

Existence Results for Systems of First-Order Stieltjes Differential Equations

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Abstract

In the last years, there has been quite an interest in the theory of Stieltjes differential equations which have the important advantage of providing a unified framework to differential equations, discrete equations, dynamic equations on time scales and differential equations with impulses at fixed times. They are particularly useful for modeling evolution processes in which sudden changes and stationary periods occur.

In this talk, we present existence results for systems of first-order Stieltjes differential equations with a periodic boundary condition or an initial value condition. No growth condition is imposed on the the right-hand side f . Our results rely on the method of g -solution-regions. Examples and an application are also presented.