

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

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Potential competing interests: No potential competing interests to declare.

The article deals with propagation of electromagnetic waves through complex space which follows previous works of the author. The author has considered two different cases: (i) regions of pulse energy changes and (ii) gravitational deflection. The author has presented numerical findings and discussed the significance of these effects on the overall redshift observed in starlight.

In my opinion, the paper needs some revisions and I hope the following comments/queries can be helpful:

1. The Introduction part/literature survey should be improved.
2. In the abstract, author mentioned the relevance of his work to the current debate on Hubble tension but failed to provide a brief explanation regarding this.
3. Explanation of numerical methods employed in the investigation are very limited. Solution procedure should be elaborated.
4. Author has used approximate solution (Ref. no. 4) which has been derived for the cases of small deflections. The author should discuss the accuracy/ limitations and validity of this approximation.
5. The boundary condition given in equation 7 should be further elaborated.

Minor corrections:

There are several erroneous punctuations and grammatical/typing mistakes:

- a. Section 4.3 (Propagation with gravitational deflection): 2nd line: ...propagation distance, x, is taken...
- b. Example 4: Last sentence: ...be pointed out that...
- c. Section 5 (Discussion section) 4th paragraph, 1st sentence: ...pulse amplitude...
- d. Section 5 (Discussion section): 5th paragraph, 2nd sentence: ...change in the gradient...
- e. Section 5 (Discussion section): 8th paragraph, last sentence: ...is evidence the net deflection...

Entire manuscript should be thoroughly checked.