May 31, 2022

The premise of the Poster is utility of a parametric solution curve definition for (index(0) of radicand(n). What happens when Parametric Solution Curves use an index operator to find roots of Sir Isaac Newton's displacement integer(s) captured as radicand of square space math.

$$\left(\sqrt[index]{radicand}\right).$$

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC

Central Force +domain integers and inversed exponents of curved space.	5/31/2022 5:04 AM

The meter of central force field cause and effect is called 'inverse square'. Essentially, we take a number line integer as displacement, change a central force interpretation of field displacement from radius into an inversed denominator $(curvature?)$. Then alter this meter of space into a degree2 curve analytics for cause and effect $(curvature^2?)$. This paper investigates discovery of Sir Isaac Newton's displacement radii behavior when captured as radicand (n) by indexed Parametric Solution Curve(s).

A study of displacement integer as radicand in central force field space: $\left(9^{\frac{1}{3}}\right), \left(9^{\frac{1}{2}}\right), \left(9^{\frac{1}{1}}\right), \left(9^{\frac{1}{0}}\right)$

June 14, 2022. 16 pages; 1600 words.

ABSTRACT:

On the parametric geometry of inverse(d) exponents.
Exponents are a straightforward operation $(number^{exponent})$. Roots have an alternate script and symbol. Given we know the $(3^3 = 27)$, we also recognize $(\sqrt[3]{27} = 3)$. But not so often used is the written exponent for $(\sqrt[3]{27})$; $\left(27^{\frac{1}{3}} = 3\right)$.
There are three elements in the parametric geometry of roots: index; radical; and radicand. $\sqrt[index]{radicand}$.
We never include the index when writing square roots. The unused term for square root of 4 is: $(\sqrt[2]{4} = 2)$. <u>*Or*</u> $\left(4^{\frac{1}{2}}\right)$.
We also have seldom seen exponents. $(n^0 = 1)$; $(n^1 = n)$
Setting these exponents $(0\ and\ 1)$ as radical index:
$(\sqrt[1]{n}) = n$, and $(\sqrt[0]{n}) = (1/0\ \leftrightarrow\ indeterminate\ infinity\ encountered)$.
This paper uses a GeoGebra parametric machine to find the $(\sqrt[0]{n})$, losing the (indeterminate infinity encountered) tag.

Abstract history:

Abstract rejected as Contributed Paper; organizers recommend Contributed Poster Session.

Sponsor: Philosophy of Mathematics SIGMAA (POM-SIGMAA)
Organizers:
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Tom Morley, Georgia Institute of Technology, Morley@math.gatech.edu

Players and reference: $(\sqrt[index]{integer})$. Let index be curved space Mechanical Energy causality. Let integer be metered displacement in field space. Let $\left(G * M_1 * M_2 * \left(\frac{1}{r}\right)^2\right)$ be cause and effect of G-field potential.

The Poster: Size is 3ft by 4ft. Here's the outline.

The top 1 foot will be a banner (page3) 4ft across.

THE PARAMETRIC GEOMETRY of INVERSED EXPONENTS WORKING CENTRAL FORCE DOMAINS

Exploring: $\left(9^{\frac{1}{3}}\right), \left(9^{\frac{1}{2}}\right), \left(9^{\frac{1}{1}}\right), \left(9^{\frac{1}{0}}\right)$

PROBLEM: construct four parametric solution curves using inverse exponents.

Curved Space Parametric Solution: $\left(t, \frac{t^{index}}{\mp 2} \pm \frac{radicand}{2}\right)$.

Confirm solution curve using Square Space Parametric Abscissa ID: $\left(\sqrt[index]{9}, t\right)$.

The bottom 2ft will be in 4 sections 1ft across.

