THE QUBIT UNIVERSE **derivation**

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A1 Introduction

A more general explanation is given in **Explanation of the qubit universe**. Therefore the following calculation should be understood as a valid cosmic process for the Big Bang separating the two opposing infinities, one for dark matter and the other the absolute nullification of quantum photon empty space due to photon interference up to the limit of Planck length of about 10^{-35} meters. The dark matter infinity is understood as the mobility of infinite dark matter cells representing also the zero energy state then having no perpetual movement any longer. It means that the mediating mass of the generalized H atom for each atom is the resonance state of mediation between the two infinities.

A2 The first step in the proof for the equality based on the two mentioned symmetries is a straightforward calculation.

The number of electrons/positrons per meter follows $(1024)^4$ /(8/3 x 1.00521) binary steps.
One knows straight away this must be correct because the electron has eight choices to jump from one plane of a cube to the opposite plane but it is restricted in the three directions for switching. For the pyramid symmetries in a coherent phase space of time one needs 12^{12} dipole exchanges to equal the length of the electron string of 4.121021 10^{11} steps, reciprocal of λ_e = 2.426583 10^{-12} m. (2.426488)

The equality: $(1024)^4$ = 1.099511 10^{12} = 4.121021 10^{11} x 8/3 x 1.000521

12^{12} = 8.916100 10^{12}	12^{11} = 7.430083 10^{11}
Ratio 1:	ratio 2:
8.916100 10^{12} /1.099511 10^{12} =	7.430083 10^{11} /4.121021 10^{11} =
8.109146	1.802971
8.109146 / 8 = 1.013643	1.802971 /√3 = $(1.013466)^3$

Giving: 1.013643 /1.013466 = 1.000174 $(1.000174)^3$ = 1.000522 (653)

Above sweeping statement needs some consideration. From the point of view as a first impression the cubic symmetry might be correct. However from the mid plane symmetries between the cubic equi-triangle and equilateral pyramid described in fig 7, one needs three volume reduction of an $1/8^{th}$ to comply with the cross over constant between volume and height for these pyramids. The other ratios follow from fig 7. The cross over constant is calculated in table 1. The result is:

1728 /1024 = 12 $/(8/3)^2$ = 108 /64 = 1.68750000.

The other conserved ratio as shown further on is 2√2 the scaling constant between the pyramids in momentum space in which the forward phase velocity of √2c is normalized to c as shown in table 1.

Take the square root of 2√2: 1.681792
Giving the ratio:1.6875 /1.681792 = 1.003393
$(1.000653)^6$ = 1.003918

What can be made plausible is that $(1.000521)^7$ = 1.003652 while 1 + (1 /137.036) = 1.007297.

The tentative conclusion is that Compton's fine structure constant of (1 /137.036) is determined by two conserved exact ratios of 1.68975 and 2√2 based on the competition between the two pyramid configurations of which the base is always the equilateral triangle. Further not analyzed is:

108 / 64 = 27 /16 = 3^3 /2^4 pointing to the first inversion step followed by the 2^{nd} step giving the final ratio of 1728 as an internal dynamic process.

The other firm conclusion is that indeed the above straightforward calculation can be validated and confirmed in the next paragraph of the 7^{th} exponent representing the 7 inversion symmetries for binary reduction to our present day cosmos.

A3 The second step in the proof
Binary inversion symmetry for electron generation by a process of Planck's induction

Par 2.0 Introduction

Following the inversion symmetry discussed in chap 1 the equalities shown in rel 1.1 and 1.2 are to be considered as parameter inversion between Planck's and electron parameters. The whole range from m_e to λ_{pl} of 10^{-31} to 10^{-35} respectively as not equal in dimension is a consequence of inversion between these parameters. These are:

$m_{pl} = 5.456035\ 10^{-8}$	$m_e = 9.109462\ 10^{-31}$	kg	*9.109308 update*
$\lambda_{pl} = 4.051453\ 10^{-35}$	$\lambda_e = 2.426583\ 10^{-12}$	m	*2.426488 update*

First is the proof of the inversion equalities mentioned is given by rel 1.1:

$$\lambda_{pl} = 1.002490 \times 2\sqrt{2}\ \lambda_e^{3} \qquad (1.1)$$

Followed as a consequence of (1.1):

$$m_{pl} = 1.766053\ m_e^{1/4} \quad \text{or} \quad m_{pl}^{4} = C_4\ m_e \quad \text{with} \qquad (1.2)$$

$$C_4 = 1.766053^4 = 9.727806$$

In the first instance these equalities cannot be correct because of the dimensions respectively (λ_{pl} and λ_e) and (m_{pl} and m_e). However the factor $(\sqrt{2})^3$ suggests it to be linked to the pseudo vector of λ_e.

