This exploratory is a crossover from Big Space, aka Classic Physics, and my philosophical incursion into 21^{st} century nuclear level Quantum Space. My symbolic math tools, GeoGebra and Wolfram. My informed mentors, Wikipedia and Google; and my home computer. Pretty heady 21^{st} century stuff, destined to get better, for all humankind if self-inflicted mass-extinction can be avoided.

CSDA Curved space analytics linking Classic Big Space with Quantum nuclear parametric constructions.	October 18, 2022
How far a regression toward micro-space can macro space displacement integers fall?	Let the boundary of our two infinities be the unit circle. Let this boundary be known as a surface acceleration curve. A curved space hard fall limit, denying Big Space displacement integer(s) a continued regression across surface acceleration into Quantum Space Micro Infinity.

Pages 20, words 2800.

Answer to the abstract question how far regression can macro space travel? Point(A) of a crossover triangle holds the answer to the question. Point A connects Galileo's 1st second spacetime tile with his incline plane. Regression can be no futher than impact terminal velocity.

Point(A) also collects three mechanical energy lines and curves providing square space definition of an S&T(2) (M_1M_2) happening. Rest energy, registration, and potential. I Reference rest energy as action and reaction in two space-time squares. Galileos S&T(1) 'stuck to the surface' uniform acceleration ; and Sir Isaac Newton's S&T(2), Geosynchronous Orbits, a changing acceleration sphere of influence. Born of Galileo's first second tile and Descartes Analytic Coordinate Geometry (with SBG enhanced parametrics), these lines and curves work together as stable definition of two central force Mechanical Energy happenings, gravity and nuclear.

Parametric meter of falling across multiple (M_1M_2) gravity field average energy curves of (M_2) orbits, from average energy orbit to average energy orbit, is a basic 1st year Calculus Step Function enjoying pre-ordained rest stops for (M_2) free fall until terminal impact with (M_1) surface acceleration.

Rest energy is the horizontal part of a step function. To fall 'down' energy curves of an (M_1M_2) system, we 'slide' down the vertical bookends each side of rest. Let the verticals be half steps down or up spin axis range reaching average energy plateaus of each SpaceCurve plying as Sir Isaac Newton $(M_2)'s$ average curve of orbit on a central force number line domain.

Rest energy parametric inverse solution curve: $\left(t, \frac{t^0}{-2} + \frac{SC(\#)}{2}\right)$ where the term(SC) are central force domain SpaceCurves, provide a fall of half step increments on a spin axis range for each orbit collected by (M_1). To read inverse square orbit displacement of Sir Isaac Newton's average energy orbit curve of displacement; $(SC(\#) - 1 = OrbitCurve(\#))$.

Let surface acceleration fields be surface curves of (M_1)'s ExistenceSpace. (M_1) surface curves serve as the great divide of our infinities, BigSpace and SmallSpace. Penetration requires inversion of our logic and reason to visit QuantumSmall, and a return inverse of reason and logic to once again walk (M_1) terra firma of our being.

Why is this important? Because, it provides a parametric limit on chaotic mechanical freefall across the number line domain of central force **F** accretion space. Provides a certainty of capture by next level average energy orbit, a half step 'down' or 'up' spin range, using connected plateaus of average orbit energy curves to 'jump' SpaceCurve to SpaceCurve arriving at (M_1) surface acceleration. Now, for the philosophy of penetration, falling across nuclear accretion space of a collective mass/volume surface acceleration curve, aka (M_1).