Sect1	Sect2	Sect3	Sect4
$\left(9^{\frac{1}{3}}\right)$	$\left(9^{\frac{1}{2}}\right)$	$\left(9^{\frac{1}{1}}\right)$	$\left(9^{\frac{1}{0}}\right)$

$\left(9^{\frac{1}{3}}\right)$, page (5-6)

$\left(9^{\frac{1}{2}}\right)$, page (7-8)

$\left(9^{\frac{1}{1}}\right)$, page (9-10)

$\left(9^{\frac{1}{0}}\right)$, page (11-12)

Parametric geometry construction for $\left(\sqrt[3]{9}\right)$.   ALΣXANDΣR

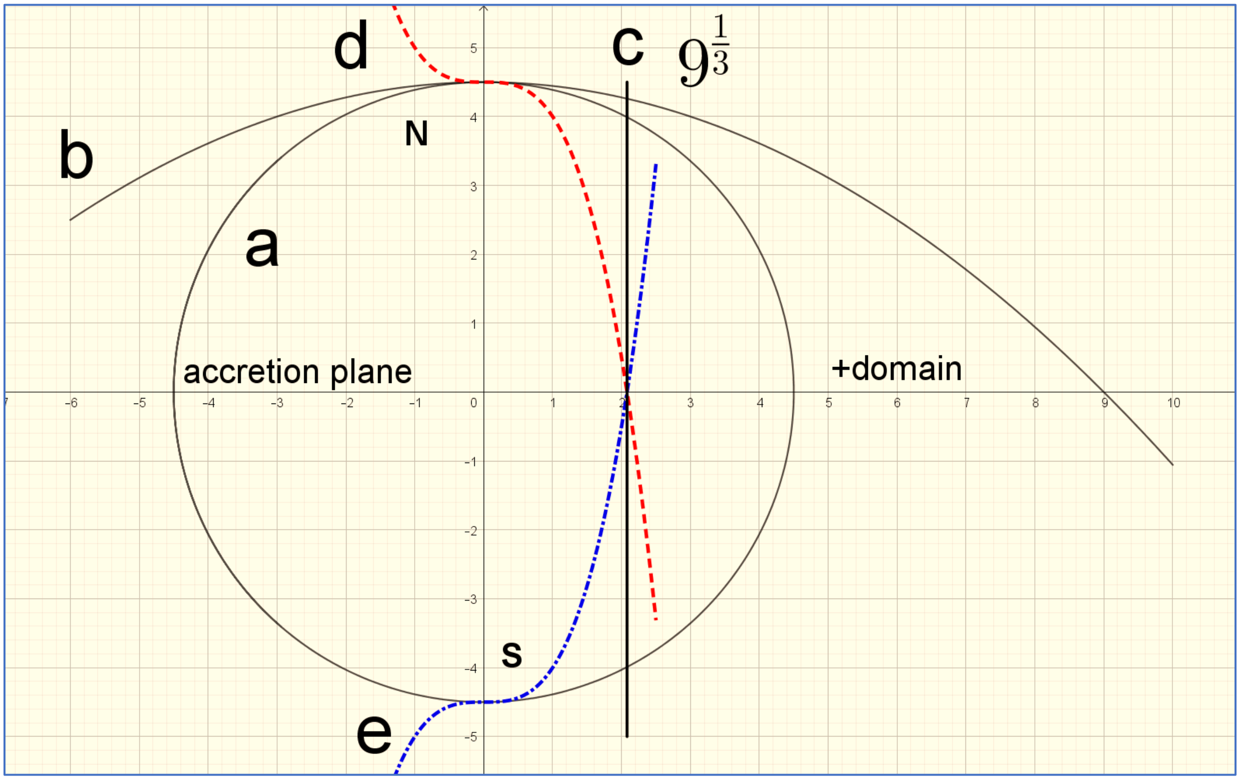

Figure 1: *parametric geometry* $\left(9^{\frac{1}{3}}\right)$.

Name	Value	Caption
Curve a	(4.5cos(t), 4.5sin(t))	Independent curve (AKA discovery curve).
Curve b	(t, t^2 / -18 + 9 / 2)	Dependent curve (AKA definition curve).
Curve c	(2.08, t)	abscissa definition $\sqrt[3]{9}$.
Curve d	(t, t^3 / -2 + 9 / 2)	(−) solution curve.

