

## Postulate 1 and **define limit1** ( $\equiv 1 \pm \text{uncertainty}$ )

abstract Let Occam be your guide to get physics top down, So startout simplest with **Postulate1**

The simplest algebraic definition of 1 is  $z=zz$  so **define limit 1** as  $z=zz+C$  for small constant  $C$

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

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

solution of  $z=zz$  is  $z=1, 0$ ;

**Postulate1** ( 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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so  $\mathbf{z=0}=z_0=z'$  To find *all*  $C$  substitute  $z'$  on left (eq.1) into right  $z'z'$  repeatedly and get iteration  $z_{N+1}=z_Nz_N-C$ . Constraint  $\delta C=0$  requires we reject the Cs for  $-\delta C=\delta(z_{N+1}-z_Nz_N)=\delta(\infty-\infty)\neq 0$ . 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)

$\mathbf{z=1}$  in  $z'=1+\delta z$  in eq1 gives for *required*  $N=1$  (so  $|\delta z| \gg 1$ ) and  $\delta C=0=\delta(\delta z+\delta z\delta z)=\delta\delta z(1)+\delta\delta z(\delta z)+(\delta z)\delta\delta z\approx\delta(\delta z\delta z)=0$ =(plug in eq.4)= $\delta[(dr+idt)(dr+idt)]=\delta[(dr^2-dt^2)+i(drdt+dt dr)]=0$  (5)  
 $=2D$  (Minkowski metric,  $c=1$ )+i(Clifford algebra→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  $-dr+dt=ds$ ,  $-dr-dt=ds=ds_1(\rightarrow \pm e)$  Squaring&eq.5 gives circle.in e,v (dr,dt) 2<sup>nd</sup>,3<sup>rd</sup> quadrants (7)

&  $dr+dt=ds$ ,  $dr-dt=ds$ ,  $dr\pm dt=0$ , light cone ( $\rightarrow v, v$ ) in same e,v (dr,dt) plane 1<sup>st</sup>,4<sup>th</sup> quadrants (8)

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

Quadrants give *positive* scalar drdt of eq.7 (if *not* vacuum) imply the eq.5 *non* infinite extremum imaginary $\equiv drdt+dt dr=0\equiv\gamma^i dr^j dt + \gamma^j dt^i dr = (\gamma^i \gamma^j + \gamma^j \gamma^i) drdt$  so  $(\gamma^i \gamma^j + \gamma^j \gamma^i)=0$ ,  $i \neq j$ (from reeq4  $\gamma \gamma^i=1$ )(7a)

Thus from eqs5,7a:  $dr^2-dt^2=(\gamma^i dr^i + i \gamma^j dt^j)^2$

**Both  $z=0, z=1$**  together using orthogonality to get (2D+2D curved space). Thus  $(z=1)+(z=0)=(dx_1+idx_2)+(dx_3+idx_4)\equiv dr+idt$  given  $dr^2-dt^2=(\gamma^i dr^i + i \gamma^j dt^j)^2$  if  $dr^2\equiv dx^2+dy^2+dz^2$  (orthogonality) so that  $\gamma^i dr\equiv \gamma^x dx + \gamma^y dy + \gamma^z dz$ ,  $\gamma^i \gamma^j + \gamma^j \gamma^i=0$ ,  $i \neq j$ ,  $(\gamma^i)^2=1$ , rewritten ( $\kappa_{ii}$  from  $N=0$   $C_M$  perturbationof  $N=1$  eq.7)  $(\gamma^x \sqrt{\kappa_{xx}} dx + \gamma^y \sqrt{\kappa_{yy}} dy + \gamma^z \sqrt{\kappa_{zz}} dz + \gamma^t \sqrt{\kappa_{tt}} idt)^2 = \kappa_{xx} dx^2 + \kappa_{yy} dy^2 + \kappa_{zz} dz^2 - \kappa_{tt} dt^2 = ds^2$ . Multiply both sides by  $1/ds^2$  and  $\delta z^2 \equiv \psi^2$  use circle  $-i\partial\delta z/\partial r = (dr/ds)\delta z$  inside brackets() get  $4D \gamma^\mu (\sqrt{\kappa_{\mu\mu}}) \partial \psi / \partial x_\mu = (\omega/c) \psi \equiv \text{Newpde}$  for  $e, v, \kappa_{\mu\mu} = 1 - r_H/r = 1/\kappa_{rr}$ ,  $r_H = e^2 X 10^{40N}/m$  ( $N = -1, 0, 1, ..$ ). 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 → Newpde**

**Applications** of  $N=0$   $r=r_H$ : **Newpde** composite 3e 2P<sub>3/2</sub> state = baryons and the 4 **Newpde**  $e, v$  (quadrant)rotations are the 4  $W^+, \gamma, W^-, Z_0$ , 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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**define limit1** Algebraic definition of 1 is  $z=zz$  so **limit 1** is **defined** as  $z=zz+C$  for small constant  $C$

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

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

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

**Postulate 1** ( $z=zz$ ) requires *some*  $C=0$  (so  $z=1, 0 = z'$ ) in the solution set of  $z'=z'z'+C$  (**eq1**)

So plug  $z=1, 0$  into **eq1** (use  $\delta C=0$ )

so  $\mathbf{z=0}$

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

$\mathbf{z=1}$

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**

(it is just **eq1**)

therefore

**postulate 1 → 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.