Review of: "A Novel Computational Approach for Solving Fully Implicit Singular Systems of Ordinary Differential Equations"

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Potential competing interests: No potential competing interests to declare.

Pros:

1.The paper introduces a novel computational approach to tackle fully implicit singular nonlinear systems, addressing a challenging problem in the field of differential equations.

2. The paper clearly defines the problem it aims to solve, focusing on fully implicit and singular systems, which can be useful for researchers facing similar issues.

3. The proposed method is claimed to be implementable using popular mathematical software like Maple, Mathematica, and Matlab, making it accessible and practical for a wide range of users.

4. The method is emphasized as eliminating the need to transform the implicit system into an explicit differential system, which can be a time-saving and convenient feature.

5. The paper suggests that the method can be applied to other fully implicit differential systems, indicating its potential for broader applicability.

Cons:

1. The paper lacks a comprehensive and detailed explanation of the proposed method, including the mathematical principles and techniques involved. This could hinder the reader's understanding and evaluation of the approach.

2. While the paper claims that fully implicit singular systems cannot be solved by conventional methods like Maple or Runge-Kutta, it doesn't provide evidence or comparative analysis to support this assertion. Such claims should be backed by numerical experiments and benchmarking against existing methods.

3. Although the paper mentions providing four numerical examples, it lacks a thorough validation process. The absence of extensive numerical experiments and comparisons with existing methods limits the assessment of the method's effectiveness.

4. While stating that the method can be implemented using popular software, the paper does not provide specific code, algorithms, or implementation details, making it challenging for others to reproduce the results.

5. The paper places significant emphasis on providing exact solutions in a convergent power series form. While this is valuable, it may not always be necessary or practical, and other methods may focus on approximations or numerical solutions that are more efficient in certain applications.

In summary, the paper presents an intriguing approach to a challenging problem, but it would benefit from more comprehensive explanations, rigorous validation, and practical implementation details to support its claims.