

Review of: "New Computational Methods Using Seventh Derivative Type for the Solution of First Order Initial Value Problems"

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Potential competing interests: No potential competing interests to declare.

First of all, many thanks to the authors who prepared this article.

General comments:

I cannot see the theoretical advantages and effectiveness of your defense approach/method. However, examples and applications are good, well studied, and accurate. Please simply explain why you use the 7th derivative and why not the 6th or 5th derivatives...?? The proposed algorithm is very simple, and it is not new in the literature (it is exactly Newton-Raphson's method). Furthermore, there are different techniques that can be used instead of Gauss elimination. It is better to expand your method into block-matrix form (see the article "Approximate Schur-Block ILU Preconditioners for the Regularized Solution of Discrete Ill-Posed Problems").

I think, in general, the theoretical part to support the study is missing.

Some minor changes:

- Vector Q on page 4, I think the last value is .
- Theorems of SECTION 3: If possible, please adapt them to your method and accordingly give proofs.
- Erase subsections 3.2, 3.3, 3.4, and 3.5, and please write them as remarks.
- 3 examples are enough to show effectiveness.

I recommend that this article, "New Computational Methods Using Seventh Derivative Type for the Solution of First Order Initial Value Problems," is not suitable for publication in this state. I would like to re-evaluate it after the necessary changes are made.