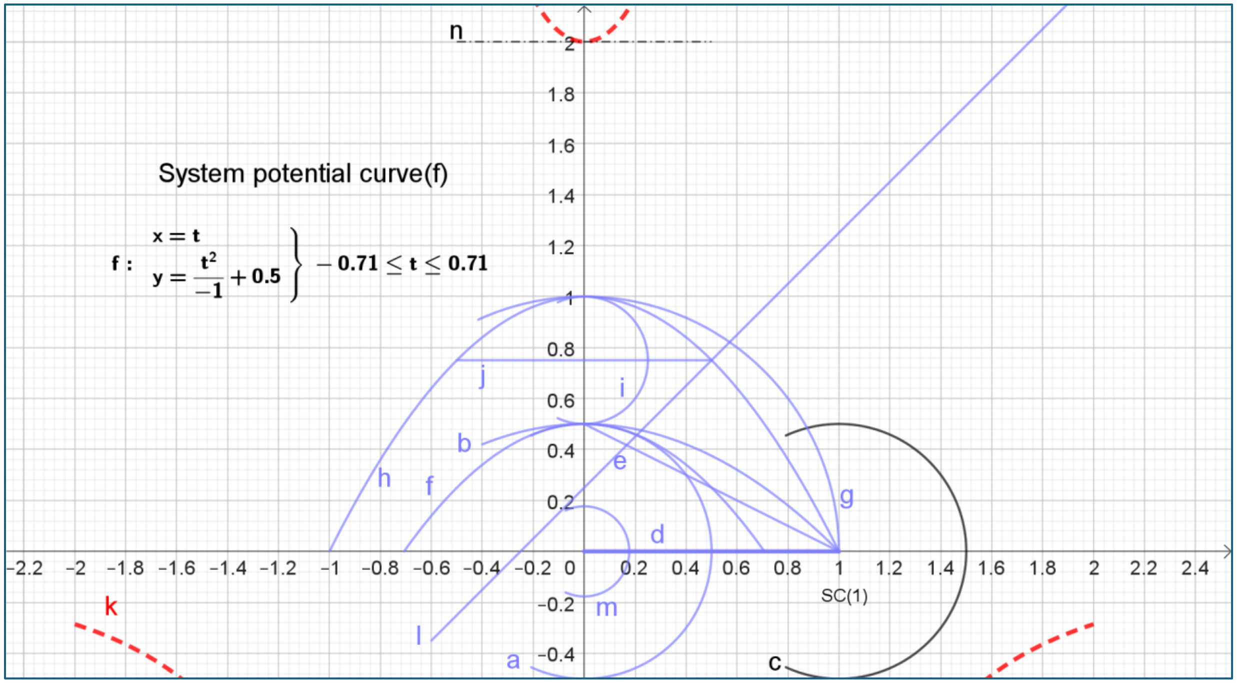

Figure 1: protium rest, registration, and potential index solution curves($d, e, and\ f$) are captured *below* SPAC(g) surface acceleration of (M_1) aka SpaceCurve(1). Curve(g) is hybrid as SPAC big space and ecloud Z#(1) quantum space.

Let me begin with a backward 'walk' from Quantum world curved space to proportionally relative arithmetic curves and lines of ClassicBig.

Let this be a protium map finding proton curve(a) beneath surface acceleration of SpaceCurve#(1), curve(g)

Love acronyms, so here I go!

First up: source primitive surface acceleration curve(g): (SPSAC) aka SpaceCurve(1). Dealing with SPAC SC#(1). Above is macro-Infinity, below is micro-Infinity.

Let curve(c) be closed average energy neighborhood of SpaceCurve(1). Making curve(g) hybrid, working both sides of infinity as Z#(1) ecloud and curved space domain as SpaceCurve(1). Light blue lines and curves are micro infinity happenings. Black is reserved for macro space happenings.

SpaceCurve(1) curve(g) sets infinity boundaries. It's the only analytic hybrid I know of. Serves both beasts, quantum world and BigSpace, as changeling resident in both microspace and macro space. It is the reason I need two colors for my CSDA analytic machine. One above and one below. Master of heaven and master of hell. I used small case for heaven. This heaven is imagined by the human mind, filled with irrational fear generated by prehistoric neurons still existing in our brain stem. We create our own masters from hell. No, this is not the Heaven I hope to find at the end of my earthly time.

I have two more discoveries made with excursions across both worlds. I have learned how to invert curved space itself. That's curve(k) main body solution curve locked between index solution of protium potential curve(f) asymptotes; found at range($+2$), as approach and crush limits of *protium's* central force ($\boldsymbol{F}$), metered on spin range by discovery(a) curvature evaluation. The other discovery? Curved Space Mobius spin of time. I'll lay out a number field using integer(2) and four forms of exponent(2) allowing inversed curved space manipulation of time as the degree(2) square space property we know.

SpaceCurve(1), Z#(1) and inversed degree(2) potential curves

ALΣXANDΣR

Name	Description	Caption
Curve a	Curve(0.5cos(t), 0.5sin(t), t, -2, 2); quantum proton	Discovery curve: $\left(\frac{SC(1)}{2}\cos(t), \frac{SC(1)}{2}\sin(t)\right)$
Curve c	Curve(0.5cos(t) + 1, 0.5sin(t), t, -2, 2)	Closed neighborhood average energy SC(1)
Curve b	Curve(t, t^2 / -2 + 0.5, t, -0.4, 1)	Definition curve for SC(1) period time curve(b)
Curve d	Curve(t, t^0 / -2 + 0.5, t, 0, 1)	Proton rest energy: $\left(t, \frac{t^0}{-2} + \frac{SC}{2}\right)$ Central force domain numberline. A limit on beginning space and temperature cold? No limit on time?
Curve e	Curve(t, t^1 / -2 + 0.5, t, 0, 1)	electron field registration with proton. $\left(t, \frac{t^1}{-2} + \frac{SC}{2}\right)$
Curve g	Curve(cos(t), sin(t), t, -0.01, 2)	Protium electron cloud, Z#(1). surface acceleration curve SC(1). A true hybrid

Curve h	Curve(t, t^2 / -1 + 1, t, -1, 1)	Binding parabola. electron cloud with protium nucleus: $\left(t, \frac{t^2}{-SC(1)} + (SC(1))\right)$
Curve i	Curve(0.25cos(t), 0.25sin(t) + 0.75, t, -2, 2)	Neighborhood(p) binding parabola(h)
Curve j	Curve(t, 0.75, t, -0.5, 0.5)	Latus rectum binding parabola
Curve f	Curve(t, t^2 / -1 + 0.5, t, -sqrt(0.5), sqrt(0.5))	System potential protium proton: $\left(t, \frac{t^2}{-1} + \frac{SC}{2}\right)$
Curve k	Curve(t, $(t^2 / -1 + 0.5)^{-1}$, t, -2, 2)	Inverse of curved space by inverse of potential curve (dependent part)$^{-1}$
Curve l	Curve(t, (1 + 4t) / 4, t, -0.6, 2)	Energy tangent normal link with like element bond plane
Curve m	Curve$\left(\frac{1}{4\sqrt{2}}\cos(t), \frac{1}{4\sqrt{2}}\sin(t)\right)$, t, -2, 2)	Binding energy of nucleus

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Hello times up.

