CONSTRUCTING ROOTS on CENTRAL FORCE ROTATING G-FIELD AVERAGE ORBIT DISPLACEMENT RADII of SIR ISAAC NEWTON

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PARAMERIC GEOMETRY of ACCRETION	February 11 2020

Inversed degree two displacement radii generate Sir Isaac Newton's Universal Law of G-field space. I intend to use parametric geometry to construct solution curves for the roots of counting integer two on G-field energy curves of a two-unit displacement radius. Inversed parametric geometry solution curves for roots of two constructed on average G-field energy curves lead to a parametric shaping of Gravity Field curved space accretion philosophy.

Constructing curved space central force roots on planes of accretion

Monograph 54 pages; 8400 words

Updated: ~~3/14/2020~~, ~~Monday, March 23, 2020~~, ~~April 1, 2020~~, ~~April 7, 2020~~

~~Sunday, April 12, 2020~~, ~~Thursday, April 16, 2020~~ Saturday, April 18, 2020

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THIS PART OF MONOGRAPH STILL UNDER SELF EDITING.

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PART FOUR

Root curves of radicand greater than 2

INTENTIONS: Monday, March 30, 2020

Parametric Geometry to construct roots is easy enough, I won't explain again what I have been explaining for at least ten years. The written Computer Algebra code is the teacher. Read my code I use to construct roots of curved space and write the means yourself into your machines to see what it is I imagine I find in the Parametric Geometry of Central Force curved space.

I have spent considerable time researching the parametric geometry of Central Force mechanical energy using computer-based math technology. Almost ten years ago I found a standard model construction for both nuclear curves and gravity field mechanical energy curves. I call this standard model construction a Curved Space Division Assembly (**CSDA**). I use my **CSDA** to study Natural Central Force Mechanical Energy using square space parametric geometry curves and lines. This paper is about constructing *inversed exponents*, to find roots of number line integers.

There are two elements in the parametric geometry of roots, index and radicand.

$$\sqrt[index]{radicand}$$

I use the exponential version of roots in my writing: $\left(n^{\left(\frac{1}{index}\right)}\right)$.

Here is how I write $\sqrt{2}$ which is actually $\left(\sqrt[2]{2}\right)$; or as I see it and write it $\left((2)^{\frac{1}{2}}\right)$.

The geometry of G-field central force accretion curves necessarily pattern after **CSDA** parametrics. After all, a **CSDA** essentially uses dynamic computer-based math (as a parametric lens) to clearly focus registration of curved space counting integers with the square space number line, bringing into focus the $\left(f(r)\right)$ of Sir Isaac Newton's displacement (r).

I reference number (2) as an average displacement because it is the required exponent when exploring sensory perception experienced as we meter effect of position in the central force fields we live and work with. Candle power to meter lighting is one such measure. We meter all fields, magnetism, electric charge, and

G-field orbit mechanics, using inversed squared (exponent 2) on radii of a central force experience.

As such, I investigate means to construct roots (the inverse operation of exponents) on Sir Isaac Newton's average energy radii (**CSDA** unit 2).

I take liberty in change of indices to find changing shape of various roots constructed on a unit (2) radicand of displacement, to discover mechanical influence of accretion by G-field central force **F** operating in a curved space environ.

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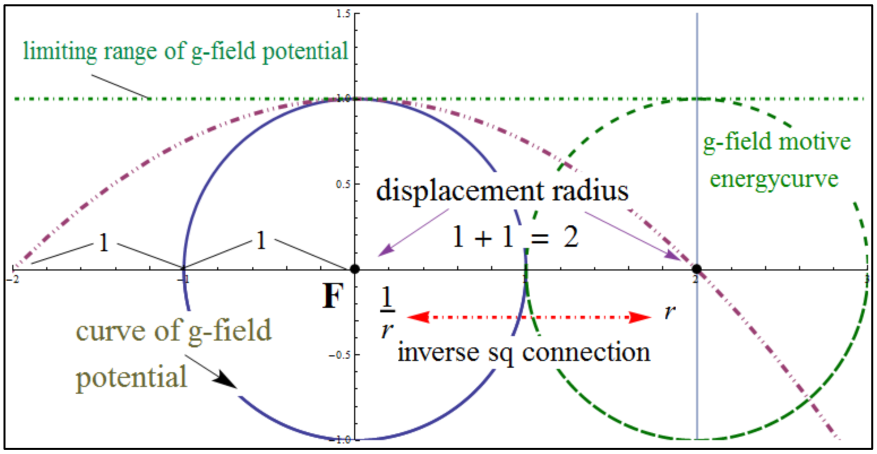

Figure 1: basic **CSDA** demonstration of two unity curves (radius and radius of curvature = 1) and inverse connection. Degree 2 geometry working with degree 1 profile (flat plane) embedded lines and curves.