Curve e	(t, t^3 / 2 - 9 / 2)	(+) solution curve.

Created with GeoGebra

odd indices:

$(-)$ solution (d) comes from $Q2$ infinity. Flat lines at **N** pole and finds $\left(\sqrt[3]{9}\right)$ on accretion domain of (M_1).

$(+)$ solution curve (e) comes from $Q3$ infinity. Flat lines at **S** pole and finds $\left(\sqrt[3]{9}\right)$ on accretion domain of (M_1).

Parametric geometry construction for $\left(\sqrt[2]{9}\right)$.   ALΣXANDΣR

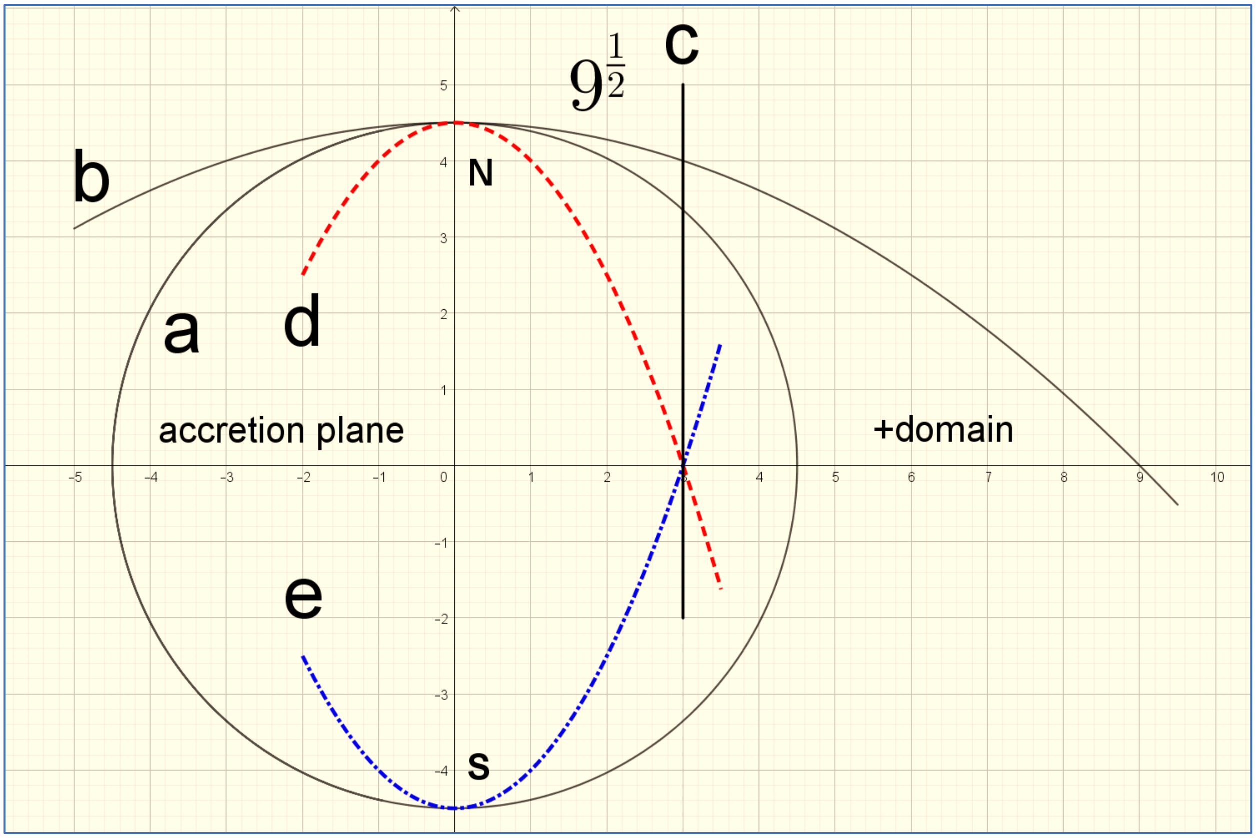

Figure 2*: parametric geometry for $\left(9^{\frac{1}{2}}\right)$.*

Name	Value	Caption
Curve a	(4.5cos(t), 4.5sin(t))	Independent curve (AKA discovery curve).
Curve b	(t, t^2 / -18 + 4.5)	Dependent curve (AKA definition curve).
Curve c	(3, t)	Abscissa definition $\left(\sqrt[2]{9}\right)$.
Curve d	(t, t^2 / -2 + 9 / 2)	$(-)$ solution curve.

Curve e	(t, t^2 / 2 - 9 / 2)	$(+)$ solution curve.

Created with GeoGebra

Parametric geometry construction for $(\sqrt[2]{9})$.

even indices:

$(-)$ solution (d) comes from $Q3$ infinity. Flat lines at **N** pole and finds $(\sqrt[2]{9})$ on accretion domain of (M_1).

$(+)$ solution curve (e) comes from $Q2$ infinity. Flat lines at **S** pole and finds $(\sqrt[2]{9})$ on accretion domain of (M_1).

