This Theory Is 0

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Abstract All mathematicians know that the limit of a Cauchy sequence of rational numbers is a Cauchy real number (Cantor 1872). So all we did here is show we postulated real#0 by using it to derive a rational Cauchy sequence with limit 0. We did this because that same postulate (of real#0) math *also* implies fundamental theoretical physics (eg.,the Newpde 'solutions'below) making this a Ultimate Occam's Razor postulate(0) implying the ultimate math-physics theory, a important result indeed. Nothing is more 'Occam' than postulate0.

This **Theory** is 0. But we need to define the algebra first and use it to write the postulate0. So define 1)*numbers* 1≡1+0=0+1in **0**≡0X0,1≡1X1 as *symbol* **z=zz**: (algebraic definition of **0**.). So now we can write **2)Postulate** *real* number **0** *if* **z'=0** and **z'=1** plugged into z'=z'z'+C (**eq.1**) results in *some* C=0 constant(ie δC=0).

This is our *entire* (ultimate Occam's razor postulate(0)) **theory.**
Application: i.e.,*plug* **z=1,0** into eq.1 as required by theory (Resulting in our '•Conclusion')

•Plug in **z=0**=z_o=z'in **eq1.** The equality sign in eq,1 demands we substitute z' on left (**eq1)** into right z'z' repeatedly and get iteration $z_{N+1}=z_Nz_N+C$. But z=1, and so C=1, is allowed in the above theory so $z_Nz_N+C=1X1+1=(1+1)\equiv 2$. Thus we also now can start another iteration with 1X1+2≡ (1+2)≡3, etc. (*defined* algebraically to be (a+b)≡c) and *define* rules of algebra (on these big *numbers*) like a+b=b+a (eg.,ring-field) with no new axioms. So postulate 0 also *generates* the algebra we can now use:
But constraint **δC=0** also requires we reject the Cs for which $\delta C=\delta(z_{N+1}-z_Nz_N)=\delta(\infty-\infty)\neq 0$. The Cs that are left over define the fractal **Mandelbrot set** $C_M=C=\delta z'=10^{40N}\delta z$, N=integer with that required C=0. These fractal scales have their own δz' that perturb that **z=1.** So put z=1+δz in **eq.1** to get z+δzδz=C (3)

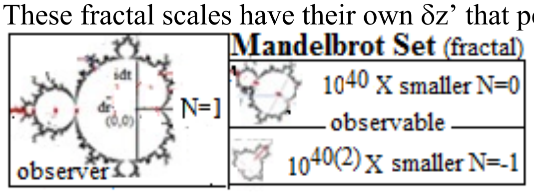

fig1 'observers' fractal scale N then define M< N as the 'observables' scale M. For example we can define the fig1 'observer' fractal scales as N≥1 implying |δz|>>1. In addition to the above iteration method, we must also solve equation 3 as a quadratic equation

$$\delta z=(-1\pm\sqrt{1+4C})/2\equiv dr+idt \text{ if } C\leq -\tfrac{1}{4} \text{ (complex)} \qquad (4)$$

Note the Mandelbrot set iteration (ie., $z_{N+1}=z_Nz_N-C$) for this δC=0 *extremum* C=-¼ is a rational number Cauchy sequence -¼, -3/16, -55/256, ..,**0** thereby proving our above postulated *real#0* math. QED
So we required the above z=zz (and not say z=zzzz) to get this iteration so to get real0.