Reference Baltimore JMM (Jan. 2014): This is the only place in curved space that two unity curves (a place where curvature and RoC = 1) can co-exist as equals. This cooperative endeavor gives us a two-unity curved space event composition on a square space two-unit displacement number line, one curve for potential and one curve for motion. A degree 2 curved space conserved energy parametric geometry happening. Evenly split space to sum conserved energy of M_1 potential and M_2 motion.

Notice the inverse connector joining potential curvature (micro-infinity) with (macro-infinite) event radius of curvature. Only on a **CSDA** dependent average energy curve diameter (4-unit latus rectum) can event radius (r) and its inverse (curvature) exist as two distinct unity curves composing a two-unit event radius happening, metered across both our infinities, with a slope ±1 curved space unity energy tangent happening.

End reference.

M1 SPIN/ROTATION GEOGRAPHY

$$\text{ParametricPlot}[\{\{\text{Cos}[t],\text{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\}\},\{t,-\pi,\pi\},$$
$$\text{PlotRange}\to\{\{-3{,}3\},\{\frac{-3}{2},\frac{3}{2}\}\}]$$

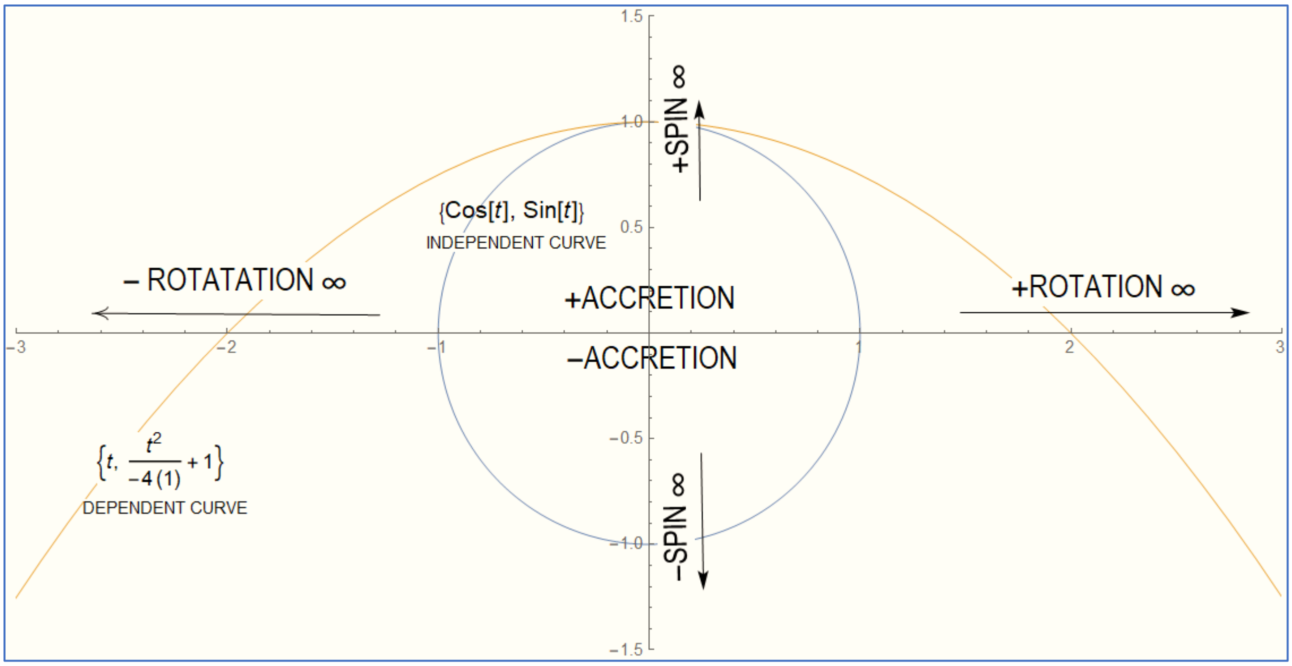

Figure 2: Basic **CSDA** freeze frame construction spin/rotation map of M_1. Signing is Cartesian. Since any snapshot freeze frame is congruent with any other snapshot freeze frame, I designate energy tangent slope event ±1@ quadrant 1 on dependent **CSDA** latus rectum diameter end point (+2) as center of parametric geometry curved space analysis.

