

Richard Feynman's "Magic Number" Alpha is Explained By Holographic Cyclic E8 Symmetric Universe Theory

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Abstract: The fine-structure dimensionless constant alpha ($1/137.035999139$) has long been a mystery in physics. It now appears to be related to dark energy and the radius of the universe at age 13.5 billion years (scheduled collapse age of the 9th cyclic universe which did not happen) according to holographic cyclic E8 symmetric universe theory.

During my more recent thinking about a possible dark energy gauge boson communication particle, I have come to realize how important the particle would potentially be as a means of communicating holographically in 2000 seconds or less (0.55 hr.) to any place in the universe. Holography simplifies addressing the message to that of an XY operation. If one takes the inverse of alpha¹ x the speed of light = $137.035999139 \times 3 \times 10^8 \text{ M} = 4.1110797 \times 10^{10} \text{ M/s}$ and compares this number with the present radius of the universe² = $4.29611 \times 10^{26} \text{ M}$ the numerical agreement is quite good. If one assumes alpha was calculated (by whom!) using the radius when the universe was 13.5 billion years old (scheduled³ age of collapse of the 9th cyclic universe, which did not happen) the radius now would be $(13.8/13.5)^2 \times 4.1110797 \times 10^{10} \text{ M} = (1.0222222)^2 \times 4.1110797 = 1.0449382 \times 4.1110797 = 4.2958242 \times 10^{10} \text{ M}$. This new radius calculated using inverse alpha data 0.3 billion years old corrected by a squared factor differs numerically by a factor of only 1.0000665 from the present radius value of 4.29611. This simple 4-function calculator computation convinced me that Nature wants us to be able to communicate by holographic means with mankind anywhere in the universe. But first we must understand the

magnitude radius discrepancy 10^{10} M (α) vs. 10^{26} M (actual): If one takes the maximum communication distance between two points in the universe at age 13.5 billion years = $2R_{13.5} = 2 \times 4.1110797 \times 10^{26} \text{ M}$ and uses this to find the area of the sphere enclosing the universe at that time $(4/3 \times \pi \times (2R)^3)/(4 \times \pi \times (2R)^2)$ one gets $2R_{13.5}/3$. If we next find the holographic dimension = $R_{\text{holo}} = (2 \times 4.1110797)/3)^{0.5} \times 10^{13} \times \text{M}^{0.5}$. The maximum holographic dimension is $2^{0.5} \times$ this, or $R_{\text{holo}} = 2 \times 1.1706237 \times 10^{13} \text{ M}^{0.5}$ (Note that $1.1706237 \times (13.8/13.5) = 1.1966375$: a more accurate value for this constant than any I have seen). If for the maximum holographic dimension communication between any two points on the area corresponding to this dimension is postulated to take no more than 2000 seconds, then this can be accomplished at a speed of inverse $\alpha \times 3 \times 10^8 \text{ M/s}$. $4.1110797 \times 10^{10} \text{ M/s}$. Thus it becomes clear to me that Nature operates holographically to permit cosmically fast (order of 1 hour per bit) communication between any two points in the universe.

This faster type of communication radiation has a quantum particle associated with it. Using $E = \text{quantum of the universe}^4 \times \text{freq. (cyc./sec)} = (20 \times h_{\text{bar}}) \times \text{freq.} = (20 \times h_{\text{bar}})/(2000 \text{ s})$, $E = (1.6896093 \text{ GeV-s} \times 10^{-44} \times 20)/100 = 33.792186 \times 10^{-43} \text{ GeV}$. This numerical value of the quantum of the universe can be compared directly to the mc^2 value of H-Z = $125 - 91.18762 \text{ GeV} = 33.81238$. This number is larger than 33.792186 by only a factor of 1.0005975 . Thus $H=125 \text{ GeV}$ could have been a very reasonable value 0.3 billion years ago when it was presumably measured at the same time as α .

Another important value is the mc^2 of the top quark = 172.44 GeV according to recent LHC measurements. For a frequency of 1 cycle/s of dark energy radiation, $E = 1.6896093$

$x (13.8/13.5) = 1.6896063 \times 1.0222222 = 1.7271561 \times 10^{-44}$ GeV. This calculation (172.71561) is a more accurate value for the top quark because \hbar is known to greater precision than the LHC data.

Another thing we notice: The mc^2 mass of the tau lepton is 1.7768 GeV . 100X this mass is 177.68 GeV: If we take $177.68/172.71561$ we get 1.0287431. The ratio $(13.8/13.5) = 1.0222222$. The ratio $1.0287431/1.0222222 = 1.0063791$. This number (less than 1%) indicates to me a close connection between tau leptons generated 0.3 billion years ago and top quarks (true mass = 172.71561 GeV). Could dark energy heavy leptons be 9th universe scheduled collapse age (13.5 billion yrs.) decay products of cosmic dark energy? Stay tuned!

Dick Feynman's magic number now appears to be part of experimental holographic cosmology rather than particle physics: no wonder he could not understand it with the limited experimental cosmological knowledge of just a few years ago!

We must upgrade the role of dark energy to include its use as a new form of higher speed cosmic radiation of potentially 100X higher speed and capable of enabling communication between any two points in the universe holographically in 2000 seconds or less.

1. "Fine-structure constant", Wikipedia, (2017)
2. "The radius of the visible universe", Wikipedia, (2017)
3. George R. Briggs, "Eight cycles of our E8 symmetry universe have collapsed, also ending time: our own cycle has not collapsed and time has been reborn", ViXra 1709.0445, (2017)
4. George R. Briggs, "Quanta of the universe are closely related to universe matter density and the cosmological constant", ViXra 1707.0418, (2017)