

Review of: "Inadequacies of Sommerfeld's Front Velocity Definition"

Raman Yuvaraj¹

¹ Sona College of Technology

Potential competing interests: No potential competing interests to declare.

The author provided evidence that the propagation velocities of signal fronts for input signals of nonzero temporal duration can result from the phase velocities in the low-frequency range. This evidence is insufficient when the time is very low and the front velocity is very high, especially $u=3c$. The author is suggested to revise the discussion part, include more specific findings in the abstract, and add more recent references. It is also suggested to provide some validation for different signal fronts.

Suggestions:

1. Include nomenclature with units.
2. Make it clearer about the formation of waves in Fig. 1 with respect to the distance and their significances.
3. Discuss the energy component $E\{s_u(t)\}$ quantitatively with more specific inputs.
4. Convert the energy equation into a generic non-dimensional form that makes the results clearer for very low step sizes.
Refer. <https://doi.org/10.1007/s10973-020-09346-y>
5. Add more relevant literature, including recently published work. <https://doi.org/10.1016/j.rinp.2024.107742>,
6. Include clear validation for the statement "Sommerfeld failed to realize that a real transmission line could also be a network".
7. Include the conclusion part with specific findings.