

Existence of a Mild Solution to a Second-Order Impulsive Functional-Differential Equation with a Nonlocal Condition

Zlatinka S. Covacheva

Middle East College
Knowledge Oasis Muscat
Al Rusayl 124
Sultanate of Oman
zkovacheva@hotmail.com

Valéry C. Covachev

Institute of Mathematics and Informatics, BAS
Acad. G. Bontchev Str., Bl. 8
1113 Sofia, Bulgaria
vcovachev@hotmail.com

An abstract second-order semilinear functional-differential equation such that the linear part of the right-hand side is given by the infinitesimal generator of a strongly continuous cosine family of bounded linear operators, and provided with impulse and nonlocal conditions is studied. Under not too restrictive conditions the existence of a mild solution is proved using Schauders fixed point theorem.