Review of: "Propagation of electromagnetic waves through complex space for astronomical redshift investigation"

G Naveen Babu

Potential competing interests: No potential competing interests to declare.

The article "Propagation of Electromagnetic Waves Through Complex Space for Astronomical Redshift Investigation" by Peter Y.P. Chen explores the intricate nature of space and its impact on electromagnetic wave transmission theories. Below is a review of the provided abstract and introduction:

Strengths:

Clear Objectives: The abstract effectively outlines the main objectives of the research, which include investigating two specific cases - regions of pulse energy changes and gravitational deflection. The emphasis on the inhomogeneous and anisotropic nature of space is clear.

Relevance to Current Debates: The article positions its findings as potentially relevant to the current debate on Hubble tension, adding a layer of contemporary significance to the research.

Building on Previous Work: The introduction successfully connects the current study to the author's previous work, creating a sense of continuity and expertise in the field. This provides context for readers familiar with the author's earlier contributions.

Incorporation of Additional Features: The article is commendable for incorporating two additional features into the model: pulse energy changes due to atmospheric conditions and gravitational deflection. This shows a comprehensive approach to understanding the complexities of space.

Areas for Improvement:

Clarity in Methodology: While the abstract provides a general overview of the investigation, a more detailed explanation of the numerical methods used for solving the nonlinear Schrödinger equation and the specific examples provided could enhance the clarity for readers interested in the technical aspects of the research.

Context on Hubble Tension: While the abstract mentions the relevance of the findings to the Hubble tension debate, a brief explanation or reference to the nature of this debate would help readers who may not be familiar with the term.

Engaging Language: The abstract and introduction, while informative, could benefit from a more engaging and accessible language to attract a broader readership, including those outside the immediate field of study.

Conclusion Anticipation: The abstract could provide a bit more anticipation of the conclusion or implications of the

findings, giving readers a clearer sense of what to expect in the rest of the article.

In summary, the article shows promise in addressing complex phenomena related to electromagnetic wave propagation in space. It would benefit from a more detailed presentation of the methodology and a touch of engagement to make the research accessible to a wider audience.

While the provided article exhibits several strengths, it also has some potential areas for improvement. Here are some negative comments:

Limited Explanation of Numerical Methods: The abstract lacks a detailed explanation of the numerical methods used for solving the nonlinear Schrödinger equation. This omission may leave readers, particularly those without a strong background in the field, struggling to understand the technical aspects of the research.

Vague Connection to Hubble Tension Debate: The abstract mentions the relevance of the findings to the current debate on Hubble tension but fails to provide a clear connection or explanation of what Hubble tension entails. This lack of context may hinder broader comprehension and engagement.

Lack of Anticipation in Conclusion: The abstract could benefit from providing a bit more anticipation regarding the potential implications or conclusions of the study. This would help readers to better understand the significance of the findings and what the research contributes to the broader scientific community.

Complex Language: The use of technical language in both the abstract and introduction might be a barrier for readers outside the specific field of study. Simplifying the language without compromising accuracy could make the research more accessible to a broader audience.

Insufficient Engagement: The language in the abstract and introduction is informative but lacks a certain level of engagement. Adding more engaging elements could make the research more appealing to a wider readership.