

Universidad Nacional de Colombia, Sede Manizales
Manizales, Colombia

October 4, 2026

Editor-in-Chief
International Journal of Applied and Computational Mathematics

Dear Editor,

I am pleased to submit the manuscript entitled “Singularity-Aware Cubic-Hermite Neural Collocation for Semilinear Time-Fractional Reaction–Diffusion Equations” for consideration as a Research Article in the *International Journal of Applied and Computational Mathematics*.

The manuscript develops a high-order treatment of the Caputo memory term for neural PDE solvers. Its main numerical ingredient is a cubic-Hermite product-integration formula whose weakly singular weights are precomputed and reused during optimization. The neural trial function satisfies the initial and homogeneous Dirichlet conditions exactly, avoiding penalty-weight tuning. A consistency estimate, direct comparison with the L1 formula, a reproducible semilinear fractional reaction–diffusion benchmark, and a joint fractional-order/diffusivity identification experiment are included.

The work is positioned at the intersection of applied numerical analysis, fractional differential equations, and scientific machine learning. All reported numerical values and figures are generated by the Python source supplied with the submission, which facilitates reproducibility and editorial assessment.

I confirm that this manuscript is original, has not been published previously, and is not under consideration elsewhere. I am the sole author and approve its submission.

Thank you for considering the manuscript.

Sincerely,

Alvaro H. Salas
Department of Mathematics and
Statistics
Universidad Nacional de Colombia,
Sede Manizales
FIZMAKO Research Group
ahsalass@unal.edu.co