Review of: "Can the electromagnetic fields form tensors if D = ϵE and H = B/μ?"

Yangjié Liu[1]

1 Hubei University

Potential competing interests: No potential competing interests to declare.

Franklin's paper works on the issue to question whether the second order tensor G stands, which are made up of six Cartesian components of displacement vector and magnetic vector. Under the linearly polarizable postulate, he works out and claims that the combination of potentials phi and vec A does not form a four-vector.

I read through the whole paper and have the following comments which I hope can be useful to improve the paper.

1. Somewhere in the manuscript letters are spaced within a word, which should be corrected. This is a minor issue of course.
2. The conclusion is drawn from Eq. (23-24) to negate the four vector as Author does. I would suggest to clarify more on how F_mu_nu are relativistic tensors stand in the first place, then it would be fair to negate G not so. It would be helpful to make the statement stronger even though it may simply be a textbook answer Author already knew and assumed readers to have also.
3. Furthermore, phi and A follow different wave equations, at least different in form. And we know that they are assumed to follow Eq. (6), the Lorenz gauge. Is there any possbility that under other gauge Eq. (23-24) can be reshaped into the same form instead to form a four-vector under Author's definition? That would be a challenge I propose to Author for the purpose to learn from Author .
4. Additionally, I believe that rho and j in Eqs. (15-18) are free charges and free current. It may well be worth pointing out in the manuscript.

These are my comments as a reviewer who wants to learn from Author.