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

Stepan A. Tersian[1]

1 University of Ruse Angel Kanchev

Potential competing interests: No potential competing interests to declare.

REFEREE'S REPORT

on the paper R4546K.pdf

New adaptative numerical algorithm for solving partial

integro-differential equations

by Rebiha Zeghdanea

The paper deals with. a numerical appraoch based on orthonormal Bernoulli polynomials for solving parabolic partial integro-differential equations (1). Convergence analysis, numerical tests and figures are given.

Detailed Introduction is given.

Othonormal Bernoulli polynomials and approximation are presented in Section 2. The main result are Theorem 2 and Theorem 3, presented and proved in Section 3. In last section six examples are given. How are they connected with the main results ?

I can recommend the paper for publication in the journal Qeios after a major revision. My recommendations are as follows:

1. In the Abstract cancel second sentence.

2. Section 2 is short and can be included in Section 3. The revised Section 2 can be "Othonormal Bernoulli polynomials and Pseudo-spectral method for Solving PIDE"

3. It should be proved Lemma 2 in Section 4 (3). On pages 8 and 9 Proof 1 and Proof 2 can be only Proof or Proof of Theorem 2/3.

4.On page 9 should say By Equation (1), Lemma 1, Theorem 2. Where is used Lemma 2 ?