Note update the factor 1.002490 is about 1.002831 and $(m_{pl}/m_e)^{1/4} = 286.288 \times 1828$. In the report 'preliminary' the refurbished calculation is given without changing the conclusions.

Comment: The real R obeying Newton's laws of our 3D spatial space is subjected to two entanglement transformations determining $R^4 = R_{sub}\ R_{lin}$ with R_{sub} and R_{lin} as transformation parameters. Derived at 'Sacharov's report' par 4 and these three R's comply with the uncertainty condition for momentum . The 4th power of R is valid for any pseudo vector medium surrounding a conserved potential field explaining the 4th power of m_{pl} with respect to m_e .

Note
Dark matter ratio limit Planck $(m_{pl}/m_e)^{1/4} = 286.2874 \times 1728$
With $286.2874/2 = 143.1437$ $\qquad 1604.175 = (137.036)^{3/2}$
Substitution $1/137.036 - 1/(2 \times 1604.175) = 1/143.1437$
Error 1.00022 due to choice of 1604.175
Higgs' limit at 142.6940 x1728 has similar substitution: $1/137.036 - 1/3456 = 142.6940$

Par 2.1 The absolute proof of the inversion symmetry of Planck's and electron parameters

As is shown in the previous paragraph, the number of binary divisions for the electron is given as the reciprocal of λ_e .
The number of N_{e1} aligned as $4.121021\ 10^{11}$ (elec/m) where

$$1024^4 = 2.668056 \times N_{e1} \quad \text{with} \quad 2.668056 = 2 \times 4/3 \times 1.000521.$$

Now determine the number of electrons in the universes (twelve):
Take the overall mass $M_{tot} = (L_{coh})^2$ which is the angular momentum of a Planck filament of 1 kg and divide by m_e . However, from the same definition of the line density of m_{pl}/λ_{pl} every one meter of the event horizon represents a black hole mass of $1.346685\ 10^{27}$ kg giving M_{tot} .

$$M_{tot} / m_e = (1.346685\ 10^{27})^2 / m_e = 1.990853\ 10^{84}\ \text{(elec)}$$

Binary division symmetry shows, see 'Overview' par 2 for ratio 1.024803:

$$1024^{28} = 1.942668\ 10^{84} \quad \text{with ratio } 1.990853/1.942668 = 1.024803$$

$$\text{while } N_{e7} = (4.121021\ 10^{11})^7 = 2.018523\ 10^{81}\ \text{(elec)}$$

The overall volume of the universes is:

$$V_{tot} = V_{e7} = L_{coh}^{3} = 2.4423400\ 10^{81}\ (m^3)$$

Showing that every cubic meter of the expanded universe contained one electron having a unit density of 9.109462 10^{-31} kg /m^3 .
The ratio between N_{e7} /V_{tot} = 1 /1.209943
with 1.209943 /$(1/3\sqrt{3})^{1/3}$ = 1.007499 = $(1.002493)^3$

With this important result it is allowed to state that it is a string of L_{e1} = 4.121021 10^{11} (m) with one electron per meter. So is L_{e2} = $(4.120121\ 10^{11})^2$ a surface of one electron per m^2 but also a string of that length with one electron per meter. Then L_{e3} = $(4.121021\ 10^{11})^3$ or a volume of one electron per m^3 but it is also a string of that length with one electron per meter. This can be continued to L_{e7} as a volume or a string of a unit as the electron.
What is revealing is that N_{e6} = L_{e6} = 4.898114 10^{69} (m^3) or (m) or (number of electrons) is the square power of N_{e3} while the ratio between N_{e7} and N_{e6} will be used to convert Planck masses into compressed τ-leptons.
It means that if N_{e3} of 6.99 8653 10^{34} has a mass of N_{e3} x m_e = 6.375398 10^4 (kg) being in the state of contraction for the electron density δ_e , for N_{e3} is contracted in one m^3 ,($\delta_e = m_e /\lambda_e^3$).

