Re: Capacitor and Force

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- *From*: The Phantom <phantom@xxxxxxx>
- *Date*: Sat, 13 Oct 2007 16:18:38 −0700

On Sat, 13 Oct 2007 17:15:03 −0500, "Jon Slaughter"
<Jon_Slaughter@xxxxxxxxxxx> wrote:

<SNIP>

> Jon, please consider this simple example; perhaps then you will see why Phantom's explanation is right on. Consider two point charges, let's say equal magnitude and opposite polarity, separated by a distance x. They are attracted with force F. If I have another identical pair, they will also be attracted by F. So if the two pairs are at a distance from each other much greater than x, the total force will be 2*f. But if I bring them together, so the like charges are at the same points, the force will be 2^2 or 4 times as much. OK? It really DOES matter how in space the charges are distributed.

I never said it didn't matter.

Cut and pasted right out of your post of 10/12/07 5:18 AM with an obvious single letter typo fixed:

"If you have charges then you have forces. Some think that the distribution matters but it doesn't."

volume integerals are not exact.

They are exact if the object being analyzed is a mathematical construct. If the object is real, like the earth, then we can't do a volume integral because we don't have a mathematical description of the density at every point in the interior.

Its a matter of how accurate one wants and
I was just trying to estimate the result. The problem is that I was calcuating the force between all charge "pairs" which is Q^2 but this is wrong because its more like Q^2/A. So my estimation was flawed and not the fact that I can't assume they are concentrated at a point. Its just that when I do that I should have realized what I was doing which was essentially making the interacting force the same for all charged particle pairs(this is not true for plates... ju