Parametric geometry construction for $\left(\sqrt[1]{9}\right)$.   ALΣXANDΣR

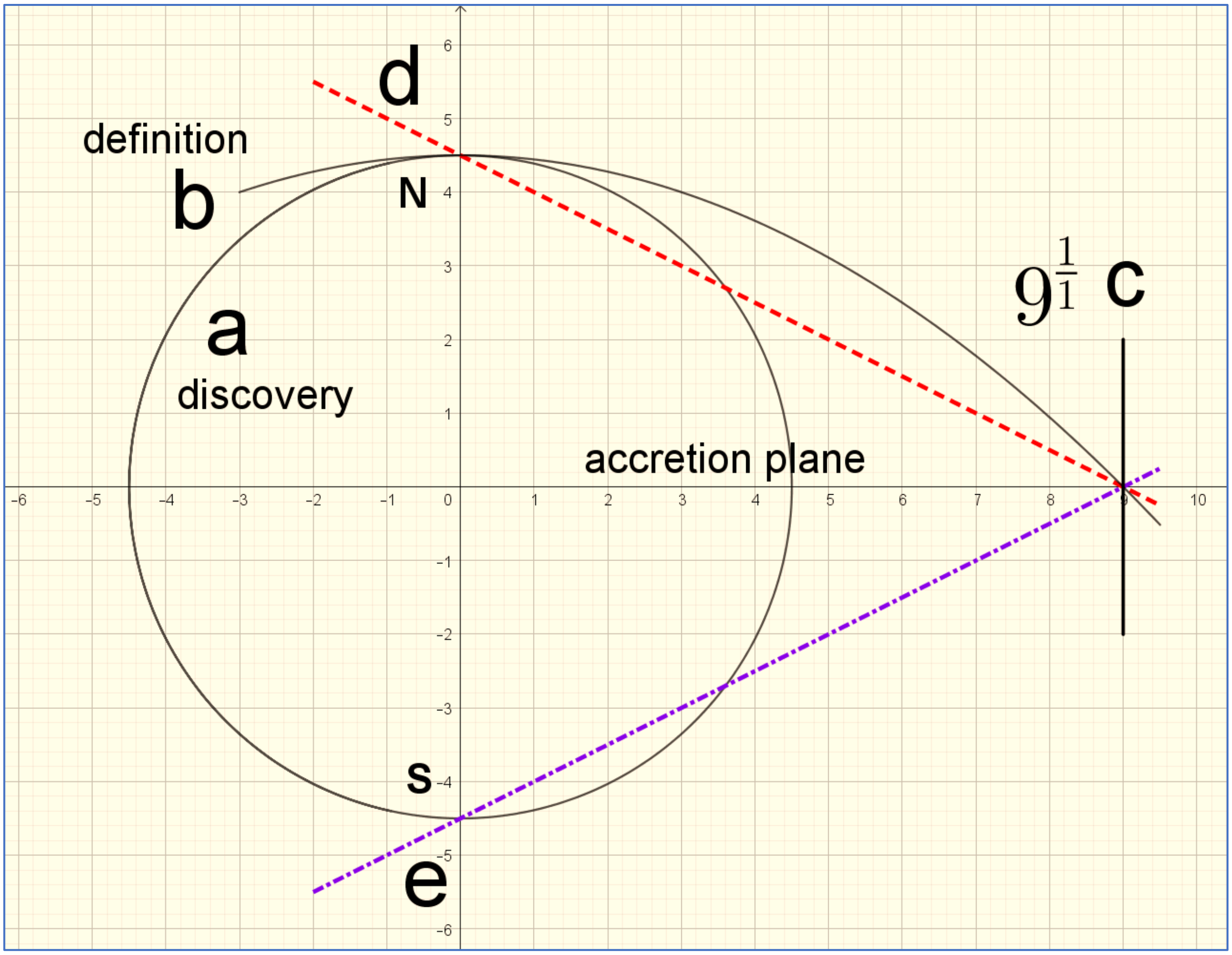

Figure 3: *parametric geometry* $\left(9^{\frac{1}{1}}\right)$.

Name	Value	Caption
Curve a	(4.5cos(t), 4.5sin(t))	Independent curve (AKA discovery curve).
Curve b	$(t, t^2 / -18 + 4.5)$	Dependent curve (AKA definition curve).
Curve c	(9, t)	Abscissa definition $\left(\sqrt[1]{9}\right)$.
Curve d	$(t, t^1 / -2 + 4.5)$	$(-)$ solution curve
Curve e	$(t, t^1 / 2 - 9 / 2)$	$(+)$ solution curve

Created with GeoGebra

Parametric geometry construction for $\left(\sqrt[1]{9}\right)$.

odd indices:

$(-)$ solution (d) comes from $Q2$ infinity. Passes through **N** pole and finds $\left(\sqrt[1]{9}\right)$ on accretion domain of (M_1).

$(+)$ solution curve (e) comes from $Q3$ infinity. Passes through **S** pole and finds $\left(\sqrt[1]{9}\right)$ on accretion domain of (M_1).