SpaceCurve(2), Z#(2), OrbitCurve(1)

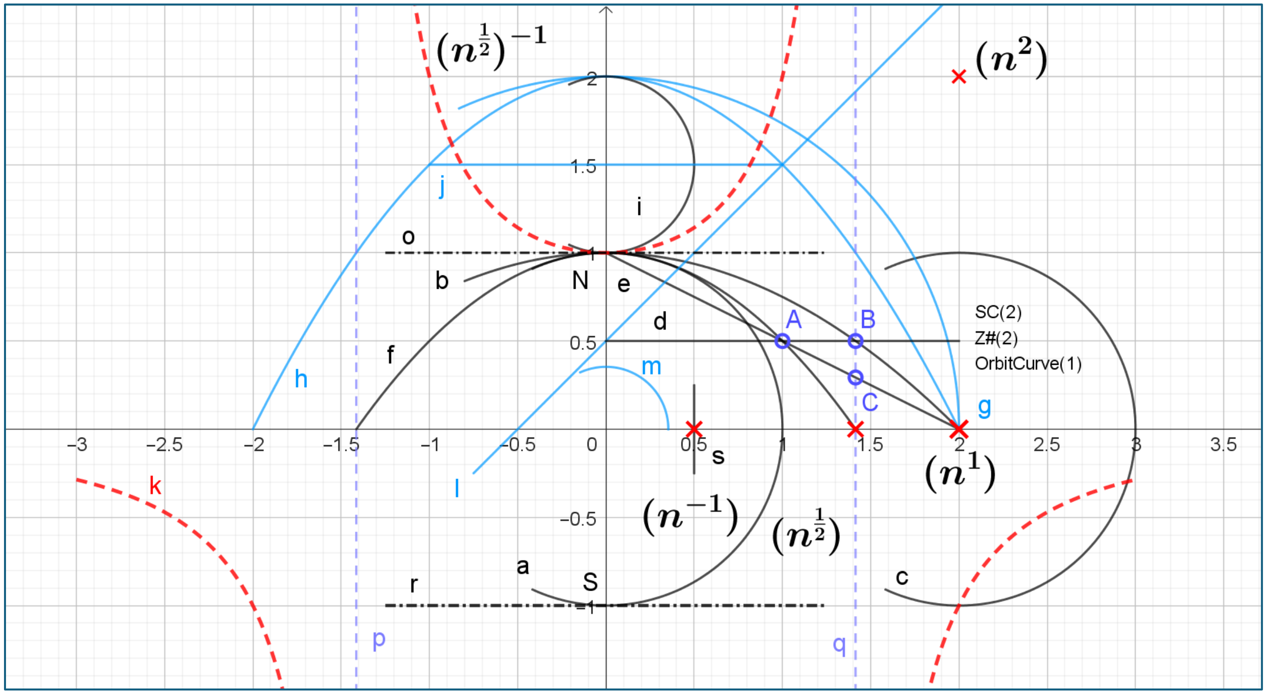

Figure 2: introducing SpaceCurve#(2), nucleus existence space Z#(2) and (M_1) potential OrbitCurve(1), hybrid discovery curve(a)

Note, Protium lacked transfer CrossOver triangles. I now begin to use them for SC#(2) and above.

Let natural integers work Central Force Field number line as SC(#)'s.

Let exponent operation

$\left(n^2, n^1, n^{\frac{1}{2}}\right)$ on integer(2), SpaceCurve(2), be resultant terms belonging with SquareSpace macro-infinity leaving $\left(n^{-1}, and\ \left(n^{\frac{1}{2}}\right)^{-1}\right)$ as CurvedSpace resultants in micro-infinity.

I select integer(2) to be (n^1) and using only index(1) and index(2). I set(n^2) and corral a section of SquareSpace to do with as I please. A degree$(2, n * n)$ block of SquareSpace units. Or, I can simply lay claim and establish (n^1) as a zone for an average energy radius endpoint using accretion properties of curve(c).

Too effect central force accretion energy curves, I use *two* inverse connections. One will be curvature and its radius and one will be our go-to inverse square, a degree(2) potential curve. We have$\left(n^1, n^2, n^{-1}, and\ n^{\frac{1}{2}}\right)$.

I have one more discovery for you to muse over. That is the inverse of curved space. It's a strange beast. Comes from deep space. Borrows one of our curves from antiquity using asymptotes to lock mainbody solution curves of index(2), and utilizing positive and negative mainbody solution spirit curves on *other side* of asymptotes to explain central force mechanical energy happenings. Phase transition of quantum nuclear fields and I suspect mass/volume nuclear/molecular collective uses same spirit curves presenting accretion phenomena of G-fields. At best, what was once a closed neighborhood of curved space micro Infinity, now become open as infinities are meant to be, stretching inversed potential of CurvedSspace back into SquareSpace capturing sequential integer#(2) on the central force domain and squaring sequential second#(2) on the range of time. Completing Galileo's 1st second spacetime tile.

