Re: Neutrino generation from electrons?

Source: http://sci.tech−archive.net/Archive/sci.physics.research/2005−04/msg00082.html

- *From*: chornedsnorkack@xxxxxxxxxxxx
- *Date*: Sat, 2 Apr 2005 08:42:04 +0000 (UTC)

igor@xxxxxxxxxxxxxxxxxxxx wrote:
> In article <1111801801.616291.229710@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
> Sci~Girl <palmtree117@xxxxxxxx> wrote:
> [ebunn@xxxxxxxxxxxxxxxxxxxxx wrote:]
> >>
> >>One such reaction, for instance, is an electron and positron colliding
> >>to form a neutrino and an antineutrino.
> >
> >An electron colliding with a positron is annhialation, by definition,
> >
> >"A process in which a particle meets its corresponding antiparticle and
> >both disappear. The energy appears in some other form, perhaps as a
> >different particle and its antiparticle
>
> ..including a neutrino or antineutrino, or muon and antimuon, or up−quark
> and anti−up−quark, etc...
>
> >(and their energy), perhaps as
> >many mesons, perhaps as a single neutral boson.

A single particle is not very likely, exactly because of energy and
momentum conservation.

> >The produced particles
> >may be any combination allowed by conservation of energy and
momentum
> >and of all the charge types."
> >
> >Gamma rays are caused by electron−positron annhialation, I believe.
So,
> >would that mean gamma rays are neutrinos?
>
> No, it just means that gamma rays aren't the *only* possible outcome
from
> e+e− annihilation. If the e+ and e− don't have much kinetic energy,
so
> their total energy isn't enough to produce the mass of any other
> particle/antiparticle pair, then all you can get are photons (which
are

> massless).

Not true. You can still get other massless things. Like gravitons,
which are also massless, or neutrinos and antineutrinos which are so
light that there is always energy for them.

But gravitons and neutrinos are harder to produce than photons.

> But if there's enough energy available, you can produce any
> particle/antiparticle pair. That's why e+e− colliding−beam accelerators
> are so useful for discovering and studying new kinds of particles.

.

- Prev by Date: ***Re: use of real numbers in mathematics and physics***
- Next by Date: ***Re: Renormalization***
- Previous by thread: ***Re: use of real numbers in mathematics and physics***
- Next by thread: ***can someone explain the candela a little?***
- Index(es):
  - ***Date***
  - ***Thread***