Your Hohm U.R.H.U.E.0hm
Unfolding Resonant Harmonic Unity Emergence from Zero Point

A unified framework for the derivation of fundamental constants from a single self-similar ratio structure

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Abstract

All of experienceable reality is one infinite and complete system. We only experience it through the perception of difference from a perspective that is inside it. The whole thing is one, but to any part inside it, it appears to have asymmetry. That asymmetry is what causes everything that happens.

Anything we recognize is part of a system of self-reference. That system has to stay stable enough to hold a pattern, but change enough that the patterns inside it can actually notice the changes.

To have any system at all, there has to be a transition from raw "is" pure energy with no definable aspects to something that can be distinguished. One thing cannot interact with itself as one. Two parts cannot truly interact in a way that keeps them separate, because any interaction would equalize them back to just two and nothing more.

With **three** parts, there is finally enough for real separation and interaction. The third part can experience a change in the other two, and every interaction is felt as a change by all three distinctions. From there, everything fractals into infinite but structured and predictable variation.

From this, all things form.

This creates a self-similar, self-referential loop. When you look at it linearly, it becomes sequential iterative change that keeps gaining more distinction and complexity, always pulling away from the single definition-less whole while still being completely

part of it.

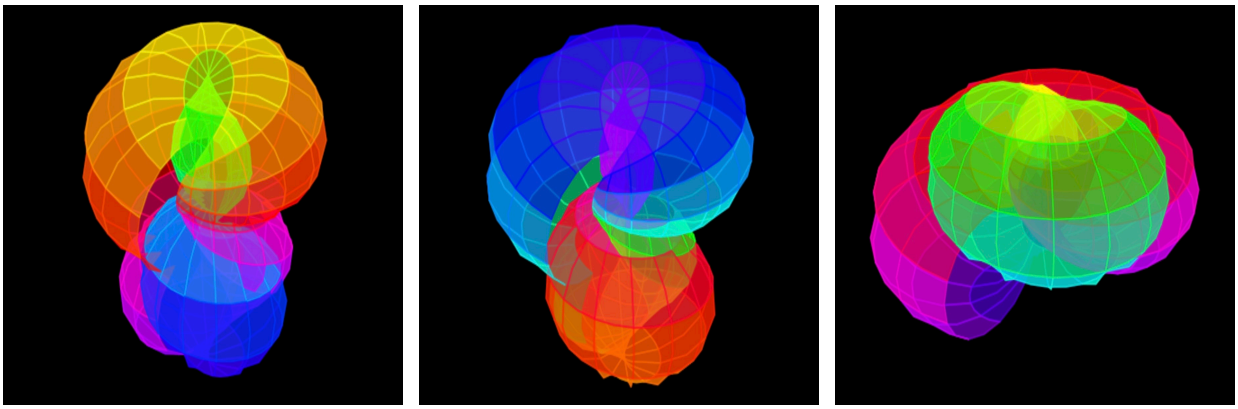
This pattern naturally forms what is most easily described as a toroidal vortex.

U.R.H.U.E.0hm (Your Hohm), says reality consists of relatively stable nodes of harmonic resonance, organized into layers. When we quantize those layers and label them with numbers (the modern version of this symbolic system), we can represent them as planes within the toroidal structure. These planes can be split into labeled sections, and adjacent planes are related by consistent proportional offsets.

This theory can be thought of a lot like string theory, but with one string one very long string that's also very short, depending on how you look at it. Sort of like a black hole is the event horizon of being in a singular point, not something that you can go to something that if you went towards eventually you turn around and it'd be behind you. Or at least I think of it like that.