SpaceCurve(2), Z#(2), OrbitCurve(1)

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1	Curve a	Curve(cos(t), sin(t), t, -2, 2)	discovery curve SC(2)
2	Curve c	Curve(cos(t) + 2, sin(t), t, -2, 2)	Closed neighborhood average energy SC(2)
3	Curve g	Curve(2cos(t), 2sin(t), t, 0, 2)	E cloud Z#(2)
4	Curve h	Curve(t, t^2 / -2 + 2, t, -2, 2)	binding parabola ecloud Z#(2)
5	Curve i	Curve(0.5cos(t), 0.5sin(t) + 1.5, t, -2, 2)	close neighbourhood(p) binding parabola(h)
6	Curve j	Curve(t, 1.5, t, -1, 1)	latus rectum binding parabola(h)
	Curve(k)	$\left(t, (\frac{t^2}{-2} + 1)^{-1}\right)$	Inversed curve space potential of SC#(2)
7	Curve f	Curve(t, t^2 / -2 + 1, t, -sqrt(2), sqrt(2))	potential systems SC(2) control period time curve orbit(1)
8	Curve e	Curve(t, t^1 / -2 + 1, t, 0, 2)	registration orbit(1) with M1 spin

9	Curve b	Curve(t, t² / -4 + 1, t, -0.8, 2)	period time curve for orbit(1)
11	Curve l	Curve(t, (1 + 2t) / 2, t, -0.75, 3)	etan normal connection to like element bond plain
12	Curve m	Curve $\left(\frac{1}{2\sqrt{2}}\cos(t), \frac{1}{2\sqrt{2}}\sin(t)\right)$	binding energy of the nucleus for Z#(2)
13	Curve d	Curve(t, t⁰ / -2 + 1, t, 0, 2)	Rest energy orbit(1) or period time curve(b)
4	Point A		Crossover S&T(2) orbit curve(1). Link with Galileo S&T(1) algebraic 1st second tile
15	Point B		crossover linking system potential with motive energy on period time curve(b).
17	Point C		crossover
18	Curve p	Curve(-sqrt(2), t, t, -3, 3)	asymptote
19	Curve q	Curve(sqrt(2), t, t, -3, 3)	asymptote
20	Curve o	Curve(t, 1^{-1}, t, -1.25, 1.25)	Positive curvature limit (curvature evaluation discovery(a)
21	Curve r	Curve(t, -1, t, -1.25, 1.25)	negative curvature limit
27	Curve s	Curve(0.5, t, t, -0.25, 0.25)	Abscissa ID curvature value orbit curve(1) average energy
28	Point D		intersect E tangent normal with positive side latus rectum binding parabola

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SpaceCurve(3), Z#(3), OrbitCurve(2)

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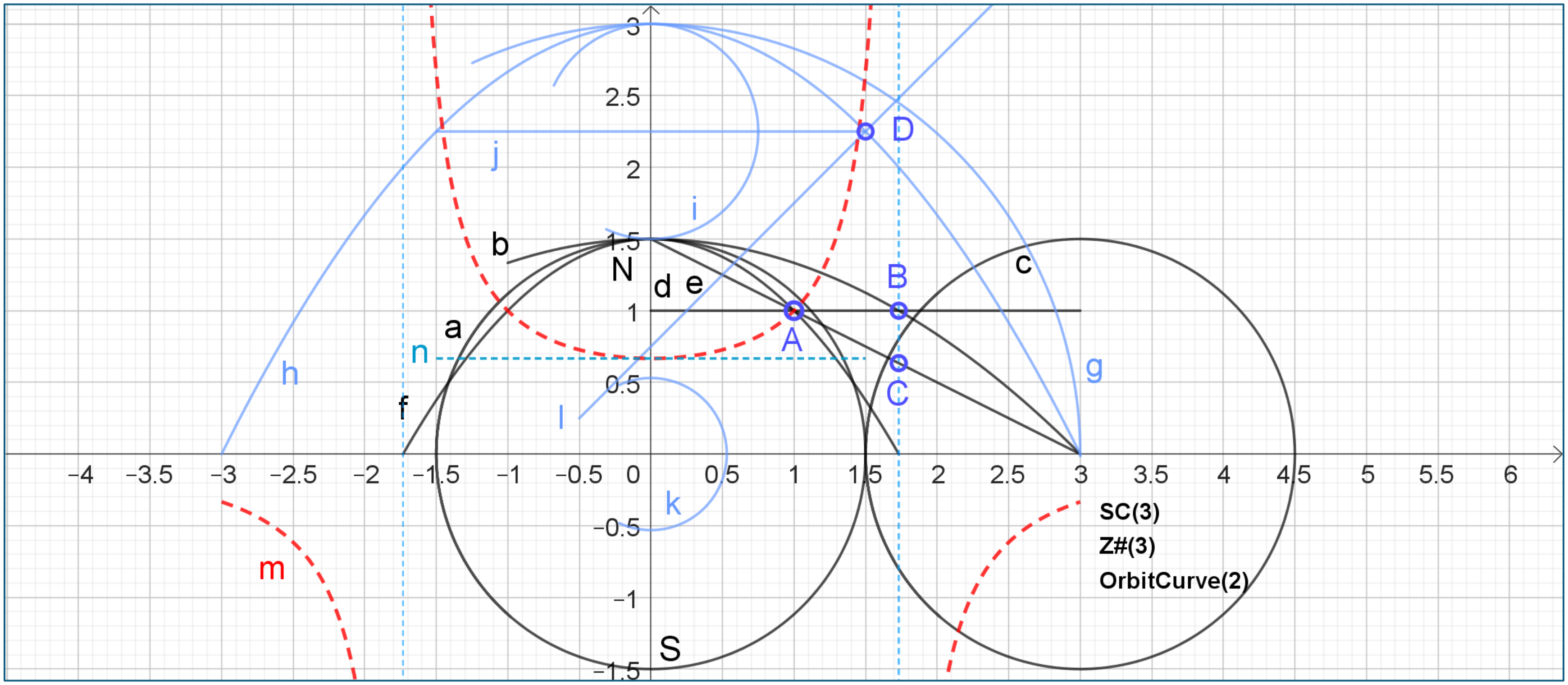

Figure 3: introducing SpaceCurve#(3), nucleus existence space. $Z\#(3)$ and (M_1) potential OrbitCurve(2), hybrid discovery curve(a).

