

Review of: "New adaptative numerical algorithm for solving partial integro-differential equations"

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Potential competing interests: No potential competing interests to declare.

Review of the manuscript:

"New adaptive numerical algorithm for solving partial integro differential equations"

For "Qeios"

In this paper, the author introduces an accurate numerical approach based on orthonormal Bernoulli polynomials for solving parabolic partial integro-differential equations (PIDEs). By this approach, the problem is transformed into a nonlinear algebraic system. Also, the author has a discussion about convergence for the proposed scheme, and finally, some numerical examples are presented to test the validity of the established difference scheme.

I think that the results obtained in this paper are sound and interesting. This paper can be considered for publication after the authors address the following comments and suggestions:

1. There are some grammatical errors. Please check the whole of the paper, carefully.
2. Please check the in Eq. (6). In the rest of the paper, you have used the symbol .
3. In Eq. (10) $u(x)$ and x should be replace to $u(x,t)$ and t respectively.
4. Please replace with in Eq. (20).
5. The coefficients and are missing in the above relation (24).
6. Please check the Lemma 2. I ask the author to cite or proof for this lemma.
7. Please cite the Theorem 2 and check the proof.
8. At the end of proof 2, Lemma 31 should be replaced with Lemma 2 and I ask the author that check this proof carefully.
What does happen for integration??
9. In the whole of the paper caption of figures should be set in the below figures.
10. The author says that the obtained error for example 6 presented in Table 5. But the caption of this table is for example 5. Please check it.
11. The style of references is different. Please check them.
12. Please cite doi: [10.11948/20230039](https://doi.org/10.11948/20230039) in introduce Bernoulli polynomials.

