

Review Form2

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|--------------------------|------------------------------------------------------------------------------|
| Book Name:               | Mathematics and Computer Science - Contemporary Developments                 |
| Manuscript Number:       | Ms_BPR_2140                                                                  |
| Title of the Manuscript: | Mathematical Analysis of Fractional Order HIV Infection of CD4+T Cells Model |
| Type of the Article      | Book chapter                                                                 |

PART 1: Review Comments

| Compulsory REVISION comments                                                                                                                                                                                                         | Reviewer's comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Author's Feedback(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here) |
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| Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimumof 3-4 sentences may be required for this part.                        | The manuscript "Mathematical Analysis of Fractional Order HIV Infection of CD4+T Cells Model" is crucial for the scientific community as it enhances our understanding of HIV using fractional calculus. This approach offers a more detailed and accurate model of HIV infection, considering the memory and hereditary characteristics of biological systems. It not only broadens the theoretical foundation of HIV modeling but also has practical benefits for improving treatment and predicting disease outcomes. I appreciate this manuscript for its innovative methods and its potential to drive further research in mathematical biology and epidemiology. |                                                                                                                                                             |
| Is the title of the article suitable? (If not please suggest an alternative title)                                                                                                                                                   | Suggest the title might be:<br><br>"Fractional Order Dynamics of HIV Infection in CD4+ T Cells: A Mathematical Study"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                             |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.                                                                          | Abstract is OK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                             |
| Are subsections and structure of the manuscript appropriate?                                                                                                                                                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                             |
| Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimumof 3-4 sentences may be required for this part. | The manuscript is scientifically robust and technically sound due to its use of advanced mathematical techniques like FDTM and the Lyapunov direct method for stability analysis. By modeling HIV infection dynamics with nonlinear differential equations, it provides a realistic representation of the infection process. Comparing the FDTM solution with other established methods (DTM and LADM) validates the model's accuracy. Additionally, the numerical and graphical analyses using Python ensure thorough examination and clear presentation of the results.                                                                                              |                                                                                                                                                             |
| Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.<br>:-                                                                                            | Should be add some recent references                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                             |

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| Minor REVISION comments                                                               |                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| Is the language/English quality of the article suitable for scholarly communications? | Yes language is suitable                                                                                                                                                                                                                                                                                                                                                                        |  |
| Optional/General comments                                                             | The manuscript provides a valuable contribution to HIV infection modeling through the use of advanced methods such as FDTM and Lyapunov stability analysis. By comparing with other established methods and presenting detailed numerical and graphical results, it demonstrates the model's robustness and offers important insights for researchers in mathematical biology and epidemiology. |  |

PART 2:

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|----------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              | Reviewer's comment                                                    | Author's comment(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here) |
| Are there ethical issues in this manuscript? | (If yes, Kindly please write down the ethical issues here in details) |                                                                                                                                                                              |

Reviewer Details:

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|----------------------------------|--------------------------------|
| Name:                            | Hemlata Saxena                 |
| Department, University & Country | Career Point University, India |