Electromagnetic Energy Controversies

Lurking behind the Longitudinal wave controversy as an independent issue is how electromagnetism is now conceived: ie, although the dielectric field can be represented as an exact analog of the magnetic field, it is not:
“the terminology of electrostatics of many textbooks still speaks of electric charge on the conductor, and the energy stored by them, without considering that the dielectric energy is not on the surface of the conductor, but in the space outside the conductor, just as the magnetic energy” - Steinmetz

http://physics.fullerton.edu/~jimw/general/inertia/index.htm
Woodward shows that certainly conventional physics recognizes the existence of electric field currents through space.

It distinguishes static electric field strength from current electric field strength:

“ You may remember from an undergraduate course in electricity and magnetism that the electric field of an electric charge can be represented by something called a "scalar potential" -- a "function" that assigns a single number to each point in space so that when the "gradient" of the function (the spatial rate of change of the function) is computed you get back the electric field strength (a vector quantity with magnitude and direction). Formally this looks like:

$$\boldsymbol{E} = -\nabla\phi$$

Electric field strength = - del(gradient) operator operating on electric potential phi

This relationship, however, is only true for "static" electric fields: fields produced by electric charges that are all at rest and stay that way. When electric charges are in motion -- that is, when electric currents are present -- the electric field has to be modified to include a term that takes account of the motion of the charges. The electric field becomes:

$$\boldsymbol{E} = -\nabla\phi - (1/c)(\partial\boldsymbol{A}/dt)$$
“

Hef/experimental_generation_of_non_hertzian_waves (hardware)
Ie, the waves cancel out so there is nominally no frequency.
But still there are multiple harmonics
Such waves can be generated.