inverse SC#(3) QSpace

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name	Description	Caption
Curve a	Curve(1.5cos(t), 1.5sin(t), t, -4, 4)	Discovery SC(3). Existence space Z#(3) nucleus
Curve c	Curve(1.5cos(t) + 3, 1.5sin(t), t, -4, 4)	Definition closed neighborhood average energy SC(3)
Curve b	Curve(t, t^2 / -6 + 1.5, t, -1, 3)	Period time curve SC(3) control orbit curve(2)
Curve d	Curve(t, t^0 / -2 + 3 / 2, t, 0, 3)	Rest energy SC(3) orbit curve(2)
Curve e	Curve(t, t^1 / -2 + 3 / 2, t, 0, 3)	Registration orbit curve(2) with (M_1) spin
Curve f	Curve(t, t^2 / -2 + 3 / 2, t, -sqrt(3), sqrt(3))	(M_1) potential. SC(3) control orbit(2)
Curve g	Curve(3cos(t), 3sin(t), t, -0.01, 2)	Ecloud lithium, Z#(3)
Curve h	Curve(t, t^2 / -3 + 3, t, -3, 3)	Binding parabola ecloud with Z#(3) nucleus curve(a)
Curve i	Curve(0.75cos(t), 0.75sin(t) + 2.25, t, -2, 2.7)	Closed neighborhood(p) binding parabola
Curve j	Curve(t, 2.25, t, -1.5, 1.5)	Latus rectum binding parabola(h)

Curve k	Curve $\left(\frac{3}{4\sqrt{2}}\cos(t), \frac{3}{4\sqrt{2}}\sin(t)\right)$)	Z#(3) nucleus(a) Binding energy curve(k)
Curve l	Curve(t, (3 + 4t) / 4, t, -0.5, 2.5)	Etanormal connection with like element bond plane.
Point A		Crossover S&T(2) orbit curve(2). Link with Galileo S&T(1) algebraic 1st second tile
Point B		crossover linking system potential with motive energy on period time curve(b).
Point C		crossover
Point D		Intercept binding parabola latus rectum and etangent normal
Curve m	Curve(t, $(t^2 / -2 + 3 / 2)^{-1}$, t, -3, 3)	Inversed curve space SC(3)
Curve n	Curve(t, 1.5^{-1}, t, -1.5, 1.5)	Crush limit of Z#(3) nucleus. Curvature of discovery(a)

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SpaceCurve(4), Z#(4), OrbitCurve(3)

