

Re: Charge is not a property of particles.

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- *From:* "Igor" <thoovler@xxxxxxxxxx>
 - *Date:* 16 Jul 2006 10:22:50 -0700
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malibu wrote:

Igor wrote:

Rock Brentwood wrote:

Igor wrote:

All particles have charge.

This isn't true even for fundamental particles. What about neutrinos? Where's their charge?

In the left-helicity state, the neutrino has hypercharge $g'/2$, baryon number $-1/2$, isospin $g/2$ and "chromaticity" coordinates $(0,0)$ for the SU(3) color force (i.e. the weights represented by the λ_3 and λ_8 generators of the standard representation of SU(3))... where $g' = e/\cos(T)$ and $g = e/\sin(T)$, where T is the weak mixing angle.

The neutrino is not known to exist in the right-helicity state (though it is widely surmised, now, to do so). Its charge vector would be, respectively, $(0, -1/2, 0, 0, 0)$.

Baryon number is not known to be other than a global symmetry and, therefore, not known to be associated with any force. Absent it, the right-neutrino would be completely neutral and, therefore (almost)

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completely invisible and undetectable. Only interaction with the Higgs and gravity would reveal it. The mode of interaction between neutrinos and the Higgs is an open issue (as is the existence of the Higgs).

Yes, I'm aware of all of that. I was simply asking about electric charge, which I'm sure the OP was talking about also. And I gather that he is probably not too familiar with the rest of the standard model.

The standard model will only be a model when someone can build it to scale and show where and how all the various bits move and fit together.

Already done. Most of this work was done between the '40s and the '70s. By the end of the '70s most of it was already in place.

At present it is not a model.
It is a laughingstock.