

Review of: "Speed of Gravity: A Simple Experiment to Test the General Relativity Theory Sankar Hajra"

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Potential competing interests: No potential competing interests to declare.

The article, somewhat reticently, wants to question the confirmation of one of the most recently confirmed predictions of General Relativity, which in its own way is meritorious since science needs a constant process of revision.

However, in wanting to disprove that Gravitational Waves (GW) were indeed detected, the article does not elaborate and does not provide adequate quantitative details on the causes that allegedly led researchers in the LIGO and VIRGO collaborations to misinterpret signals detected by interferometers for traces of gravitational wave passage. Such a strong claim would require at least as detailed a counter-analysis as that which has been provided by the teams cited above, while only vaguely mentioning has been provided for this alternative explanation, moreover without actual evidence of seismic activity that would have been induced by fluctuations in solar activity, relying on a correlation that currently finds some support only for earthquakes of medium-high magnitude (but for which no explanatory model yet exists, here I link a reference: <https://www.nature.com/articles/s41598-020-67860-3>).

It's also a bit perplexing the comment about the potential variability of the speed of light in the two arms of the Michelson interferometer, from which an inadequate (or heretical) understanding of the nature of GWs, derived from Einstein field equations in the weak field approximation, seems to emerge. In any case, measurements of the speed of gravity have already been realized and are fairly compatible with the expected value, which is c (<https://journals.aps.org/prd/abstract/10.1103/PhysRevD.102.024028>).

As a result of the above, I do not feel comfortable recommending the publication of this article in its current state.