A fundamental part of this theory is that our reality is inside of a self-referential self somewhere pattern that is creating infinite complexity while going through very little change locally and no change whatsoever in the entire entirety. Nothing leaves the entire system and nothing is added. It is just energy, gaining more nuance and definition. I see our local reality as in everything we can experience as human beings. As happening, either entirely or almost entirely with a domain that is book ended by light or just the tiniest disturbance that we can detect in the electromagnetic vacuous relatively low density plasma that everything is before we can see it as something and gravity. Things seem to only gain complexity, or lose it rapidly. Things like atoms, maintain complexity, and allow for things like us to become made of atoms. Same with the larger thing systems of stars and stuff like that. If thought of sequentially then gravity is like beforehand where it's just the fabric of the plasma, pulling on itself, oppose itself into toroidal vortexes because you can't go anywhere when there's nowhere to go she creates space by running into yourself and being in a circle basically, and then on the other side of that, smaller individual parts of the energy that have somewhat broken free of the vortex whatever system they were part of radiate out and are light, I see gravity, and light is both kind of the first step and last step same as how one and three are the first and last at the same time. There is no time besides in experience. Sequence it's just an experience. A lot like the reason that the sky is up in the ground is down. Not so much like there is a past that was then and not now in the traditional sense and there's a future that is to become and has not been. Those things are only true in human words and when being an experience. This paper is supposed to be short.

Calculations between these representations give us real insight into how reality works. They help predict and understand interactions with more consistency and intuitive explanations than before. Numbers, in this view, represent abstract and fundamental geometry that we previously thought was beyond our ability to understand at this level.



A visualization of the structure. Written in python, a toroidal wave function. Done in Pythonista on iOS.

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1 Axiomatic Origin: The Minimum Ontology

Physical existence requires a minimum of three irreducible elements: an observer or a receiver of change via an argument of two states within one of three first things, an observed, two outside states that hold distinction and are both acting upon the observer or receiver of their difference, and the act of observation between them or separation from the receiver and the two states, causing a change resisting pattern; One uniform fluctuation is entirely formless and practically cannot happen, it is only happening when a a third thing, the receiver of the difference between the two fluctuation is acted upon by that difference, creating a state distinct from singular change between the other two. This is not a philosophical preference it is a structural necessity.

A single entity has no reference frame.
Two entities create nothing, no interaction, there are no two entities.
The interaction of nothing and another part of what is not a thing creates state where itself is the third and first element, witnessing the first thing, a duality, created by a trich, and it cannot be reduced.

Formally: let the null state be 0, the first distinction be 1, and the relation between distinctions be 3. These are the first three topological modes of a self-referential system:

$$0 \rightarrow 1 \rightarrow 3$$

Two is not the second element it is the pivot. It is the hinge between 1 and 3, the first balance point where observation folds back on itself. Every structure that follows is 1 and 3 in relation, mediated by 2.

Two and five have a unique relationship. Anytime there is a one in any numerical value whatsoever, that one is made of two fives nested inside it, and five is made of two and three of course. Every-time you have one, two relationships of two and three. One (All iterations of One) using one through three, the base of existence, can be made the most efficiently with 3 three times and a one, but really thats just three three times repeated infinitely, it is still 2 digits making up the construction. two threes and two twos is by far the cleanest way, you cannot use less than four entities if you consider each numeral as an object, and this is the furthest you can get from using the argument to complete the argument and it includes the entire base of allows for formation/creation.

2 Generation of the Fundamental Grid

Apply the pivot against itself iteratively:

$$2^1 = 2, \quad 2^2 = 4, \quad 2^3 = 8, \quad 2^4 = 16$$

Three doublings of the doubled unit produce 16 the first grid resolution where 1, 2, and 3 coexist as distinct, non-collapsing positions.

The bridge between the generative numbers is:

$$2 + 3 = 5$$

Five is the additive identity of the generating pair. It appears as the scaling bridge in what follows.

Divide the interval $[1, 3]$ into sixteenths. This defines the **fundamental grid**: 33 positions from $16/16 = 1$ to $48/16 = 3$, with resolution $\Delta = 1/16$.

Discovery of the Seed Positions

I built this grid directly from the axiom. I had a strong intuition that the fine-structure constant would be somewhere with-in the grid, made of the grid I by planned to create using the numbers I just referred to because it is the coupling constant of electromagnetic systems, and the whole structure came from $1 \to 2 \to 3$.

