SU(3) : n Theory of the E Cat Device

In general the force of n space is generated from the energy of n space through the equation:

$$F = \frac{dm(r)}{dr}\left(\frac{m(r)^{1/2}}{r\frac{dm(r)}{dr} - 2m(r)}\right)E \quad -(1)$$

where E is the total relativistic energy of n space. The metric $m(r)$ is defined by:

$$ds^2 = c^2 d\tau^2 = m(r)c^2 dt^2 - \frac{dr^2}{n(r)} - r^2 d\phi^2 \quad -(2)$$

d,l is the infinitesimal line element of the most general spherically symmetric space. More generally the space is described by two functions $m(r)$ and $n(r)$.

Under the condition:

$$r\frac{dm(r)}{dr} = 2m(r) \quad -(3)$$

the force F of n space becomes infinite for a finite, or vanishing energy E of n space. The condition (3) is seen discussed in UFT417 and UFT430. Therefore small amount of vanishing energy can induce an enormous force F under the condition (3).

The total relativistic energy in n theory is:

$$E = \gamma m(r) mc^2 \quad -(4)$$

where γ is the generalized Lorentz factor of n theory, introduced in UFT415 ff. The n theory is developed in time (r_1, ϕ) where:

$$r_1 = \frac{r}{m(r)^{1/2}} \quad -(5)$$

2) and transform back into frame (r, ϕ), in which eq. (1) is written. Here (r, ϕ) is the frame of the plane polar coordinate system.

Now apply the de Broglie / Einstein theory to give:

$$E = \hbar\omega = \gamma m(r) mc^2 \quad -(6)$$

Here $\hbar\omega$ is the quantum of n space energy. Therefore:

$$F = \frac{dm(r)}{dr}\left(\frac{m(r)^{1/2}}{r\frac{dm(r)}{dr} - 2m(r)}\right)\hbar\omega \quad -(7)$$

The concept of quantum of space energy was introduced in UFT 226. In UFT 417 onwards the force of n space was derived using classical Euler Lagrange and Hamilton dynamics and shown to be the same in both sets of dynamical systems. This demonstrating result, in eq. (1).

If F is negative, a nuclear reaction can be induced by a small amount of n space energy if condition (3) is met. Condition (8) was developed in UFT 417 and following pages, and in UFT 430, by Horst Eckardt.

The ECat device functions by the reaction of nickel and a proton:

$$^{64}Ni + p = {}^{63}Cu + MeV \quad -(8)$$

A huge amount of energy is released in this chemical reaction. This is a low energy nuclear

) reaction (LENR). It is called low energy because
e proton does not need to be accelerated. However,
, energy released is of the same order as the energy
elessed in a conventional atom smashing experiment.

The explanation in theory is that the attractive
ge from eq. (7) overwhelms the repulsion between ^{64}Ni
nd p', and and ^{64}Ni transmutes into ^{63}Cu according
o eq. (8). There is a loss of mass, which in theory
, described by:

$$\Delta m = \left(m_1(r)^{1/2} \cdot m_1 - m_2(r)^{1/2} m_2 \right) \quad (9)$$

where $m_1(r)^{1/2} m_1$ is the mass of ^{64}Ni and where
$m_2(r)^{1/2} m_2$ is the mass of ^{63}Cu. This loss of mass is
converted into the release of energy:

$$E = \Delta m c^2 \quad (10)$$

a, heat and electromagnetic radiation. The heat
, so great that it can melt containers, and the
visible frequency radiation manifests itself as very
intense light, that can only be observed through
the darkest kind of glasses.

Therefore a nuclear reaction has been induced
chemically, and the binding energy of ^{64}Ni has
been released as heat and light, particles
and so on. Exactly the same process occured in
the first atom smashing experiment by Cockcroft and

) Walton of the Rutherford group. However, Cockcroft and
alton) used a very high voltage generator to accelerate
rotons into a Li nucleus, which split to give two
lpha particles, with release of binding energy. The
nergy released was much greater than the initial proton
nergy.

Walton described this experiment to me at Trinity
ollege Dublin in the late seventies, when he was a
obel Laureate and Emeritus Professor. He described the
pproach as bike parts stolen off the Cambridge
quad, together with glass blowing by Rutherford's
own group.

The fission of uranium 235 by neutrons
eleases other neutrons and a chain reaction. The first
uclear bomb of this type was detonated in 1945 at Los
lamos, and released intense heat, enough to
aporize the test site, and intense radiation
om γ rays to visible.

The fission bomb can be described through the fact
hat ^{235}U is inherently unstable. However, ^{64}Ni is
table, but when a proton is fused with ^{64}Ni it
ecomes unstable. The ECat is a commercially available
evice that fuses ^{64}Ni with p. In many ways this
an be done by the absorption of a very small amount of
a. The experiments determine the conditions for ECat to work.