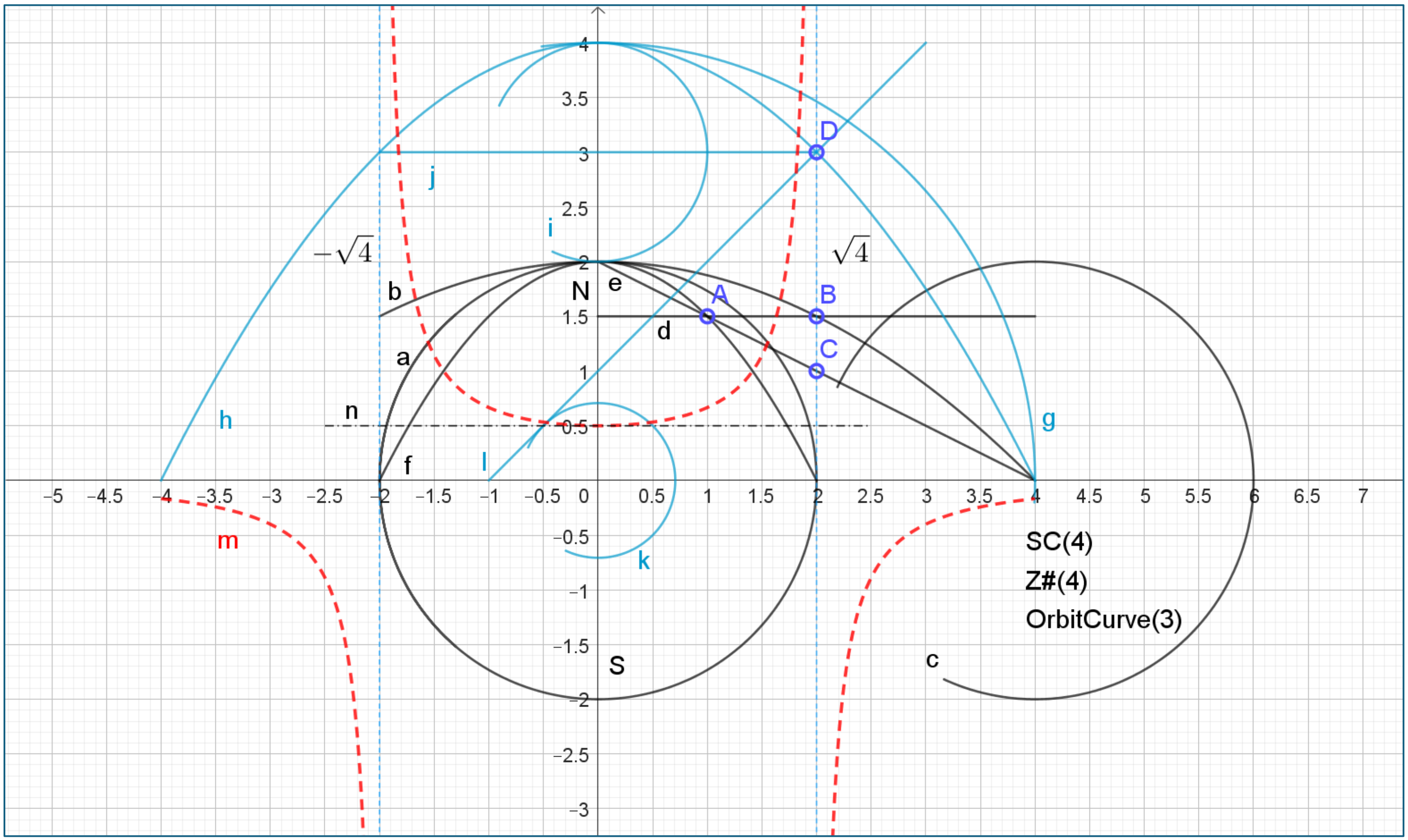

Figure 4 : introducing SpaceCurve#(4), nucleus existence space Z#(4) and (M_1) potential OrbitCurve(3), hybrid discovery curve(a).

hello time up!

inverse curved space SC#(4)

ALΣXANDΣR

Curve a	Curve(2cos(t), 2sin(t), t, -4, 4)	discovery
Curve c	Curve(2cos(t) + 4, 2sin(t), t, -2, 2.7)	Definition closed neighborhood average energy SC(4)
Curve b	Curve(t, t^2 / -8 + 2, t, -2, 4)	Period time orbitcurve(3) S&T(2)
Curve d	Curve(t, t^0 / -2 + 2, t, 0, 4)	Rest energy S&T(2) orbit curve(3)
Curve e	Curve(t, t^1 / -2 + 2, t, 0, 4)	Registration orbitcurve(3) with (M_1) spin
Curve f	Curve(t, t^2 / -2 + 2, t, -2, 2)	(M_1) potential. S&T(3&2)
Curve g	Curve(4cos(t), 4sin(t), t, -0.05, 1.7)	Ecloud Berillium, Z#(4)
Curve h	Curve(t, t^2 / -4 + 4, t, -4, 4)	Binding parabola ecloud with Z#(4) nucleus
Curve i	Curve(cos(t), sin(t) + 3, t, -2, 2.7)	Closed neighborhood(p) binding parabola
Curve j	Curve(t, 3, t, -2, 2)	Latus rectum binding parabola
Curve k	Curve$\left(\frac{1}{\sqrt{2}}\cos(t), \frac{1}{\sqrt{2}}\sin(t)\right)$	Z#(4) nucleus Binding energy curve
Curve l	Curve(t, 1 + t, t, -1, 3)	Etan normal connect with like element bond plane

Point A		Crossover S&T(2) orbit curve(3). Link with Galileo S&T(1) algebraic 1st second tile
Point B		Crossover S&T(2) period time curve ME orbit(3)
Point C		Crossover
Point D		Intercept binding parabola latus rectum and etangent normal
Curve m	Curve(t, $(t^2 / -2 + 2)^{-1}$, t, -4, 4)	Inversed curve space SC#(4)
Curve n	Curve(t, 2^{-1}, t, -2.5, 2.5)	Crush limit of Z#(4) nucleus. Curvature of discovery(a).

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SpaceCurve(5), Z#(5), OrbitCurve(4)

