

The Existence and Uniqueness of Solution for the System of Fractional Differential Equations with Delay

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ABSTRACT

In this paper, we study the existence and uniqueness of the solution for the system of fractional differential equations with delay. In order to achieve our goal, we use the Banach fixed point theorem. Also, due to the high efficiency of hybrid functions based on Block-Puls functions and Chebyshev polynomials of the second kind, we have presented an efficient numerical method for the solution of the system of fractional differential equations with delay. Finally, the accuracy of the proposed scheme has been examined by solving some important practical systems of fractional differential equations with delay such as Chen system and HIV system.