CSDA independent M_1 unity curve (1radius unit) as potential and dependent M_2 curve as motive energy $\left(f(r)\right)$ where 2(r) of square space is Sir Isaac Newton's displacement radius. Every parabola has slope $(m = \pm 1)$ tangents on the curves latus rectum diameter, effectively making every **CSDA** parametric geometry map of central force **F** M_1M_2 stable orbit composition built around the system **CSDA** latus rectum average energy diameter as (conserved sum) orbit motive energy.

NOMENCLATURE: ±(MBS), $\{t,\frac{t^i}{-2}+\frac{n}{2}\},\{t,\frac{t^i}{+2}-\frac{n}{2}\}$; main body solution curve. Intercepts abscissa ID of roots $(\sqrt[i]{n},t)$. The G-field has two parametric geometry root solutions curves. Let the curve touching **CSDA** N be negative and the curve touching S of the independent curve spin axis be positive. Square space will have two abscissa ID for $(\sqrt[i]{n},t)$ one on the positive side of G-field spin and one on the negative side of spin space.

$$\text{ParametricPlot}[\{\{\frac{9}{2}\text{Cos}[t],\frac{9}{2}\text{Sin}[t]\},\{t,\frac{t^2}{-4\left(\frac{9}{2}\right)}+\frac{9}{2}\},\{\sqrt[5]{9},t\},\{-\sqrt[5]{9},t\},\{t,\frac{t^5}{-2}+\frac{9}{2}\},\{t,\frac{t^5}{+2}-\frac{9}{2}\}\},\{t,-3\pi,3\pi\},\text{PlotRange}\rightarrow\{\{-6,10\},\{\frac{-11}{2},\frac{11}{2}\}\}]$$

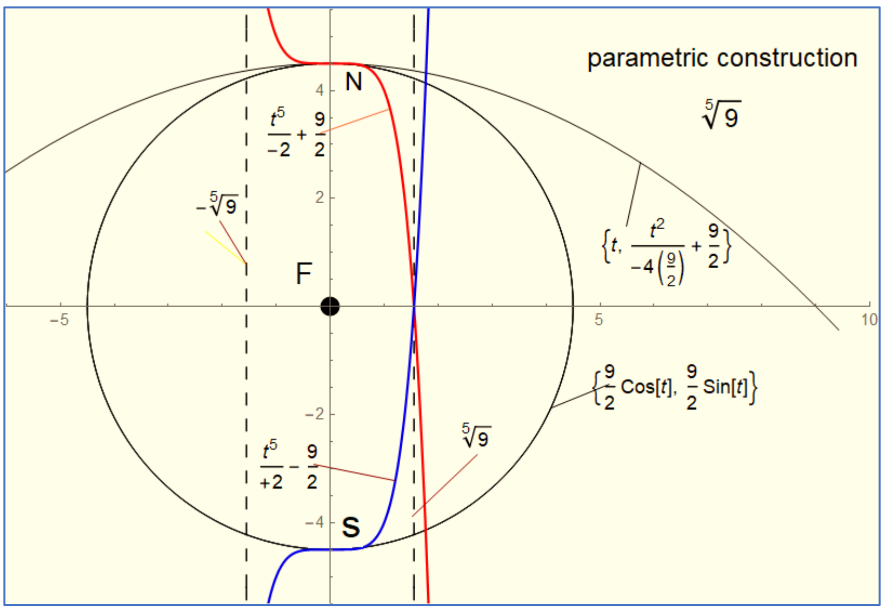

Figure 3: basic CSDA construction of main body solution curves of central force curved space for $\pm\sqrt[5]{9}$. (1SPIN ROTATION 1.nb)

Basic CSDA curved space root construction for:$(\pm\sqrt[5]{9})$.