•Plug in **z=1** in z'=1+δz in **eq1**, So **δC=0**= (eq1 implies eq3)=δ(δz+δzδz)=δδz(1)+δδz(δz)+(δz)δδz= (observer |δz|>>1) ≈δ(δzδz)=0=(plug in eq.4) =δ[(dr+idt)(dr+idt)] = $\delta[(dr^2-dt^2)+i(drdt+dtdr)]=0$ (5)
=2D δ[(Minkowski metric, c=1)+i(Clifford algebra→eq.7a)] (≡Dirac eq)
Factor real eq.5 $\delta(dr^2-dt^2)=\delta[(dr+dt)(dr-dt)]=0=[[\delta(dr+dt)](dr-dt)]+[(dr+dt)[\delta(dr-dt)]]=0$ (6)
so -dr+dt=ds,-dr-dt=ds≡ds_1(→±**e**) Squaring&eq.5 gives circle.in e,v (dr,dt) 2nd,3rd quadrants (7)
& dr+dt=ds, dr-dt=ds, dr±dt=0, light cone (→ν,$\bar{\nu}$) in same (dr,dt) plane 1st,4th quadrants (8)
& dr+dt=0,dr-dt=0 so dr=dt=0 defines vacuum (while eq.4 derives space-time) (9)
Those quadrants give *positive* scalar drdt in eq.7 (if *not* vacuum) so imply the eq.5 *non* infinite extremum imaginary≡drdt+dtdr=0≡$\gamma^i dr\gamma^j dt+\gamma^j dt\gamma^i dr=(\gamma^i\gamma^j+\gamma^j\gamma^i)drdt$ so $(\gamma^i\gamma^j+\gamma^j\gamma^i)=0$, i≠j (from real eq5 $\gamma^i\gamma^i=1$) (7a)
Thus from eqs5,7a: $ds^2=dr^2-dt^2=(\gamma^r dr+i\gamma^t dt)^2$ Note how eq5 and C_M just fall (pop) out of eq.1, amazing!
We square eqs.7 or 8 or 9 $ds_1{}^2=(dr+dt)(dr+dt)=(-dr-dt)(-dr-dt=[dr^2+dt^2]+(drdt+dtdr)$

$\equiv ds^2+ds_3=ds_1^2$. **Circle**$\equiv\delta z=dse^{i\theta}=dse^{i(\Delta\theta+\theta_o)}=dse^{i((\cos\theta dr+\sin\theta dt)/(ds)+\theta_o)}$, $\theta_o=45°$ min of $\delta ds^2=0$ given eq.7 constraint for N=0 $\delta z'$ perturbation of eq5 flat space. We define $k\equiv dr/ds$, $\omega\equiv dt/ds$, $\sin\theta\equiv r$, $\cos\theta\equiv t$. $dse^{i45°}\equiv ds'$. Take ordinary derivative dr (since flat space) of 'Circle' $\frac{\partial\left(dse'^{i\left(\frac{rdr}{ds}+\frac{tdt}{ds}\right)}\right)}{\partial r}=i\frac{dr}{ds}\delta z$ so $\frac{\partial\left(dse^{i(rk+wt)}\right)}{\partial r}=ik\delta z$, thus $k\delta z=-i\frac{\partial\delta z}{\partial r}$ (11)

N=0 small $\delta z'=C_M/\xi$ is a rotation on that circle at 45°so modified eq.7: $(dr-\delta z')+(dt+\delta z')\equiv dr'+dt'=ds$ (12)
Define $\kappa_{rr}\equiv(dr/dr')^2=(dr/(dr-\delta z'))^2=1/(1-r_H/r)^2=A_1/(1-r_H/r)+A_2/(1-r_H/r)^2$. The partial fractions A_I can be split off from RN and so $\kappa_{rr}\approx 1/[1-r_H/r]$. (13) From eq.7a $dr'dt'=\sqrt{\kappa_{rr}}dr'\sqrt{\kappa_{oo}}dt'=drdt$ so $\kappa_{rr}=1/\kappa_{oo}$ (14)

