

and the corresponding \mathcal{L}_∞ -norm of the error. In addition, we have also considered the effect of the parameter α on the numerical solution.

The numerical results show that the proposed scheme is stable and converges with the expected order. The numerical solution is in accordance with the theoretical results. The numerical results also show that the numerical solution is not sensitive to the parameter α .

In this paper, we have considered a fractional differential equation with a nonlocal boundary condition. The fractional derivative is defined in the Caputo sense. The numerical solution is obtained by using the finite difference method. The numerical results show that the numerical solution is in accordance with the theoretical results. The numerical results also show that the numerical solution is not sensitive to the parameter α .

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