Independent radius of potential is $\left(\frac{9}{2}\right)$ units.

Sir Isaac Newton's dependent displacement radius: (9) units from **F**.

Sq. space Abscissa ID: $(\{\sqrt[5]{9},t\},\{-\sqrt[5]{9},t\})$.

Main body solution curves of system ±(MBS); $\left\{t,\frac{t^5}{-2}+\frac{9}{2}\right\}$ *and* $\{t,\frac{t^5}{+2}-\frac{9}{2}\}$. $\left(\frac{t^5}{-2}+\frac{9}{2}\right)$ is (−MBS) curve (solid red). And $\left(\frac{t^5}{+2}-\frac{9}{2}\right)$ is (+MBS) curve (solid blue).

±(MBS)$^{-1}$: $-\left(\frac{t^i}{-2}+\frac{n}{2}\right)^{-1}$ and $+\left(\frac{t^i}{+2}-\frac{n}{2}\right)^{-1}$ inversed main body solution curves. The shaping curves of ±(MBS)$^{-1}$ are two. One shape for odd indexed solution curves and one shape for even indices $\left(\sqrt[odd]{2}\right)$ *and* $\left(\sqrt[even]{2}\right)$. Both ±(MBS)$^{-1}$ solution curves have discontinuity whereas ±MBS curves are continuous. The discontinuity asymptote is the square space abscissa ID for root constructed.

$$\text{ParametricPlot}[\{\{\tfrac{9}{2}\text{Cos}[t],\tfrac{9}{2}\text{Sin}[t]\},\{t,\frac{t^2}{-4\left(\frac{9}{2}\right)}+\frac{9}{2}\},\{\sqrt[5]{9},t\},\{-\sqrt[5]{9},t\},\{t,\left(\frac{t^5}{-2}+\frac{9}{2}\right)^{-1}\},$$
$$\{t,\left(\frac{t^5}{+2}-\frac{9}{2}\right)^{-1}\}\},\{t,-3\pi,3\pi\},\text{PlotRange}\to\{\{-6,10\},\{\frac{-11}{2},\frac{11}{2}\}\}]$$

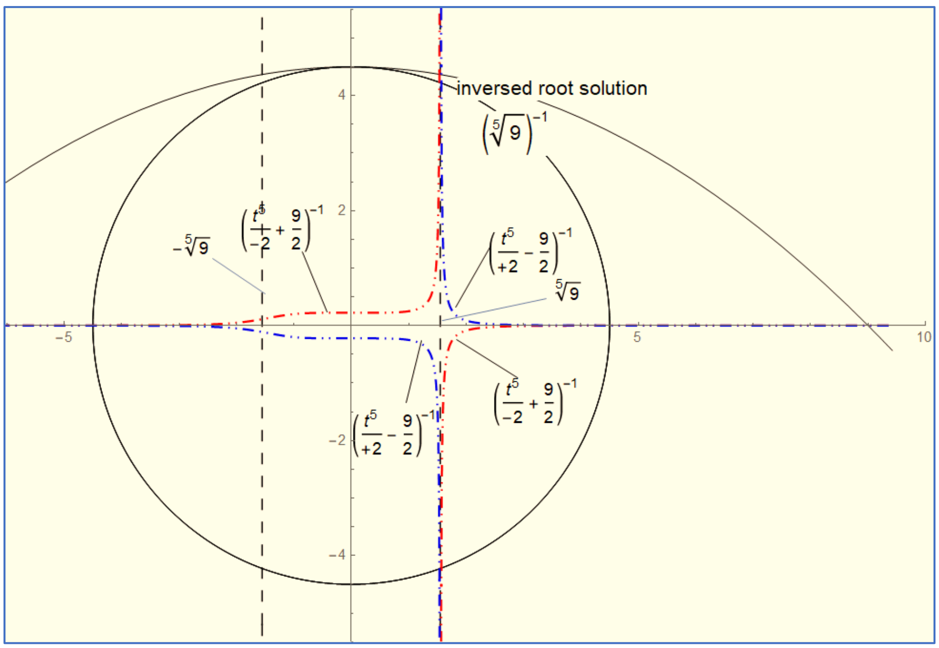

Figure 4: basic CSDA construction of ±(MBS)$^{-1}$. Example is curved space solution for $\left(\pm\left(\sqrt[5]{9}\right)^{-1}\right)$ and sq space abscissa ID. *(1 SPIN ROTATION 1.nb)*

Graph mapping:

MBS curves are solid color lines. −MBS is red and +MBS are blue.