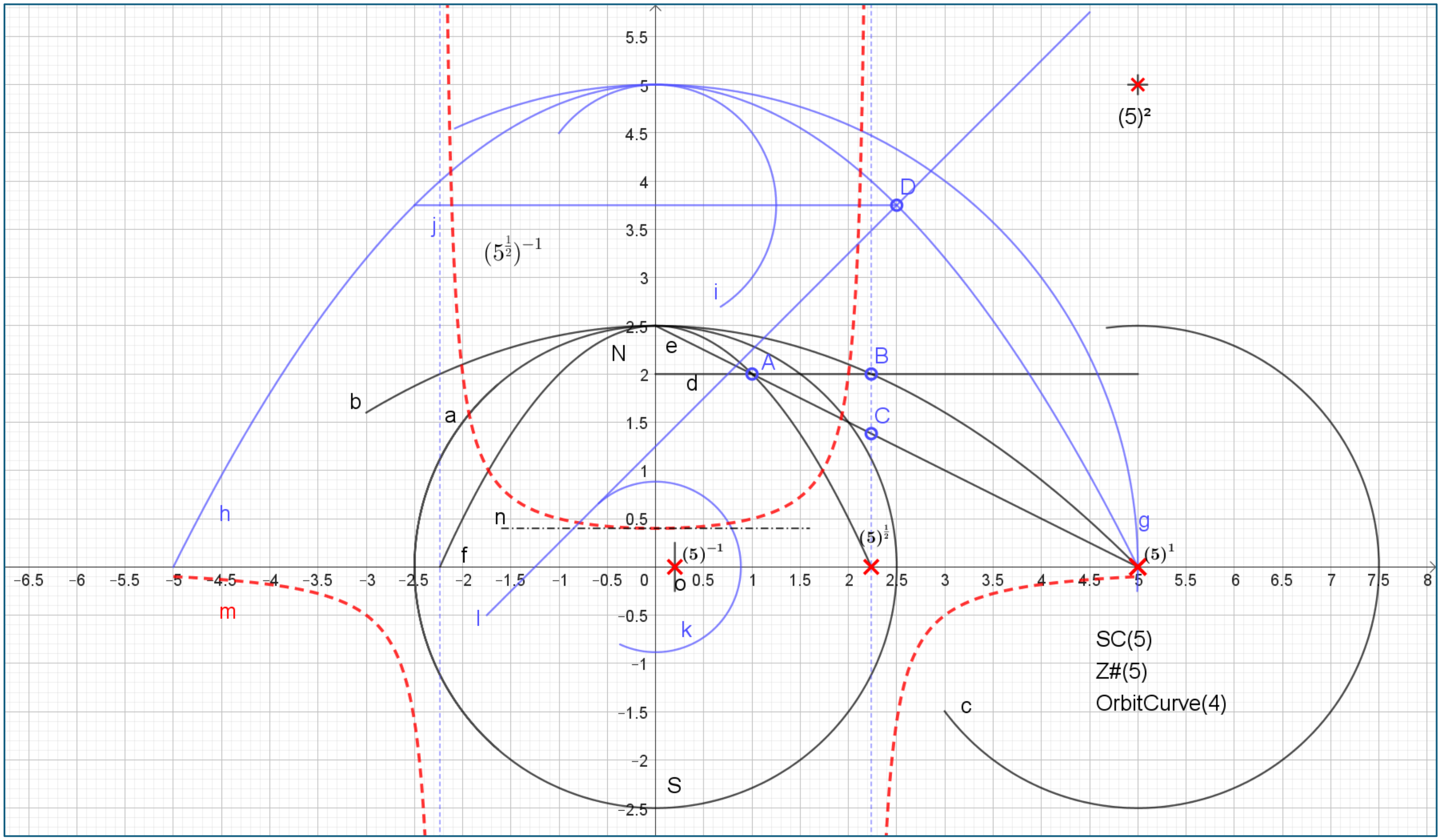

Figure 5: introducing SpaceCurve#(5), nucleus existence space Z#(5) and (M_1) potential OrbitCurve(4), hybrid curve(a).

inverse curved space SpaceCurve#(5)

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Name	**Description**	**Caption**
Curve a	Curve(2.5cos(t), 2.5sin(t), t, -4, 4)	discovery
Curve c	Curve(2.5cos(t) + 5, 2.5sin(t), t, -2.5, 1.7)	Definition closed neighborhood average energy SC(5)
Curve b	Curve(t, t^2 / -10 + 2.5, t, -3, 5)	Period time curve S&T(2), OrbitCurve(4)
Curve d	Curve(t, t^0 / -2 + 2.5, t, 0, 5)	Rest energy S&T(2) orbit curve(4)
Curve e	Curve(t, t^1 / -2 + 2.5, t, 0, 5)	Registration orbitcurve(4) with (M_1) spin
Curve f	Curve(t, t^2 / -2 + 2.5, t, -sqrt(5), sqrt(5))	(M_1) potential. S&T(3&2)
Curve g	Curve(5cos(t), 5sin(t), t, -0.05, 2)	Ecloud Boron, Z#(5)
Curve h	Curve(t, t^2 / -5 + 5, t, -5, 5)	Binding parabola ecloud with Z#(5) nucleus
Curve j	Curve(t, 3.75, t, -2.5, 2.5)	Latus rectum binding parabola(h)
Curve i	Curve(1.25cos(t), 1.25sin(t) + 3.75, t, -1, 2.5)	Closed neighborhood(p) binding parabola(h)
Curve k	Curve$\left(\frac{5}{4\sqrt{2}}\cos(t), \frac{5}{4\sqrt{2}}\text{csin}(t)\right)$, t, -2, 2.3)	Z#(5) nucleus binding energy curve

Point A		Crossover S&T(2) OrbitCurve(4). Link with Galileo S&T(1) algebraic 1st second tile
Point B		Crossover S&T(2) period time curve ME orbit(4)
Point C		Crossover
Point D		Intercept binding parabola latus rectum and etangent normal
Curve m	Curve(t, $(t^2 / -2 + 2.5)^{-1}$, t, -5, 5)	Inversed curve space SC#(5)
Curve n	Curve(t, 2.5^{-1}, t, -1.6, 1.6)	Crush limit of Z#(5) nucleus. Curvature of discovery(a).
Curve l	Curve(t, (5 + 4t) / 4, t, -1.75, 4.5)	Etan normal connect with like element bond plane

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SpaceCurve(6), Z#(6), OrbitCurve(5)