N_{e3} is also the reciprocal of Planck length divided by the factor $2\sqrt{2}$ x 1.002490 = 2.835470
Now take the string N_{e2} = 1.698281 10^{23} with mass of N_{e2} x m_e = 1.547043 10^{-7} kg. Determine the black hole radius c^2 /G = 1.346685 10^{27} (kg /m):
R(-34) = 1.148777 10^{-34} (m) N_{e3} x R(-34) = 8.039897 = $(2\sqrt{2}$ x $1.002490)^2$
Similarly the ratio to Planck's mass :
1.547034 10^{-7} /5.456035 10^{-8} = 2.835454
Showing relations 1.1 and 1.2 are correct as equalities. But the value of the mass of 1.547034 10^{-7} is also the other internal parameter of the electron of $F_{vac} = m_e /\lambda_e^2$. So reciprocity tells us how to generate the internal parameters.

The meaning of N_{e6} is that N_{e3} units for Planck's generation are used to funnel compressed τ-leptons in great numbers by using the condition for gravitational induction:
$m_{pl}^2 = M_e\, m_e$ applied to the electrons with M_e the induction mass provided the exchange velocity is less than c or as valid here for the effective velocity of ½c.
Giving m_{pl}^2 = 2.97683 10^{-15} and m_e then M_e = 3.267845 10^{15} (kg)
By making $M_e\, m_{pl}^2$ = 9.727824 = $(1.767370)^4$ with deviation of 1.000746 for C_4 .
But also $N_M = M_2 /m_e$ = 3.587309 10^{45} electrons. Compare to N_{e4} = 2.884159 10^{46} giving the conserved ratio 8.039894 but 8.039…/8 = $(1.002490)^2$

The induction balance for high density τ-lepton works as follows:
Take the reciprocal of m_{pl}^2 giving: 3.359296 10^{14}
Determine the overall mass for τ: $(2.668056)^7$ = 962.4198 m_e
Because $(1024)^{28}$ = $(2.668056)^7$ x $(4.121021\ 10^{11})^7$
Showing self consistency: 962.4198 /864 = 1.113911 = $(1.036613)^3$ with
To the quark cell of 1728 m_e : $(1.036613)^4$ = 1.1547005 = $\sqrt{4/3}$
Compare this mass to the real τ-lepton: 3456(1 + 21.189 /3456) = 3477.189 m_e
4 x 962.4198 = 3456 + 393.6798 = 3456 + 16 x24.60495
The τ-compressed is: 3456(1 + 24.60495 /3456) = 3480.604

With energy balance of: 21.189 + 34.259 = 0.513 + 24.60495 + 30.33
Determining free energy between neutron and proton of 1.531 compared to 3 x 0.513
By using respectively the values of the pseudo and c-state of the τ-neutrino.

The reciprocal contraction for τ-compressed:
3480.4198 x 4.121021 10^{11} = 1.43464 10^{15} divide by 16 /3 =5.3333: 2.68943 10^{14}
The ratio between the reciprocal m_{pl}^2 and above:
3.359276 10^{14} /2.68943 10^{14} = 1.249066 1.249066 x $\sqrt{2}$ = 1.766444
Deviation to C_4 = 1.766053 is 1.000221

Note $16/3 \times \sqrt{2} = 7.542472$ with $8/7.542472 = 1.060660 = (\sqrt{3/2})/\sqrt{4/3}$
$1.060660 \times 1.002493 = 1.063304$ times 1728 $1837.389 m_e$ close to H-atom.

Conclusion

Shown is that $N_{e6} = (4.121021\ 10^{11})^6 = 4.898114\ 10^{69}$ as the square power of N_{e3} gives the proper formation of Planck's contraction. In the sense of physics the number of τ-leptons emerged through gravitational induction from Planck's parameters.

The binary division inversion is coupled to the pyramid inversions for the quark cells. The factor of the coupling is 2.668056= 2 x 4/3 x 1.000521= 8/3 x 1.000521.

Both symmetry inversions show the end condition of the τ-lepton after the 6th and 7th inversion. What is not completely analyzed are the states in between for these two symmetries.

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