±MBS^{-1} curves have dash/double dot lines.

−(MBS)$^{-1}$ are red and +(MBS)$^{-1}$ are blue.

ISM: my construction is of a three space central force mechanics, up, down, and around. Spin rotation of M_1 is necessarily accompanied with electromagnetic phenomena. I consider all parts of a **CSDA** system electromagnetic. Magnetic (N&S polarity), spin polarity (N&S pole), electric charge of fields (±), and charge of nuclear field constituents (electron cloud and nuclear center), are all inclusive in parametric geometry construction of curved space central force **F**.

I will do five constructions. $\left[\sqrt[1]{2}, \sqrt[2]{2}, \sqrt[3]{2}, \sqrt[4]{2}, \sqrt[5]{2}\ \right]$. In the constructions I will use a definition abscissa to confirm root on 1st quadrant rotation (number line) $\left(\sqrt[index]{2}\right)$. I will construct two curved space solution curves $\{t, \frac{t^i}{-2} + \frac{n}{2}\}, \{t, \frac{t^i}{+2} - \frac{n}{2}\}$ to intercept definition abscissa.

Even indices have two solution intercepts on the square space counting integer number line, one solution on each side of **CSDA** spin. ±MBS curves approach spin axis poles from negative side of spin. ±MBS curves pass into positive spin space seeking root on + latus rectum focal radii.

Odd indices also approach **CSDA** field space from negative side of spin, have only one intercept with counting integer number line @ **CSDA** positive side of spin.

It is the inverse of ‘root’ solution curves I find possible shaping of central force mechanical connection of M_1 potential affecting G-field accretion control across rotation domain ‘channels’**.**

I sense and read two accretion. Stellar Accretive Phenomena of Black Hole galactic assembly and very familiar equatorial belt of M_1 gathering M_2 grouping of our system about M_1(rings of Saturn).

PLASMA and ACCRETION

Where does electromagnetic phenomena of ISM plasma fit with orientation effects of N & S M_1 spin poles. In every central force parametric construction of mechanical curved space, we must consider: 1) field magnetism, N&S polarity, 2) (±) potential of plasma, and 3) potential between electron clouds and positive nuclear centers, as well as potential between M_1 and M_2. All electromagnetic composition parts of our solar central force **F** spin and rotation. The **CSDA** big picture? M_1 potential and M_2 motion.

END PART 1

PART 2: Shape changing indices of curved space

Before I begin constructing various roots of radius two, I want to introduce some basic facts concerning the changing shapes of parametric geometry curved space roots.

Selections explored will be even indices first and odd indices second.

Protocol: even indices; $\pm\left(\sqrt[2]{2}\right)$ as standard model of parametric analytics

1. ±(MBS): Main Body Solution Curves $\{t, \frac{t^i}{-2} + \frac{n}{2}\}, \{t, \frac{t^i}{+2} - \frac{n}{2}\}$ always pass through field spin axis endpoint (N&S) before searching for root. Let the MBS curve passing through N be the (red) negative curve and the MBS curve passing through S be (blue) positive curve.

Signing of curved space root solution curves.

I base signing on earlier work with G-field energy curves. Since the average energy curve radius of M_1M_2 system is a latus rectum **CSDA** focal radius, all 1st quad energy tangents constructed with respect to the N pole of M_1 @ (+ unit 2) have down slope and therefore are negative.

all 1st quad energy tangents constructed with respect to the S pole of M_1 and (+ unit 2) have up slope and therefore are positive.

$$\text{ParametricPlot}[\{\{\text{Cos}[t],\text{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{\sqrt{2},t\},\{-\sqrt{2},t\},\{t,\left(\frac{t^2}{-2}+\frac{2}{2}\right)^{-1}\},$$

$$\{t,\left(\frac{t^2}{+2}-\frac{2}{2}\right)^{-1}\},\{t,(\frac{t^2}{-2}+\frac{2}{2})\},\{t,(\frac{t^2}{+2}-\frac{2}{2})\}\},\{t,-4,4\},\text{PlotRange}\to\{\{-4,4\},\{-3,3\}\}]$$

