

ERROR ASSESSMENT IN FORECASTING CRYPTOCURRENCIES TRANSACTION COUNTS USING VARIANTS OF THE GREY LOTKA-VOLTERRA DYNAMICAL SYSTEM

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September 27, 2020

Abstract

The error assessment is made on the classical Grey Model (GM(1,1)) and the variants of Grey Lotka-Volterra dynamical system namely the Grey Lotka-Volterra Model (GLVM), the Fractional Grey Lotka-Volterra Model (FGLVM) and the Variable-order Fractional Grey Lotka-Volterra Model (VFLVM) for modeling the transaction counts of three selected cryptocurrencies in 2-and 3-dimensional framework. Bitcoin, Litecoin and Ripple. The cryptocurrencies of interest are Bitcoin, Litecoin and Ripple. The 2-dimensional models use Bitcoin and Litecoin transactions from April, 28, 2013 to February, 10, 2018. The 3-dimensional model uses transactions of Bitcoin, Litecoin and Ripple from August, 7, 2013 to February, 10, 2018. The error sequence patterns and the Mean Absolute Percentage Error (MAPE) suggest a relatively higher accuracy of the VFLVM in 2- and 3-dimensional study.

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