Parametric geometry construction for $\left(\sqrt[0]{9}\right)$.   ALΣXANDΣR

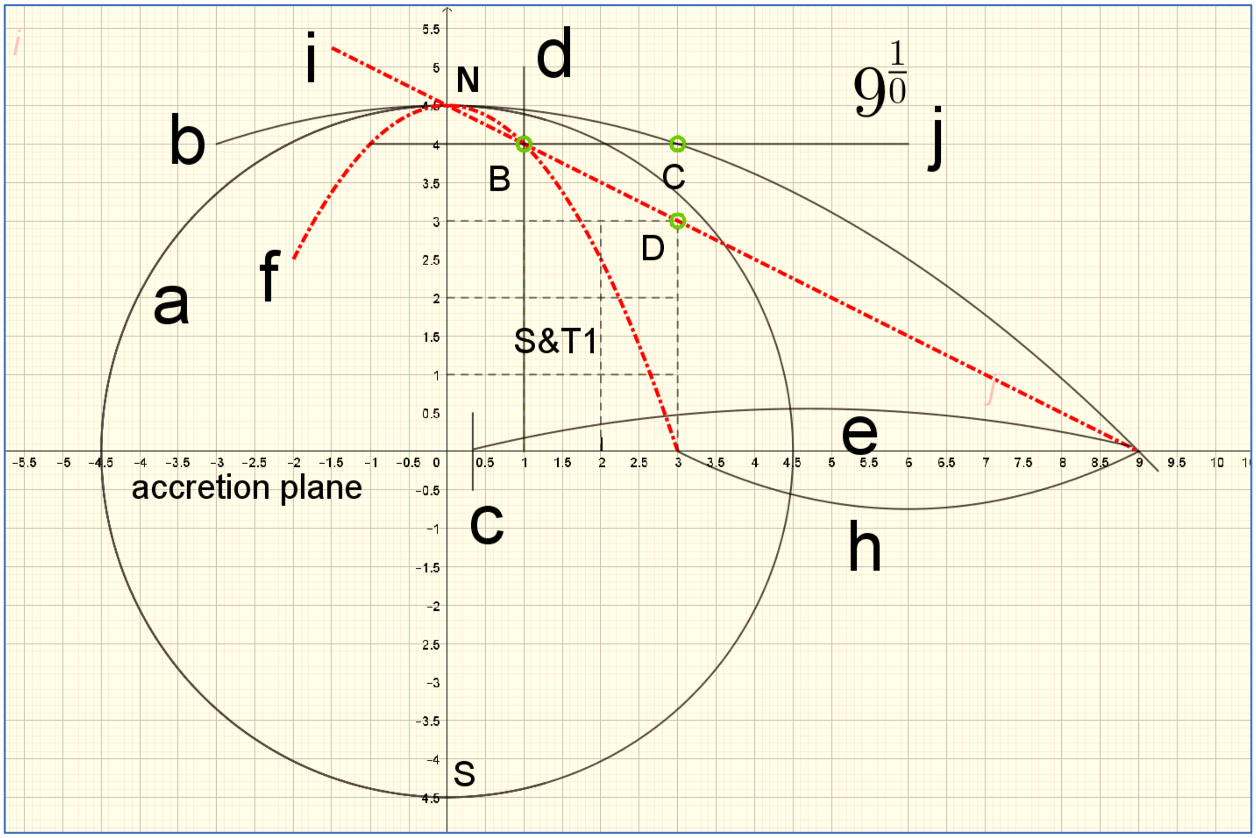

Figure 4*: parametric geometry* $\left(\sqrt[0]{9}\right)$

Name	Value	Caption
Curve a	(4.5cos(t), 4.5sin(t))	Independent curve (AKA discovery curve).
Curve b	(t, t² / -18 + 4.5)	Dependent curve (AKA definition curve).
Curve j	(t, t⁰ / -2 + 9 / 2)	$\left(parametric\ \sqrt[0]{9}\right)$. Rest energy of Central Force Field. Limits range of Surface Acceleration on Curve (a), home to Galileo's Incline Plane Kinematics and latus rectum solution curve $\left(9^{\frac{1}{2}}\right)$.

Curve i	(t, t^1 / -2 + 9 / 2)	curved space registration: $Parametric\sqrt[1]{9}$ with Central Force Spin.
Curve f	(t, t^2 / -2 + 9 / 2)	$(-)$ solution curve. $\left(parametric\ \sqrt[2]{9}\right)$
Curve c	(1/9, t)	Curvature value displacement $(r = 9)$.
