusions of the form

$$\mathcal{D}x \in F(t, x), \tag{1.1}$$

where $\mathcal{D}$ is a differential operator and $F(.,.) : [0,1] \times \mathbf{R} \to \mathcal{P}(\mathbf{R})$ is a set-valued map.

In the last years we observe a remarkable amount of interest in the study of existence of solutions of several boundary value problems associated to

---