

Postulate 1

and **define limit 1** ($\equiv 1 \pm \text{error}$)

abstract Let Occam be your guide to get physics top down, So startout simplest with **Postulate 1**
The simplest algebraic definition of **1** is $z=zz$ so **limit 1** is **defined** as $z=zz+C$ for small constant C
'small' defined as $\|C\| \ll 1$,

Solution of $z=zz$ is $z=1,0$

'constant' defined as $\delta C=0$

Postulate 1 (i.e., $z=zz$) requires *some* $C=0$ (so $z=1,0 = z'$) in the solution set of $z'=z'z'+C$ (**eq1**)
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$z=0 = z_0 = z'$ To find *all* C substitute z' on left (**eq.1**) into right $z'z'$ repeatedly and get iteration
 $z_{N+1} = z_N z_N - C$. Constraint $\delta C=0$ requires we reject the Cs for $-\delta C = \delta(z_{N+1} - z_N z_N) = \delta(\infty - \infty) \neq 0$. The Cs
that are left over define the **Mandelbrot set** C_M . eg., $\delta z' = 10^{40N} \delta z$, $N=1$ fractal scale (\equiv observer).
 $z=1$ in $z'=1+\delta z$ in **eq.1** get $\delta z + \delta z \delta z = C$ (3) so $\delta z = (-1 \pm \sqrt{1 + 4C})/2 = dr + idt$ if $C < -1/4$ (**complex**) (4)

$z=1$ in $z'=1+\delta z$ in **eq1** gives for *required* $N=1$ (so $|\delta z| \gg 1$) and $\delta C=0 = \delta(\delta z + \delta z \delta z) = \delta \delta z (1 + \delta z)$
 $+ \delta \delta z (\delta z) + (\delta z) \delta \delta z \approx \delta(\delta z \delta z) = 0$ (plug in eq.4) $= \delta[(dr + idt)(dr + idt)] = \delta[(dr^2 - dt^2) + i(dr dt + dt dr)] = 0$ (5)
 $= 2D$ (**Minkowski metric, c=1**) $+ i$ (**Clifford algebra** \rightarrow **eq.7a**) (\equiv Dirac eq)

Factor eq.5 **real** $\delta(dr^2 - dt^2) = \delta[(dr + dt)(dr - dt)] = 0 = [\delta(dr + dt)](dr - dt) + (dr + dt)[\delta(dr - dt)] = 0$ (6)

so $-dr + dt = ds, -dr - dt = ds \Rightarrow ds_1 (\rightarrow \pm e)$ 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 ($\rightarrow v, v$) in **same** e, v (dr, dt) plane 1st, 4th quadrants (8)

& $dr + dt = 0, dr - dt = 0$ so $dr = dt = 0$ defines vacuum (9)

Quadrants give *positive* scalar $dr dt$ of eq.7 (if *not* vacuum) imply the eq.5 *non* infinite extremum
imaginary $\equiv dr dt + dt dr = 0 \equiv \gamma^i dr \gamma^j dt + \gamma^j dt \gamma^i dr = (\gamma^i \gamma^j + \gamma^j \gamma^i) dr dt$ so $(\gamma^i \gamma^j + \gamma^j \gamma^i) = 0, i \neq j$ (from **releq4** $\gamma^i \gamma^i = 1$) (7a)

Thus from eqs 5, 7a: $dr^2 - dt^2 = (\gamma^r dr + i \gamma^t dt)^2$

Both $z=0, z=1$ together using orthogonality to get (2D+2D curved space). Thus $(z=1) + (z=0) =$
 $(dx_1 + i dx_2) + (dx_3 + i dx_4) \equiv dr + idt$ given $dr^2 - dt^2 = (\gamma^r dr + i \gamma^t dt)^2$ if $dr^2 \equiv dx^2 + dy^2 + dz^2$ (orthogonality) so that
 $\gamma^r dr \equiv \gamma^x dx + \gamma^y dy + \gamma^z dz, \gamma^i \gamma^i + \gamma^j \gamma^j = 0, i \neq j, (\gamma^i)^2 = 1$, rewritten (with curved space $\kappa_{\mu\nu}$ from eq 7a $\kappa_{00} = 1/\kappa_{rr}$)
 $(\gamma^x \sqrt{\kappa_{xx}} dx + \gamma^y \sqrt{\kappa_{yy}} dy + \gamma^z \sqrt{\kappa_{zz}} dz + \gamma^t \sqrt{\kappa_{tt}} dt)^2 = \kappa_{xx} dx^2 + \kappa_{yy} dy^2 + \kappa_{zz} dz^2 - \kappa_{tt} dt^2 = ds^2$. Multiply both sides by
 $1/ds^2$ and $\delta z^2 \equiv \psi^2$ use circle $-i \partial \delta z / \partial r = (dr/ds) \delta z$ inside brackets () get $4D \gamma^\mu (\sqrt{\kappa_{\mu\mu}}) \partial \psi / \partial x_\mu = (\omega/c) \psi$
 \equiv **Newpde** for $e, v, \kappa_{00} = 1 - r_H/r = 1/\kappa_{rr}, r_H = e^2 X 10^{40N} / m$ ($N = -1, 0, 1, \dots$). Also $C_M / \xi = r_H = \text{small } C$ so big $\xi = \gamma$
boost so $z=zz$ so **postulate 1**. So we really did just postulate 1. So **Postulate 1** \rightarrow **Newpde**

Applications of $N=0$ $r=r_H$: **Newpde** composite $3e$ $2P_{3/2}$ state = baryons and the 4 **Newpde** e, v
(quadrant) rotations are the 4 W^+, γ, W^-, Z_0 , SM Bosons. Also $N=-1$ is GR & big $\gamma = \xi = \tau + \mu$ from C_M
So "postulate 1" gives **eq1** (i.e., all of physics) and **real#math**, everything. See davidmaker.com

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Algebraic definition of 1 is $z=zz$ so **limit 1** is **defined** as $z=zz+C$ for small constant C

'small' defined as $\|C\| \ll 1$

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solution to $z=zz$: $z=1,0$

Postulate 1 ($z=zz$) requires some $C=0$ so $z=1,0$ equals some z' in $z'=z'z'+C$ (**eq1**) (use $\delta C=0$)

So plug $z=1,0$ into **eq1**

so $z=0$

into **eq1** iteration (to get all C) get 2D **Mandelbrot** (fractal scale N)

$z=1$

into **eq1** get 2D **Dirac** ($(N=1) \equiv$ observer)

both

4D **Newpde** using orthogonalization (with small C implied)

Summary

eq1 so

$z=0$

$z=1$

both

(so it is just eq1) therefore

postulate 1 \rightarrow **Newpde**

(So we get all of physics (davidmaker.com) and 1U algebra and Real#math (1 iteration is Cauchy) **everything** that is physical and nothing else.)