Curve e		Best fit parabola linking Sir Isaac Newton's displacement radius (9) with curvature value $\left(\frac{1}{9}\right)$ in potential. $(inverse\ square\ connection)$
Curve h		Best fit parabola connecting Curved Space Mechanical Potential as motive energy on the period time curve (b). $\left(9^2 \leftrightarrow 9^{\frac{1}{2}}\right)$
Point B	B = (1, 4)	$(domain1, range4)$ +endpoint $\left(9^{\frac{1}{2}}\right)$ solution curve latus rectum. Joins: $\left(\sqrt[0]{9}\right), \left(\sqrt[1]{9}\right), \left(\sqrt[2]{9}\right)$
Point C	C = (3, 4)	$\left(domain\sqrt[2]{9}, range4\right)$. Intercept of $\left(\sqrt[0]{9}\right)$ with period time curve (b) @ $\left(\sqrt[2]{9}, 4\right)$
Point D	D = (3, 3)	Galileo's S&T1, our first spacetime square. Coordinates of (D) map 3seconds Earth Uniform Acceleration field with: $(3^2\ spacetime\ tiles)$. One tile of spacetime Earth: $(16ft., 1s)$. Freefall spacetime: $(9s * (16f) = 144ft\ drop)$. Terminal velocity: $(6s * (16ft) = 96ft/s)$.

