A STUDY OF SECOND ORDER DIFFERENTIAL INCLUSIONS WITH FOUR-POINT INTEGRAL BOUNDARY CONDITIONS

BASHIR AHMAD
Department of Mathematics, Faculty of Science
King Abdulaziz University
P.O. Box 80203, Jeddah 21589, Saudi Arabia

e-mail: bashir_.qau@yahoo.com

AND

SOTIRIS K. NTIOYAS
Department of Mathematics
University of Ioannina
451 10 Ioannina, Greece

e-mail: sntouyas@uoi.gr

Abstract

In this paper, we discuss the existence of solutions for a four-point integral boundary value problem of second order differential inclusions involving convex and non-convex multivalued maps. The existence results are obtained by applying the nonlinear alternative of Leray Schauder type and some suitable theorems of fixed point theory.

Keywords and phrases: differential inclusions, four-point integral boundary conditions, existence, nonlinear alternative of Leray Schauder type, fixed point theorems.

2010 Mathematics Subject Classifications: 34A60, 34B10, 34B15.

REFERENCES

doi:10.1016/S0022-247X(86)80006-3


Received 28 October 2010