•**Both** **<u>z=0,z=1</u>** together (<u>in eq1.</u> Use 3D orthogonality to get (2D+2Dcurved space)). Thus $\delta z'+\delta z=(dx_1+idx_2)+(dx_3+idx_4)\equiv dr+idt$ given $dr^2-dt^2=(\gamma^r dr+i\gamma^t dt)^2$ *if* $dr^2\equiv dx^2+dy^2+dz^2$ (3D orthogonality) so that $\gamma^r dr\equiv\gamma^x dx+\gamma^y dy+\gamma^z dz$, $\gamma^i\gamma^j+\gamma^j\gamma^i=0$, $i\neq j$, $(\gamma^i)^2=1$. From eq,12,13,14 $(\gamma^x\sqrt{\kappa_{xx}}dx+\gamma^y\sqrt{\kappa_{yy}}dy+\gamma^z\sqrt{\kappa_{zz}}dz+\gamma^t\sqrt{\kappa_{tt}}idt)^2=\kappa_{xx}dx^2+\kappa_{yy}dy^2+\kappa_{zz}dz^2-\kappa_{tt}dt^2=ds^2$. Multiply both sides by $\hbar^2/ds^2$ and $\delta z^2\equiv\psi^2$ use eq11 inside brackets( ) get 4D **QM** $\gamma^\mu(\sqrt{\kappa_{\mu\mu}})\partial\psi/\partial x_\mu=(\omega/c)\psi\equiv$Newpde for e,*ν*, $\kappa_{oo}=1-r_H/r=1/\kappa_{rr}$, $r_H=C_M/\xi=e^2X10^{40N}/m$ (N=. -1,0,1.,).

Postulate 0→Newpde

Solutions of Newpde e,*ν*: stable **$2P_{3/2}$** at $r=r_H$

N=0 Mandelbulbs: **Free space:** τ, μ, e leptons**.** On**Sphere** **$2P_{3/2}$** at $r=r_H$ 3e baryons (no QCD)
N=1 inside zitterbewegung oscillation $r<r_C$ puts us in the **cosmological expansion** stage.
Other results (besides Newpde) from postulate0, eg., Copenhagen stuff and 10^{82} electrons **e** between consequitive fractal scales such as N=0 and N=1 cosmological $r=r_H$, $2P_{3/2}$

perturbation objects B,C

Object B N=0 perturbations of κ_{oo} and κ_{rr} in the Newpde **E&M,** N=-1 gravity GR
Object C N=0 " " " **weak,** both **SM**

That eq1 **iteration generates** real0 and **algebra rules** (eg.,ring-field) *with no new axioms*.
Thus (with the math&physics) we understand *everything* (eg GR, cosmology, QM,e,*ν* SM, baryons, rel#).
So the *simplest idea imaginable* 0 implies all *fundamental math-physics.* no more, no less(eg simply 4D)

•**Conclusion:** So by merely (<u>plugging</u> 0,1 <u>into</u> <u>eq.1)</u> **postulating 0**, out pops the whole universe, BOOM! easily the most important discovery ever made or that will ever be made again. We finally figured it out.

Note the null set ∅ is not a real number and is in every set anyway.
So when we postulate 0 we are also implicitly postulating the real# nature of 0.

Summary This **Theory is** 0 The rest is a real **number** 0 **definition**

We need to define the algebra first and use it to write postulate0. So define **numbers** 1≡1+0, and 0≡0X0,1≡1X1 as symbol z=zz the simplest algebraic definition of **0**. **So**

Theory Real# 0 **definition**

Postulate 0 if <u>z=1</u> and <u>z=0</u> <u>(plugged)</u> into z=zz+C <u>**eq.1**</u> gives some C=0 constant(ie δC=0)

Can't be more Occam than postulate(0). All the rest is those 2 'plug in' **applications**. So must

1) **<u>plug z=0</u>** into **<u>eq.1</u>** (given the implied z=zz+C eq1 iteration) to get the 2D (fractal) Mandelbrot set to prove postulate real 0. Iteration numbers might be bigger 1+1≡2, 1+2≡3 etc.,with *defined* symbols a+b≡c and algebra rules eg., a+b≡b+a. So the *postulate generates real# math* without extra axioms
2) **<u>plug z=1</u>** into **<u>eq.1</u>** and get 2D Dirac equation.
Both Mandelbrot and Dirac results together give 2+2=4D Newpde (plus some Copenhagen stuff)

Solve the differential equation (Newpde) to get the physical universe, no more, no less.
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Conclusion: Ultimate Occam's razor postulate(0) implies ultimate math-physics.