Created with GeoGebra

Each tile has 1s range and 16ft domain/second/tile.

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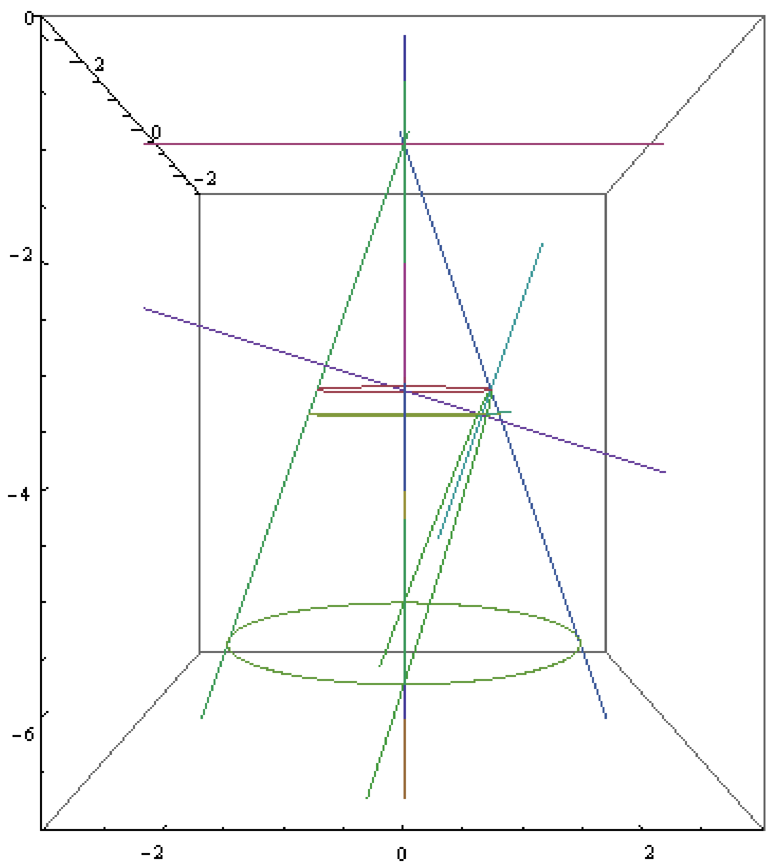
ALΣXANDΣR; CEO SAND BOX GEOMETRY LLCCOPYRIGHT ORIGINAL GEOMETRY BY Sand Box Geometry LLC, a company dedicated to utility of Ancient Greek Geometry in pursuing exploration and discovery of Central Force Field Curves.

Using computer parametric geometry code to construct the focus of an Apollonian parabola section within a right cone.



"It is remarkable that the directrix does not appear at all in Apollonius great treatise on conics. The focal properties of the central conics are given by Apollonius, but the foci are obtained in a different way, without any reference to the directrix; the focus of the parabola does not appear at all... Sir Thomas Heath: "A HISTORY OF GREEK MATHEMATICS" page 119, book II.

