World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:05, 2020

A Coupled System of Caputo-Type Katugampola Fractional Differential Equations with Integral Boundary Conditions

Authors : Yacine Arioua

Abstract : In this paper, we investigate the existence and uniqueness of solutions for a coupled system of nonlinear Caputo-type Katugampola fractional differential equations with integral boundary conditions. Based upon a contraction mapping principle, Schauders fixed point theorems, some new existence and uniqueness results of solutions for the given problems are obtained. For application, some examples are given to illustrate the usefulness of our main results.

Keywords : fractional differential equations, coupled system, Caputo-Katugampola derivative, fixed point theorems, existence, uniqueness
Conference Title : ICIVPODS 2020 : International Conference on Initial Value Problems and Ordinary Differential Systems
Conference Location : London, United Kingdom
Conference Dates : May 21-22, 2020