Impulsive Periodic
Boundary Value Problem

Jan DRAESSLER

University of Hradec Králové
e-mail: jan.draessler@uhk.cz

Abstract

n the paper we consider the impulsive periodic boundary value problem with a general linear left hand side. The results are based on the topological degree theorems for the corresponding operator equation $(I - F)u = 0$ on a certain set Ω that is established using properties of strict lower and upper functions of the boundary value problem.

1   Introduction

In this paper we will study the boundary value problem

$$(1.1) \qquad x'' + a(t)x' + b(t)x = f(t, x, x')$$

$$(1.2) \qquad x(t_1+) = J(x(t_1)), \quad x'(t_1+) = M(x'(t_1-)),$$

$$(1.3) \qquad x(0) = x(2\pi), \quad x'(0) = x'(2\pi).$$