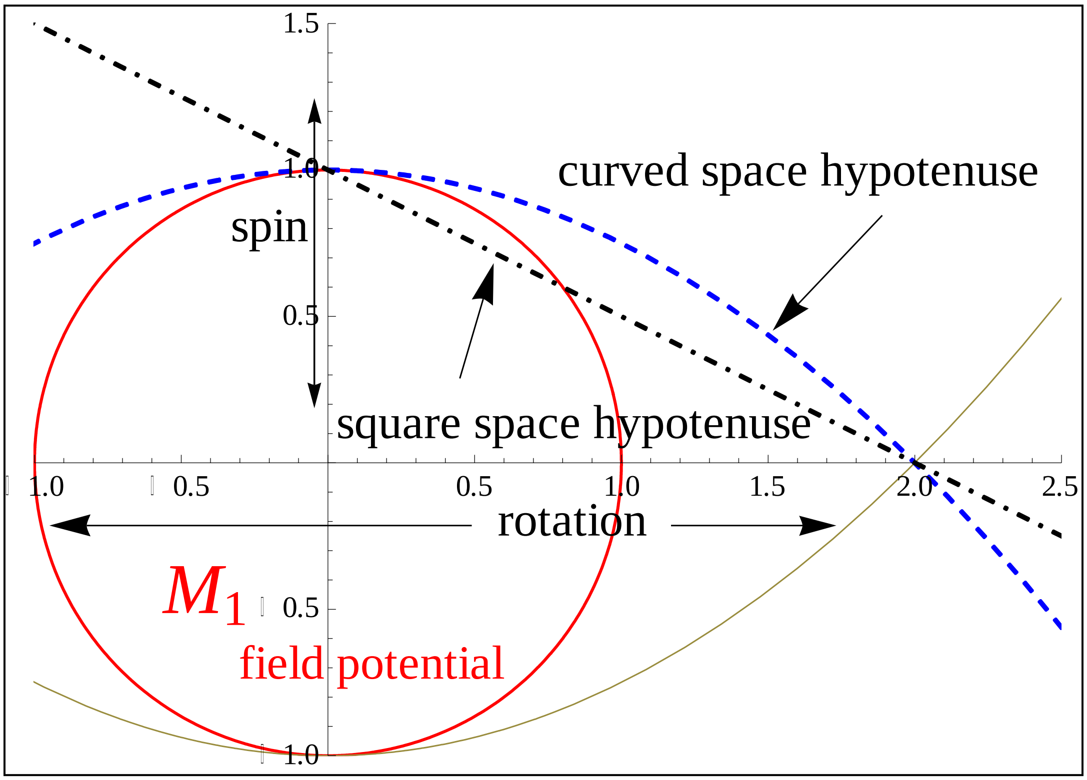
Utility of a Unit Circle and Construct Function Unit Parabola may not be used without written permission of my publishing company Sand Box Geometry LLC Alexander, CEO and copyright owner. alexander@sandboxgeometry.com

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

CAGE FREE THINKIN' FROM THE SAND BOX

The square space hypotenuse of Pythagoras is the secant connecting (π/2) spin radius (0, 1) with accretion point (2, 0). I will use the curved space hypotenuse, also connecting spin radius (π/2) with accretion point (2, 0), to analyze G-field mechanical energy curves.



CSDA demonstration of a curved space hypotenuse and a square space hypotenuse together.

We have two curved space hypotenuses because the gravity field is a symmetrical central force and will have an energy curve at the **N** pole and one at the **S** pole of spin: just as a bar magnet. When exploring changing acceleration energy curves of M_2 orbits, we will use the N curve as our planet group approaches high energy perihelion on the north time/energy curve.

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The foundation of human mathematics is geometry. If one would take some time to look at the written works (they happen to be library available) of Newton, Kepler, and the time-tested Conic Treatise of Apollonius, you will be face-to-face with the stick art of human mathematics. However, unlike art, freedom of interpretation is not invited. Only a single path of rigorous logic leading to an irrefutable conclusion is proffered. Proofing still rules today, as the only way to structure an argument advancing human math to the next level.

For me, it is not important to understand the proofing used with exploratory Philosophical Geometry of the Masters for this can be as difficult to fathom as a triple integral proof, simply witness the incisive descriptive language, explaining methods used by these great geometers of our past, Huygens, Newton, and Kepler, to name a few, as they ponder Questions of Natural Phenomena of Being using descriptive mathematical relations between lines and curves with the unique irrefutable perspective of picture perfect Classic Geometry. Geometry after-all, is one tongue spoken, written, and understood by all humans.

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