

Re: life time of an atom

Source: <http://sci.tech-archive.net/Archive/sci.physics.relativity/2007-07/msg03294.html>

- *From:* PD <TheDraperFamily@xxxxxxxx>
 - *Date:* Mon, 30 Jul 2007 21:45:29 -0000
-

On Jul 30, 1:52 pm, deeje <7g56f4...@xxxxxxxx> wrote:

On Jul 30, 8:01 pm, PD <TheDraperFam...@xxxxxxxx> wrote:

On Jul 20, 5:52 pm, virgil <u7it...@xxxxxxxxxxxx> wrote:

On Jul 21, 12:42 am, PD <TheDraperFam...@xxxxxxxx>
wrote:

On Jul 19, 2:56 pm, sleepy
<valnad...@xxxxxxxxxxxx> wrote:

On Jul 17, 8:00 am, PD
<TheDraperFam...@xxxxxxxx>
wrote:

On Jul 16,
6:30 pm,
virgil
<u7it...@xxxxxxxxxxxx>
wrote:

On
Jul

Re: life time of an atom

16,
7:15
am,
PD
<TheDraperFam...@xxxxxxxx>
wrote:

On
Jul
15,
1:49
am,
walter
<u7it...@xxxxxxxxxxxxxx>
wrote:

atoms
can
lose
and
gain
electrons,
but
overall
what
is
tha
lifetime
of
an
atom?

i
cant
see
tha
reason
why
a
muon
having
a
lifetime
while
an

Re: life time of an atom

atom
or
a
nucleus,
protons,
neutrons
etc
to
not
have

The
answer
here
is
actually
very
simple.
Muons
decay
because
they
can,
without
violating
any
laws
of
physics.
Namely,
there
is
a
decay
state
of
final
energy
that
is
lower
than
that
of
the
muon
or
an
entropy

Re: life time of an atom

that
is
higher,
and
there
is
an
interaction
for
which
the
muon
has
charge
that
can
produce
that
final
state.

why
a
proton
or
a
neutron
dont
decay

A neutron
on its own
DOES
decay.

so neutral neutron decay
from no charge to zero
charge

No, it decays from zero charge to zero
charge.

Re: life time of an atom

A proton on
its own
doesn't
decay
because it
doesn't have
anything
lighter it
can decay
into that
isn't
missing
some
characteristic
that
apparently
is always
conserved
(like
baryon
number).
A neutron
in a nucleus
doesn't
decay
because —
and
this is
where
things get
interesting
— there is
no lighter
nucleus
that would
result.

[pauses
while
waiting for
the
anticipated
good
question]

then what is the reason for a
neutron doing nothing in a

Re: life time of an atom

nucleus

is a neutron a glue holding
the nucleus together in order
to
not dissipate?

Well, that wasn't the good question I was
anticipating.

would you mind asking yourself that good question please

For
a
hydrogen
atom,
on
the
other
hand,
there
is
no
interaction
between
the
proton
and
the
electron
that
would
yield
a
lower
energy
state,
which
respects
known
conservation
laws,
and

Re: life time of an atom

by
which
both
the
electron
and
the
proton
participate.

it
is
impossible
for
a
hydrogen
to
be
that
old

Doesn't
appear to be
impossible
at all. The
hydrogen in
stars has
been
around for
close to 14
billion years

are you saying that the water
i drink, the beer and the
wine
i drink is as old as the entire
universe?

No, but the hydrogen in the water is 14
billion years old. Molecules
can be quite young, but most light atoms are
as old as ... well, older
than the hills

Re: life time of an atom

i cant understand

how can that hydrogen atom entity still be the same entity no matter what and entropy?

Entropy doesn't demand that the hydrogen atom fall apart, and I don't know where you got the impression that it does.

sure it does, how can it not do

Entropy does not demand that the hydrogen atom fall apart.

what you are saying is that hydrogen atoms are invincible

Invincible? No. It's quite easy to ionize hydrogen. Done all the time in a bottle of vinegar. Entropy didn't make it do that, though.

and eternal which is impossible

No, it's not. Don't know why you think everything has a finite lifetime.

entropy must act on them as well as on everything else, but maybe slower

There is nothing about entropy that says that everything has a finite lifetime. If you got the opposite impression, look again.

Re: life time of an atom

Re: life time of an atom

entropy dont work at atomic level? only at macro levels?

16 billion years old water?
this is not posible

hydrogen
without
electron
decay
into
neutrinos

No, it
doesn't.
That's been
explicitly
tested in
experiment.

neutrino is lighter than
hydrogen

Right, but a neutron decaying into a neutrino
would violate a few
conservation laws, including baryon number
and lepton number. So it
doesn't happen.

This
is
the

Re: life time of an atom

answer
for
all
stable
states:
it
is
the
lowest
energy
state
accessible
by
conservation
laws
and
participating
interactions
--
a
dead-end
street,
if
you
will

PD

i
cant
quite
see
what
this
has
ta
do
with
atomic
energy
states

energy
can
be

Re: life time of an atom

transformed
into
dark
matter
very
easy

I don't see
what THAT
has to do
with atomic
lifetimes.

it has, becus hydrogen at
high speed near speed of
light
becomes heavier,

No it doesn't.

hereby its atomic mass
increase and
consequently it becomes
another atom, a iron atom
for instance,
but it depends on how fast it
goes

after that all tha heavy
atoms transforms into dark
matter– Hide quoted text --
Hide quoted text –

– Show quoted text -- Hide quoted text –

– Show quoted text –