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.

Report on the manuscript

New adaptative numerical algorithm for solving partial integro-differential equations

In this paper, the author presents an accurate numerical approach based on orthonormal Bernoulli polynomials for solving parabolic partial integro- differential equations (PIDEs). This type of equations arises in physics and engineering. Some operational matrix are given for these polynomials and are also used to obtain the numerical solution. By this approach, the problem is transformed into a nonlinear algebraic system. Convergence analysis is given and some experiment tests are studied to examine the good accuracy of the numerical algorithm, the proposed technique is compared with some other well known methods. The topic this paper is interesting, and the results obtained are correct. Therefore, the publication of this paper is recommended after the following **major revision**.

1. The abstract has not been written adequately and should be modified significantly. Indeed, the abstract should reflect the overall contain of the paper. Hence, the authors should rewrite the Abstract, not to detail it, but to focus on the outlines and the tasks in the paper without going into details.

2. In abstract, replace the word "acurrate" by ""accurate".

3. The novelty and contribution of the paper should be better highlighted in the introduction.

4. The introduction section is very short and the authors should extended it and update the references section based on this extension and added very relevant papers.

5. In the abstract the author says "Convergence analysis is given and some experiment tests are studied to examine the good accuracy of the numerical algorithm, the proposed technique is compared with some other well known methods". **However, I don't say any thing concerning this task in the whole paper. So again the author should updated the abstract or explained the Convergence in the paper.**

6. Author need to mention briefly with application of present work in real world, what is new in this problem and why is it considered?

7. Revise the whole manuscript for punctuation issues, such as Eq. (13),...

8. The significance of the obtained results should be highlighted.

9. In section 5, the author should plotted again the error in a proper size of the normal figure.

10. In the whole numerical examples, the author mentioned the analytical solutions. So the author should refer to reference or the source for this solutions or something else.

11. The authors should add more information about future direction in the conclusion section. In short, the results of the paper are satisfactory. After correction along the above lines, the paper can be accepted for publication.