

Re: Since k varies but not G suggests an Eather

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- *From:* "Randy Poe" <poespam-trap@xxxxxxxxxx>
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guskz@xxxxxxxxxxx wrote:

Sue... wrote:

guskz@xxxxxxxxxxx wrote:

snip

So you're saying instead of applying the total charges in space to the equation and using "k for space", they are varying "k" instead so as to include the charges in the medium (as opposed to the charges outside the medium)?

Whether charges exist ~outside the medium~ or not does not concern us. If they are absent, their charge is zero. If they are present, they exist in $e^+ e^-$ pairs so their value is zero.

Relativity is the word:

In a way nothing is zero nor potential and all is kinetic (always in motion, never stops).

Paired charges are neutral and not, but without question the field shrinks to it's smallest hypothetical value and the force will not be neutral but at it's maximum

and if you apply energy to separate the charges then the field is bigger volume wise but it's force decreases.

($F_{\text{neutral}} = kQq/r^2$ where r is the constant distance e and p remain

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when neutral and $E_{\text{potential}} = (F - F_{\text{neutral}}) * r^1$

Since nothing is neutral

Why do you say nothing is neutral? If you have equal amounts of positive and negative charge, the net charge is zero.

and only the field shrinks as Randy said the residual force of dipole charges is $1/r^3$

Yes, if:

(a) your + and - charges are separated so that you have a net polarization. Just because you have + and - charges doesn't mean they have to separate.

(b) r is large compared to the separation between the charges.

same as a magnetic force.....

If you have two dipole charges, does the residual remain at $1/r^3$ or is it more or is it less?

It depends on how they are arranged and where you are situated. You can have two dipoles which will give a field that looks like one stronger dipole. You can have two dipoles cancelling each other out so what is left is the quadrupole moment ($1/r^4$ force). You could be located near to the dipoles in which case you have to use the exact expression, $\sum(kQq/r^2)$, not the approximation $1/r^3$.

- Randy

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