COVER LETTER 01/ 08 / 2021

We would like to submit our manuscript entitled

1. "Time-Delay Synchronization and anti-Synchronization of Variable-Order Fractional Discrete-Time of Chen-Rossler Chaotics Systems Using Variable-Order Fractional-Discrete Time PID Control"

2. For publication as an MDPI Mathematics Paper

Abstract

In this research article we solve the problem of synchronization and anti-synchronization of chaotic systems described by discrete and time-delayed variable fractional order differential equations. To guarantee the synchronization and anti-synchronization of these systems, we use the well-known PID control theory and the Lyapunov-Krasovskii stability theory for discrete systems of variable fractional order.
We illustrate the results obtained through simulation with examples, in which it can be seen that our results are satisfactory, thus achieving synchronization and anti-synchronization of chaotic systems of variable fractional order with discrete time delay.

3. Review Highlights

We confirm that this manuscript has not been published elsewhere and is not under consideration by another journal. All authors have approved the manuscript and agree with submission to MDPI Mathematics

4. REVIEWER 1

The organization and presentation of the article has been substantially improved, as well as the analytical results obtained, are justified and are summarized in a theorem, duly justified in the same article and the analytical results are illustrated by examples, based on the analytical results obtained and on the simulations that we carry out, our results on synchronization and anti-synchronization for discrete dynamical systems of variable fractional order with time delay are encouraging.

We have given answers to each of the questions from (1) to (6), the corrections have already been made, the article was organized as mentioned above, from what has just been written in

the lines above, in particular, in In question (5), relative to reference [8], we use a PID, similar to the one used in that reference, this control is widely used in control theory and extended to discrete fractional order control systems.

5. REVIEWER 2

The organization and presentation of the article has been substantially improved, as well as the analytical results obtained, are justified and are summarized in a theorem, duly justified in the same article and the analytical results are illustrated by examples, based on the analytical results obtained and on the simulations that we carry out, our results on synchronization and antisynchronization for discrete dynamical systems of variable fractional order with time delay are encouraging.

6. REVIEWER 3

The organization and presentation of the article has been substantially improved, as well as the analytical results obtained, are justified and are summarized in a theorem, duly justified in the same article and the analytical results are illustrated by examples, based on the analytical results obtained and on the simulations that we carry out, our results on synchronization and antisynchronization for discrete dynamical systems of variable fractional order with time delay are encouraging.

7. **The authors have no conflicts of interest to declare.**

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We look forward to hearing from you at your earliest convenience.

Yours sincerely,
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