

The Planck Length (Physical Interpretation)

Reference: http://en.wikipedia.org/wiki/Planck_length

The Planck length is defined as $L_p = \sqrt{\frac{\hbar G}{c^3}}$.

If we consider the total energy of an isolated system (e.g., the Solar System, or the “Universe”) as described above, then we can set $G = (\frac{C^2}{c^2})c^2 = C^2$ where c is the local “mass creation rate” of light, and C represents the “mass creation rate” of the Universe, so that $(L_p)^2 = \frac{\hbar}{C} = \frac{h}{2\pi C}$ and $\pi(L_p)^2 = \frac{h}{2C}$. If L_p is now considered to be the “Schwarzchild radius”, $R_s = CT$ where C is the creation rate of the “Universe”, and T is the creation time, then we have the Schwarzchild “area” $A_s = \pi R_s^2 = \frac{1}{2} \frac{h}{C}$.

(The factor of $\frac{1}{2}$ appears because the positive and negative radii are degenerate when the system is considered to be “centered” around matter and anti-matter). Then the quantity $\frac{H}{C}$ represents the creation rate per unit “Universe” where H is Planck’s constant for a single cycle of the deBroglie wave describing the total “Universe”. If h the local “creation action” for each local “cycle”, then $h = (h/H)*H$ (i.e., $c = (c/C)*c$).

For each iteration of $H(T) = CT$, a new universe is created.

The Schwarzchild “area” then represents the area of the total universe.

If we take $h = C = T$ ($= R_s = CT$) = 1, then $C = 1$ is the total energy of the Universe at a single Time increment from 0.

This is consistent with Einstein’s choice of $C = 1$ in GTR as a basis for the Minkowski metric for an unperturbed Universe of unit Schwarzchild radius as an initial condition.