

# The Creation of the Universe Part II

## (The Destruction)

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Hint: all first order quantities can be multiplied by  $2\pi$  and all second order quantities can be multiplied by  $\pi$  for circumference and areas of circles (i.e., Isotropy).

Let the total mass of the Universe at a given instant T be given by:

$$M^T = C^0 T^0 = n^{ij} \Gamma^{ij} C^{ij} T^{ij} \text{ where } n^{ij} \text{ is the number of particles of each type (each degree of freedom).}$$

$$\text{Where } x(v)_{ij} = x(c)_{ij} = c_{ij} t_{ij} = X^{ij} = C^i T^j = M_0^{ij}$$

(Note that  $x(v)_{ij} = x(c)_{ij} \rightarrow 0$ , then  $M_0^{ij} \rightarrow 0$ , and there is no singularity)

$$\text{Then } M^T = C^0 T^0 = n^{ij} \Gamma^{ij} C^i T^j$$

$$\text{And } (M^T)^2 = (n^{ij} \Gamma^{ij} C^i T^j)^2$$

Where  $i = j$  indicates a vertex (relativistic energy) in a Feynmann diagram, and  $i \neq j$  indicates a line (relativistic momentum) joining the vertices.

Then the total relativistic energy of the Universe is given by:

$$(E^T)^2 = (M^T)^2 (C^T)^4 = (n^{ij} \Gamma^{ij} C^i T^j)^2 (C^T)^4$$

So  $(E^T)^2 = (M^T (C^T)^2)^2$ , which is a positive constant.

Each  $\Gamma^{ij} C^i T^j$  corresponds to the relativistic covariant “Mass Length” (inverse to the contravariant deBroglie “wavelength”), and C = the global rate of mass creation at the “center of light” of the Universe.

1. The above model includes only two-body interactions; if there are more at a vertex, new virtual degrees of freedom must be included.
2. If any of the Feynman lines are curved (quantum gravity), they can be described by making the curves piecewise and including additional degrees of freedom.

3. The relativistic momentum  $(PC)^{ij} = (h)^{ij}$  corresponds to Planck's constant  $h$  (included in the characterization of  $\Gamma^{ij}$ )
4. Both matter and antimatter is included because the equation is the area of a circle centered at the origin (a single field point). If  $E^T = 0$ , there is nothing massive in the universe.

Since  $E^T$  is positive definite if the Universe exists, the total Universe is only described on the space-like (reality) axis  $T = \text{constant}$ .

To destroy the Universe, an imaginary quantity  $iE^T$  must be introduced, so that

$$(E^T)^2 + (iE^T)^2 = (E^T)^2 - (E^T)^2 = (E^T)^2 (1^2 - 1^2) = 0$$

If there is an infinitesimal something "left over" (a figment of the imagination) we set

$$ds^2 = (E^T)^2 + (iE^T)^2 = (E^T)^2 [1^2 + i^2] =$$

Which is a scalar  $(E^T)^2$  multiple of the resultant orthogonal vectors  $(1, i)$  in the complex plane, with the area given by  $ds^2$ , which is zero if there are no figments of the imagination included.

### The Minkowski metric in flat space

The simplest metric in flat spacetime is the Minkowski metric:

$$ds^2 = -c^2 dt^2 + dx^2 + dy^2 + dz^2$$

Where if the center of light is known is given by:

$$ds^2 = -c^2 dt^2 + dr^2 = dr^2 + (icdt)^2$$

Assuming we can integrate, we have:

$$\Delta s^2 = (\Delta R)^2 - (CT)^2$$

Setting  $\Delta R = CT$  for the total Universe, we have that  $\Delta s^2 = 0$ , unless the Feynman diagrams exist outside of the imagination. (Again, if there is curvature, we simply add more Feynman diagrams to straighten everything out.)

However, if  $\Delta s^2 \neq 0$ , then Santa Claus and the Father/Son must be at work again, since you can't destroy a bit of the Universe that isn't there ... ☺