Start with every Sixteenth, multiply each by three over and over, I did it thirteen times. You will end up with forty-eight rows made of thirteen columns of numbers, that have a curved but repeating and changing pattern to them, happening like a bit like a fibonacci sequence, that is fractaling into complexity. Each row is meant to be representative of the curvature of energy that is self-referential looping iteratively out and back in on itself, which is the topology with the unfolding resident harmonic unity emergence, a toroidal wave pattern, each row being a base of inward spiraling structure or with the increased length of numbers the further down the line you are Moore length and repetition. It's also like a decimals and that it's curling inward. It never quite touches itself and eventually the pattern is so arbitrarily similar to itself but now you're only one sixteenth over from where you began.

I started hunting through the positions. Two of them stood out immediately just because of the specific numbers involved. they're like representative of a barely asymmetrical almost symmetry where they nearly complete themselves in some way. I'm not sure how to describe it very well more than I am here.

Position 22 encodes the pivot (2) as a self-referential concatenation the digit 2 written twice, or equivalently $1 + 1$ doubled: $11 \times 2 = 22$.

$$\frac{22}{16} = 1.375$$

Position 39 encodes 3 extended by its own square 3 and $3^2 = 9$ concatenated: 3|9.

$$\frac{39}{16} = 2.4375$$

These were not chosen to fit a result. They were the positions that visibly preserved the structure of the original two and three inside the grid I built.

3 The Stretching Operation: Bridge of Five

To get a physically meaningful ratio, I looked for a number or a set of numbers that stood out and we were very close to the ratio of the fine structure one over one-hundred-thirty-seven, one point three-seven-five multiplied by three five times is three-hundred-thirty-four point one-two-five:

$$1.375 \times 3 = 4.125 \quad \rightarrow \quad 12.375 \quad \rightarrow \quad 37.125 \quad \rightarrow \quad 111.375 \quad \rightarrow \quad 334.125$$

This is:

$$\frac{22}{16} \times 3^5 = 1.375 \times 243 = 334.125$$

4 Talons Constant: The Light Seed

τ^L

Divide the 39th position by the stretched 22nd:

$$\boxed{\tau^L = \frac{39/16}{(22/16) \times 3^5} = \frac{2.4375}{334.125} = 0.007295173961840628}$$

This is **Talons constant** the base ratio of the light domain. It is the smallest coherent ratio constructible from the fundamental grid under the bridge-of-five stretching operation.

Comparison with the CODATA fine-structure constant:

$$\alpha^{\text{CODATA}} = 0.0072973525693$$

$$\tau^L - \alpha = -2.1786 \times 10^{-6} \quad \text{(298.5 ppm below)}$$

τ^L is not α it is the light seed from which α is derived.

5 Domain Structure: Light and Gravity

The framework defines two physical domains, each running the same ratio pattern at a different scale of the fold.

Light domain: spans $[1, 3]$ the full grid interval. The floor of the light domain is the mirror of position 22 off the pivot:

$$\text{light,floor} = 2 - \frac{1.375}{10} = 1.8625$$

Gravity domain: spans $[1, 1.6]$. The ceiling is the grid itself rescaled:

$$x_{\text{grav,ceil}} = \frac{16}{10} = 1.6$$

These two domains overlap on the interval $[1.6, 1.8625]$. The overlap is not accidental it is where the light and gravity layers touch. The width of the overlap window is:

$$\Delta x = 1.8625 - 1.6 = \frac{21}{80}$$

where 21 is a Fibonacci number and $80 = 16 \times 5$ the grid times the bridge. Every number in this expression was already present in the framework.

The midpoint of the overlap:

$$x^{\text{mid}} = \frac{1.6 + 1.8625}{2} = 1.73125$$

The distances from the pivot 2 to each domain boundary:

$$2 - 1.375 = \frac{5}{8}, \qquad 2 - 1.6 = \frac{2}{5}, \qquad 2 - 1.8625 = \frac{1.375}{10}$$

The ratio of the first two:

$$\frac{5/8}{2/5} = \frac{25}{16}$$

The grid squared over itself. The torus folding back.