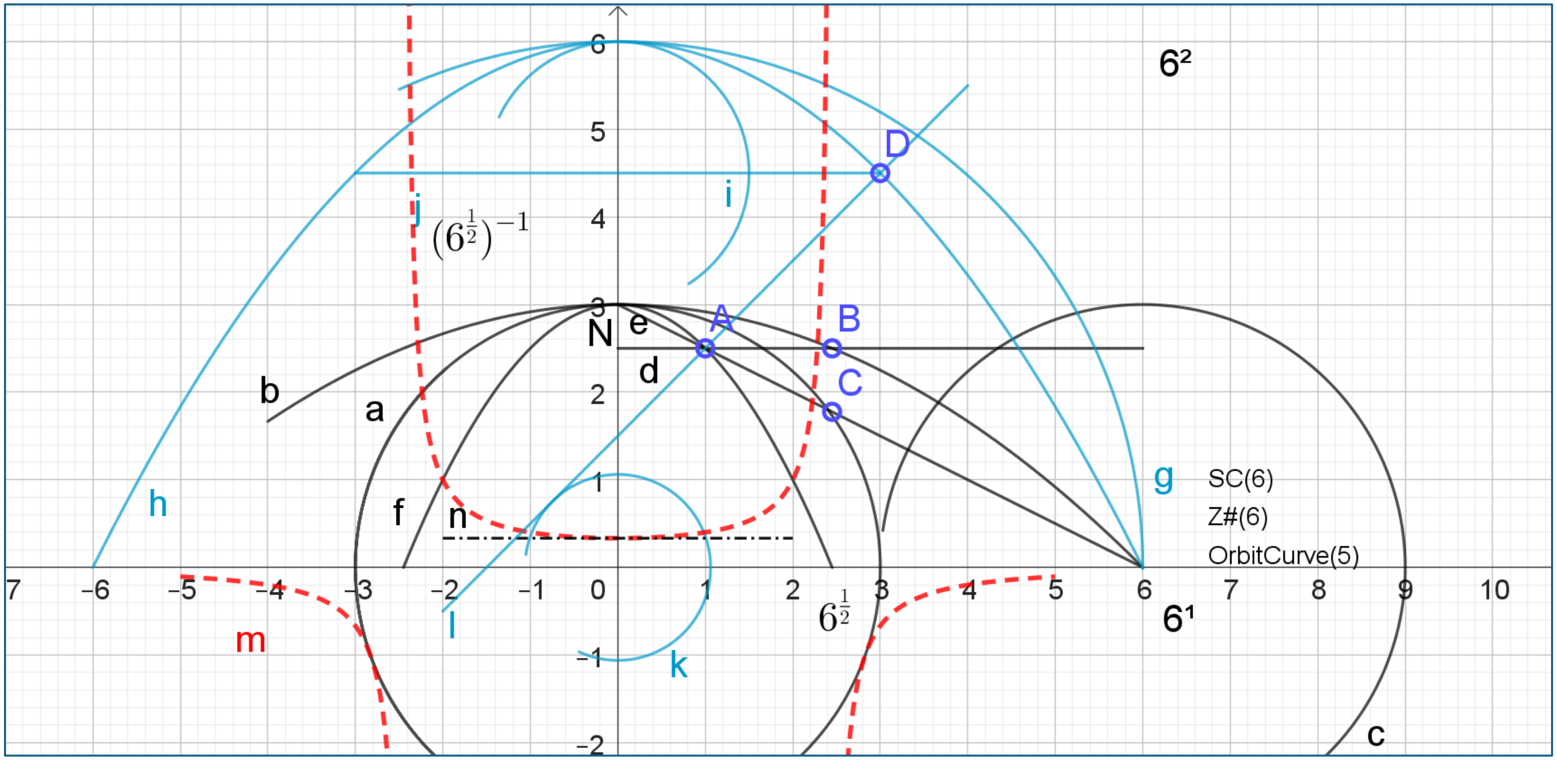

Figure 6: introducing SpaceCurve#(6), nucleus existence space Z#(6) and (M_1) potential OrbitCurve(5), hybrid curve(a).

time up

time up

inversed curved space Z#(6) Carbon

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Name	**Description**	**Caption**
Curve a	Curve(3cos(t), 3sin(t), t, -4, 4)	Discovery(a)
Curve c	Curve(3cos(t) + 6, 3sin(t), t, -2, 3)	Definition closed neighborhood average energy SC(6)
Curve b	Curve(t, t^2 / -12 + 3, t, -4, 6)	Period time curve S&T(2) OrbitCurve(5)
Curve d	Curve(t, t^0 / -2 + 3, t, 0, 6)	Rest energy S&T(2) orbit curve(5)
Curve e	Curve(t, t^1 / -2 + 3, t, 0, 6)	registration S&T(2) orbit curve(5) with spin
Curve f	Curve(t, t^2 / -2 + 3, t, -sqrt(6), sqrt(6))	(M_1) potential. S&T(3&2)
Curve g	Curve(6cos(t), 6sin(t), t, 0, 2)	Ecloud Carbon, Z#(6) Carbon
Curve h	Curve(t, t^2 / -6 + 6, t, -6, 6)	Binding parabola ecloud(h) with Z#(6) nucleus(a)
Curve i	Curve(1.5cos(t), 1.5sin(t) + 4.5, t, -1, 2.7)	Closed neighborhood(p) binding parabola(h)
Curve j	Curve(t, 4.5, t, -3, 3)	Latus rectum binding parabola(h)
Curve k	$\frac{3}{2\sqrt{2}}\cos(t), \frac{3}{2\sqrt{2}}\sin(t)$	Z#(6) nucleus Binding energy curve

Point A		Crossover S&T(2) orbit curve(5). Link with Galileo S&T(1) algebraic 1st second tile
Point B		Crossover S&T(2) period time curve ME orbit(5)
Point C		Crossover S&T(2) period time curve ME orbit(5)
Point D		Intercept binding parabola latus rectum and etangent normal
Curve m	Curve(t, $(t^2 / -2 + 3)^{-1}$, t, -5, 5)	Inverse curve space SC#(6)
Curve n	Curve(t, 3^{-1}, t, -2, 2)	Crush limit of Z#(6) nucleus. Curvature of discovery(a)
Curve l	Curve(t, (3 + 2t) / 2, t, -2, 4)	Etan normal connect with like element bond plane

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QED

Utility of a Unit Circle and Construct Function Unit Parabola may not be used without written permission of my publishing company Sand Box Geometry LLC Alexander, CEO and copyright owner. alexander@sandboxgeometry.com

The computer is my sandbox, the unit circle my compass, and the focal radius of the unit parabola my straight edge. Armed with these as weapon and shield, I go hunting Curved Space Parametric Geometry.

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC