Review of: "Simultaneity in Minkowski Spacetime, as Parallax"

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Potential competing interests: No potential competing interests to declare.

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This article proposes to use a method based on Minkowski spacetime parallax and Lorentz transformation to measure galactic distances. Knowing the distance histories, the redshift-distance relation may be determined. The intention is that, using this method, the current debate on Hubble tension could be resolved.

The weaknesses of this article are:

i. The proposed method is already one of some half a dozen methods used by researchers for redshift. Their findings have contributed and not solved Hubble tension.
ii. There is limited review of current works. There are already extensive reviews on

This topic:

Valentino E. D., et al. In the realm of the Hubble tension—a review of solutions, Class. Quantum Grav. 38 (2021) 153001

https://doi.org/10.1088/1361-6382/ac086d

Diaz A. V. and Turner M. S. (2022) Review of Progress in Astronomy and Astrophysics Toward the Decadal Vision: Letter Report (2005), The National Academies of Sciences, Engineering, and Medicine, NW | Washington, DC 20001

https://nap.nationalacademies.org/read/11230/chapter/1#8

i. Both the above reviews have included the method described in the present article. The conclusion of both reviews is that new physics are needed to resolve this issue.
ii. Only Special Relativity is used.

The recommendations for this article are:

i. To add additional references for what have already been done in this topic, Hubble tension.
ii. To narrow the claim of this work to discussion on a how such a method could contribute, and not solve, to Hubble tension debate. Additionally, the other two claims about the Cosmic Microwave Background (CMB) and the Cosmic Event Horizon should be omitted.
iii. To work out how the method could be extended to cover General Relativity by using the concept of ‘effective’ distance,

etc.

iv. To add more examples (this article uses only one example).

v. To give the values found for H_0 . If needed, how to fine tune the model so that H_0 found is agreeing with observed data.

vi. To admit, as with other reviewers, that by associating a star with an assumed velocity-distance relation will not resolved the issue of Hubble tension. Some new idea is needed.

Some recommended corrections are:

i. 'Figure 3 (left side) describes how detected average pulse periods Tdet

increase over time' – If the pulse is redshifted. The period should be increased over time and NOT decreased as shown.

i. Ref. [4] was given as the source of Figure 3. But it cannot be found in this reference.

ii. What is the term '1*(flash)'* in Eqs. 3 and 16?

iii. In Section 5, Hubble parameter H was introduced. Based on Eq. 10, H has the dimension the same as velocity, that is LT^{-1}. But the dimension of Hubble constant is T^{1}. The absence of a conversion factor should be mentioned. This factor could be used to account for Spin-down luminosity Ω, or to match with observed data.

iv. dt^2 in Eq. 10 should be dt.

v. Hubble constant used in Fig 7 should be Hubble parameter.