Even indices ±MBS curves: have three happening

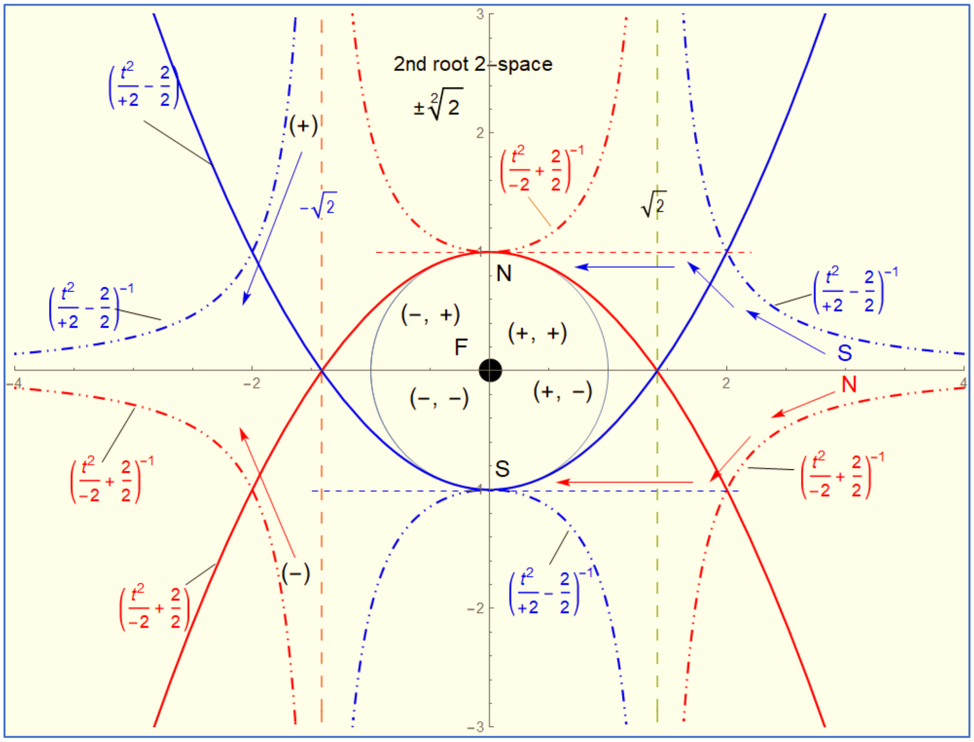

Figure 5: basic CSDA construction of ±MBS solution curve $\pm(\sqrt[2]{2})$, abscissa ID of $\pm(\sqrt[2]{2})$, and inversed ±MBS^{-1} $\pm\left[\left(\sqrt[2]{2}\right)^{-1}\right]$ with vector distribution of ISM Plasma. (space roots.nb)

$-$MBS^{-1}; $\left[\left(\frac{t^2}{-2}+\frac{2}{2}\right)^{-1}\right]$ is sourced from $-$MBS $\left(\frac{t^2}{-2}+\frac{2}{2}\right)$ and share same N spin vertex. These curves are negative field curves colored red.

–MBS $\left(\frac{t^2}{-2}+\frac{2}{2}\right)$ is solid red line and –MBS^{-1}; $\left[\left(\frac{t^2}{-2}+\frac{2}{2}\right)^{-1}\right]$ is hash double dot red line.

Let <u>all</u> ±MBS^{-1} inversed curves left side ($-$abscissa) ID of root solution be electric potential of ISM Plasma. All ±MBS^{-1} inversed curves right side (+abscissa) ID be magnetic curl of ISM Plasma electric potential.

Note ±MBS^{-1} even indices ***principal inverse*** curves are locked between ±abscissa root ID.

−MBS^{-1} principal $\left(\frac{t^2}{-2}+\frac{2}{2}\right)^{-1}$ occupy Quad 1&2; +MBS^{-1} Principal $\left(\frac{t^2}{+2}-\frac{2}{2}\right)^{-1}$ reside in Quad 3&4. Identity of inversed *principal* curves ±MBS^{-1} are determined with field spin polarity. —Red is N and +blue is S.