6 The Gravity Constant

τ^G and the 128th-Grid Refinement

The gravity constant is derived by applying a single-step offset in the 128th-resolution refinement of the fundamental grid.

The 16th grid doubles four times to reach the 128th grid:

$$16 \to 32 \to 64 \to 128$$

In 128th resolution, the seed positions are:

$$\frac{176}{128} = 1.375 \qquad \frac{312}{128} = 2.4375$$

Apply a uniform offset of one unit (1/128) to both positions simultaneously, in the same direction:

$$p^{1,G} = \frac{175}{128} = 1.3671875$$

$$p^{2,G} = \frac{311}{128} = 2.4296875$$

The gravity seed:

$$\boxed{\tau^G = \frac{311/128}{(175/128) \times 3^5} = 0.007313345091\ldots}$$

Verification: $\tau^G > \alpha$ it lies above α, while τ^L lies below. The two constants straddle α.

7 The Fine-Structure Constant as the Curve Crossing

Consider the straight-line path in (p_1, p_2) parameter space connecting the gravity seed point $(p^{1,G}, p^{2,G})$ to the light seed point $(p^{1,L}, p^{2,L})$:

$$p^{1(t)} = p^{1,G} + p^{1,L} - p^{1,G}), \qquad p^{2(t)} = p^{2,G} + t(p^{2,L} - p^{2,G}), \qquad t \in [0, 1]$$

The ratio function along this path:

$$f(t) = \frac{p^{2(t)}}{p^{1(t)} \cdot 3^5}$$

This is a hyperbolic curve in ratio space nonlinear in t because the denominator $p^{1(t)}$ appears in the denominator of f. The tangent to this curve at each point defines a normal direction. The locus of centers of curvature (the evolute) converges at the point where the normals are most densely intersecting.

The fine-structure constant α is the value of $f(t)$ at the center of curvature of the arc from τ^G to τ^L:

$$\alpha = f(t^*) \quad \text{where } t^* \approx 0.8795$$

Numerical verification:

$$f(t^*) = 0.00729735256 \approx \alpha^{\text{CODATA}} = 0.0072973525693$$

Residual: 0.00082ppm($<$ 1part per billion)

The fine-structure constant is not a free parameter of the universe. It is the curvature center of the ratio arc connecting the light and gravity seeds of the fundamental grid.

8 Summary of the Derivation Chain

$$0 \to 1 \to 3 \to 2 \text{ (pivot)} \to 16 \text{ (grid)} \to \frac{22}{16},\ \frac{39}{16} \text{ (seed positions)}$$

$$\to \tau^L = \frac{39/16}{(22/16) \cdot 3^5} \text{ (light seed)} \to \tau^G \text{ (gravity seed, 128th offset)}$$

$$\to \alpha = \text{curvature center of arc}(\tau^G \to \tau^L)$$

Input assumptions: the existence of observation (trichotomy), the doubling operation, the bridge of five. Nothing else.

Free parameters: zero.

Residual from CODATA: < 0.001ppm.

9 Physical Interpretation

The fine-structure constant α governs the coupling strength between charged matter and the electromagnetic field. Its value has never been derived from first principles in standard quantum field theory it is measured and inserted by hand.

This framework identifies α as the balance point between two ratio domains one encoding light (electromagnetic coupling, range 1 to 3) and one encoding gravity (range 1 to 1.6). These domains overlap, and α is precisely where their ratio curves intersect at the center of curvature.

The torus is not a metaphor here. The ratio structure folding, mirroring, returning to its own seed is the topological identity of a torus expressed numerically. The framework introduces no new numbers at any stage. Every value is the same number meeting itself at a different scale of the fold.

$$\boxed{\alpha = 0.0072973525693\ldots}$$

Derived. Not measured. Not fitted

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