

Re: Physics Lessons for Seto, Retic, Sefton, Thomson, etc.

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Emwizsoon wrote:

- > *As I am browsing this group learning what is field,*
- > *why is there a magnetic field, etc. I can't help but*
- > *notice how so many people are accusing some*
- > *of being so stupid and illiterate. These people*
- > *specifically... Seto.. Retic, Sefton, Thomson are*
- > *targetted. Some of them have been here for many*
- > *years. How come they still can't learn physics?*
- > *Where did they make the error in the understanding.*
- > *Can someone explain how come they can't grasp*
- > *the basic physics concept? Or maybe they see*
- > *something we haven't? These people are mostly*
- > *ether enthusiasts. Why do they think ether is better*
- > *explanation than the permittivity, permeability*
- > *of empty space. Hope someone can explain clearly*
- > *what made them think the way they do. Maybe we*
- > *can trace where they erred and give these guys*
- > *some lessons in physics. I'll also ask the*
- > *convensional physics camp something I can't*
- > *quite understand. Where do the permittivity*
- > *($\epsilon_0: 8.854 \cdot 10^{-12}$ f/m and permeability*
- > *($\mu_0: 4 \cdot \pi \cdot 10^{-7}$ h/m of space come from? Does it*
- > *mean somehow the universe produced this constant*
- > *maybe accidentally enabling the propagation*
- > *of electromagnetic wave?*
- >
- > *Emwizsoon*

Permability/permittivity (the two are interconvertible) results from the fact that Force/energy/momentum are expressed in terms of mass, while electromagnetic interactions are scripted in terms of charge. Obviously a conversion factor with proper dimensional attributes is required in order to derive Newtonian attributes from relationships between charges. The numerical values of such conversion constants are quite arbitrary, i.e. they depend upon the values of units of charge

and mass adopted.

However, one particular numerical value perpetually appears, regardless of units chosen, and that value is c , the speed of light. Given that this value arises as a conversion factor between permittivity and permeability, which respectively pertain to the electrostatic and magnetic forces between charges, then would seem to follow that c expresses a relationship between these two forces. And indeed it does; c is the relative speed at which the charges will experience a magnetic force that is equal to the electrostatic force acting between them. This was known long ago.

Maxwell introduced yet another interpretation of this constant, i.e. that it was the speed of propagation of these forces (speed of light). There is no mathematical proof of this, because stress and strain, terms to which he compared permittivity and permeability, are quite different effects from one another, while as noted above, the latter two are actually one in the same constant, and are not effects of any sort, but are simply conversion factors. IOW, c is quite independent of these terms, and enters the force equations as a matter of experimental necessity. It was serendipity acting in Maxwell's favor that allowed him to make an accidentally correct statement about light speed.

As for properties of space...there are none; space is just extension, and extension is just distance, while distance is nothing more than a number expressing an as yet unfathomable relationship between two particles. Space isn't a thing with properties, it cannot be, it is itself a property, of things. Not only is there no ether, there is no space with which to contain one.

Richard Perry