The red N −MBS^{-1}; $\left[\left(\frac{t^2}{-2}+\frac{2}{2}\right)^{-1}\right]$ has three apparitions. Quadrant (1 and 2) have *principal* red N vertex −MBS^{-1}. Quadrant (3) is −electric potential and quadrant (4) has N magnetic curl of −MBS^{-1} possessed by (−electric potential) of ISM Plasma in quadrant (3).

The blue S +MBS^{-1}; $\left[\left(\frac{t^2}{+2}-\frac{2}{2}\right)^{-1}\right]$ has three apparitions. Quadrant (3 and 4) have *principal* blue S vertex +MBS^{-1}. quadrant (2) is +electric potential and quadrant (1) has S magnetic curl of +MBS^{-1} possessed by (+electric potential) of ISM Plasma in quadrant (2).

The blue S +MBS^{-1}; $\left[\left(\frac{t^2}{+2}-\frac{2}{2}\right)^{-1}\right]$ happening in quad2 has down spin +electric potential approaching plane of rotation from + ISM spin space, on negative side of (—abscissa) ID, on positive side of accretion, receding along (—rotation) infinity.

The red N −MBS^{-1}; $\left[\left(\frac{t^2}{-2}+\frac{2}{2}\right)^{-1}\right]$ happening in quad3 has up spin −electric potential approaching plane of rotation, on negative side of (—abscissa) ID, on negative side of accretion, receding along (—rotation) infinity.

Both N&S curves representing magnetic curl of electric field potential approach positive side of (+root abscissa) ID. −MBS^{-1} red magnetic curl; $\left[\left(\frac{t^2}{-2}+\frac{2}{2}\right)^{-1}\right]$ happens in Quad 3 and +MBS^{-1} blue magnetic curl; $\left[\left(\frac{t^2}{+2}-\frac{2}{2}\right)^{-1}\right]$ happens in Quad 1.

Red N −MBS^{-1} $\left[\left(\frac{t^2}{-2}+\frac{2}{2}\right)^{-1}\right]$ magnetic curl approaches +abscissa ID on plane of rotation on negative side of accretion. Curl stops at S vertex curvature evaluation (curved space directrix) and connects with S pole of field spin. N curl with S pole.

Blue S +MBS^{-1}; $\left[\left(\frac{t^2}{+2}-\frac{2}{2}\right)^{-1}\right]$ magnetic curl approaches +abscissa ID on plane of rotation on positive side of accretion. Curl stops at N vertex curvature evaluation (curved space directrix) and connects with N pole of field spin. S curl with N pole.

Protocol: odd indices; $\pm(\sqrt[1]{2})$ as standard model of parametric analytics

Let main body solution curves for $(\pm\sqrt[1]{2})$ be :

$$\boxed{\{t, \frac{t^1}{-2} + \frac{2}{2}\}, \{t, \frac{t^1}{+2} - \frac{2}{2}\}}$$

Let these curves be inquiry parametric geometry solution curves for $\pm\sqrt[1]{2}$.

±(MBS): Main Body Solution Curves $\{t, \frac{t^i}{-2} + \frac{n}{2}\}, \{t, \frac{t^i}{+2} - \frac{n}{2}\}$ always pass through field spin axis endpoint (N, S) before searching for root. Let the one passing through N be the (red) negative curve and the curve passing through S be (blue) positive curve.

$$\text{ParametricPlot}[\{\{\text{Cos}[t], \text{Sin}[t]\}, \{t, \frac{t^2}{-4(1)} + 1\}, \{t, \frac{t^2}{+4(1)} - 1\}, \{\sqrt[1]{2}, t\}, \{t, \frac{t^1}{-2} + \frac{2}{2}\},$$
$$\{t, \frac{t^1}{+2} - \frac{2}{2}\}, \{t, (\frac{t^1}{+2} - \frac{2}{2})^{-1}\}, \{t, (\frac{t^1}{-2} + \frac{2}{2})^{-1}\}\}, \{t, -2\pi, 2\pi\}, \text{PlotRange} \to \{\{-6,6\}, \{-6,6\}\}]$$

