Another Solution to the CERN Experiment.

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Abstract: The CERN Problem is examined from another prespective.

One starts with Friedmann's equation:

$$\frac{1}{a^2}\left(\frac{da}{dt}\right)^2 = \frac{8\pi G}{3}\rho - \frac{kc^2}{a^2}$$

where a and k denote scale factors and spatio curvature. The alphas scale by

$$a:\quad \tfrac{8\pi G}{3}\rho \ \propto\ a^{-3},\ \ \tfrac{kc^2}{a^2}\ \propto\ a^{-2},$$

and the

$$\tfrac{1}{a^2}\left(\tfrac{da}{dt}\right)^2$$

depends upon k. This rescaling in effect makes space-time and the vacuum state a variable itself. As the scale gets smaller there should in essence be a difference in the global and or local value of C. Thus modern cosmology has long had the issue of a variable C built in it. But this fact is mostly ignored. VSL cosmology weather C varies in space-time or simply by scale all point to C not actually being a constant when we apply the best cosmological modeling.

In this aspect I would suggest the older PV models prior even to Puthof might have had it right. But, it could also be that the vacuum has two aspects that can be modified. The basic vacuum state has a natural two values that can be modified. PV modeling almost always assumes only one can be changed. But it has never been asked what effect could high energy on a very local scale have on the other part of the equation.

C in the Lorentz factors and elsewhere is replaced by the velocity of light in a medium of variable refractive index, c/K; expressions such as E = mc2 are still valid, but take into account that c →c/K; and E (=Eo/√K) and m (=moK3/2) are now functions of K. it's the variable refractive index that has two values which in theory could vary. These are the electric permittivity and the magnetic permeability of the vacuum. We then have

$c = 1/\mathrm{sqrt}(\varepsilon_o\mu_o)$.

What could be at work is a frequency-dependent effect in quantum waves that depends upon the scale involved. Perhaps at quantum scales or near such the frequency dependance shows itself at high energy states so that the first part of the equation alters thus effecting the whole situation and results in a modified C state. Lets say the second part remains constant but the first part varies. The normal values for the two are 1. But if the first was 2 and the second 1 you now get C at twice the normal vacuum value. One could also propose they both vary by scale and energy. Interesting enough any particle in such a state would have the same energy at its version of C as it would in a normal vacuum state. Thus, no loss of energy would be expected. Both vacuum states retain Lorentz invariance even though one has a different value for C itself.