

Re: Since k varies but not G suggests an Eather

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Source: <http://sci.tech-archive.net/Archive/sci.physics.relativity/2006-06/msg01197.html>

- *From:* "guskz@xxxxxxxxxxxx" <guskz@xxxxxxxxxxxx>
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-

Sue... wrote:

guskz@xxxxxxxxxxxx wrote:

Sue... wrote:

Igor wrote:

Randy Poe wrote:

guskz@xxxxxxxxxxxx
wrote:

$$F = kQq/r^2$$

$$F =$$

$$GMm/r^2$$

k varies

No, the electrostatic
CONSTANT does not vary.
That's why they
call it a constant.

but never G:

1. k
VARIES
depending
on the
density(or
structure) of
the other
charges in
the medium
(since

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medium's
are made of
electrons
and
protons)
excluding
Q&q.

No, it doesn't.

But k will certainly have different values in
different media, since it
depends on the total permittivity of the
medium.

Sorry... all media manufacturers get thier electrons from the
same supplier.

<http://hyperphysics.phy-astr.gsu.edu/Hbase/electric/elefor.html>

Sue...

That's a poor explanation Sue, that link simply explains that "k" is
constant in space THEREFORE FOR THE ELECTRIC FORCE
EXCERTEED BETWEEN TWO
CHARGES IN ***AIR*** OR ***WATER*** IS *****NOT THE
SAME*****
AS THE ELECTRIC FORCE EXCERTEED BETWEEN TWO CHARGES
IN SPACE: $F =$
 KQq/R^2 (K VARIES WITH THE MEDIUM.....

....MEANING K VARIES WITH THE PRESENCE OF OTHER CHARGES
IN THE SAME
REGION WHERE AS "G" DOES NOT VARY WITH THE PRESENCE OF
OTHER
OBJECTS(MASSES) IN THE SAME REGION OF M&m ($F= GMm/R^2$).

You just answered your own question so I contend the URL is
effective. ;-)

k is sumed over all space because it is radiative.
G is sumed over all the matter because it is induced.

coils induce magnetism or current, G is neither

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You have to apply forces to move a mass from moon to earth.

not if there's no moon and only earth & mass

You do not have to apply force to move a charge from one plate to another plate of a charged capacitor.

WELL DONE!

That's because the attractive charge force along the wire is stronger than the attractive charge force between the dielectric plate.....

Therefore "k" indeed varies with the medium (dielectric medium versus copper medium) and the main difference between mediums is the electron density (& proton) that surrounds Q&q!

Where as "G" remains constant regardless of the other planets(objects) or mass densities that surround M&m!

$F = k_{\text{medium}} (Qq/r^2)$ $F = G_{\text{invariant}} (Mm/r^2)$

So... You see some important difference in the behavior of fundamental and composite particles ?

Sue...