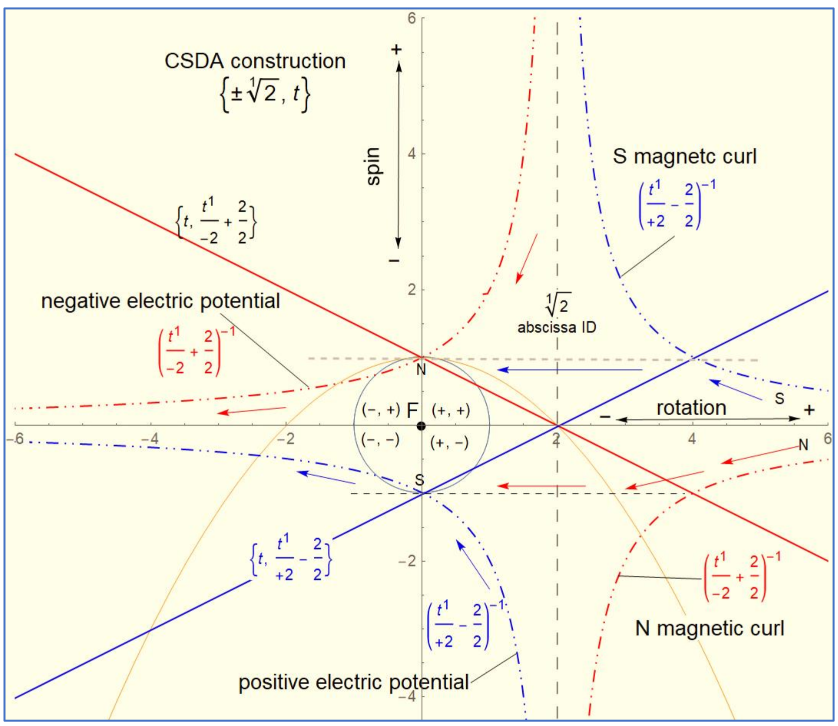

Figure 3: space roots.nb

$-\left(\frac{t^1}{-2} + \frac{2}{2}\right)^{-1}$ is sourced from −MBS; $-\left[\frac{t^1}{-2} + \frac{2}{2}\right]$ and share same spin vertex (N). These curves are negative field curves colored red.

$-\left[\frac{t^1}{-2} + \frac{2}{2}\right]$; −MBS is solid red line and [-MBS^{-1}]; $-\left[\left(\frac{t^1}{-2} + \frac{2}{2}\right)^{-1}\right]$ is hash double dot red line.

+MBS^{-1}; $\left(\frac{t^1}{+2} - \frac{2}{2}\right)^{-1}$ is sourced from +MBS; $\left(\frac{t^1}{+2} - \frac{2}{2}\right)$ and share same spin vertex (S). These curves are positive field curves colored blue. $+\left(\frac{t^1}{+2}-\frac{2}{2}\right)$ +MBS is solid blue line and +MBS^{-1}; $+\left(\frac{t^1}{+2}-\frac{2}{2}\right)^{-1}$ is hash double dot blue line.

- Let all ±MBS^{-1} inversed curves leftside (—abscissa) ID of roots solution curves be electric potential of ISM Plasma. All ±MBS^{-1} inversed curves rightside (+abscissa) ID be magnetic curl of ISM electric potential.
- Note ±MBS^{-1} $+\left(\frac{t^1}{+2}-\frac{2}{2}\right)^{-1}, -\left(\frac{t^1}{-2}+\frac{2}{2}\right)^{-1}$ inversed curves are connected with polarity assignment of source ±MBS $\{t, \frac{t^1}{-2}+\frac{2}{2}\}, \{t, \frac{t^1}{+2}-\frac{2}{2}\}$; —Red is N and +blue is S.
- Both ±MBS (main body solution curves) come from negative spin infinity. Cross into +spin space at spin diameter endpoints of **F**. −MBS curve $\left\{t, \frac{t^1}{-2}+\frac{2}{2}\right\}$ crosses into +spin space via N polarity and is negative red. +MBS curve $\left\{t, \frac{t^1}{+2}-\frac{2}{2}\right\}$ crosses into +spin space at S M_1 polarity and is a blue positive curve.
- The −MBS; $\left\{t, \frac{t^1}{-2}+\frac{2}{2}\right\}$ (red main body solution curve) has two apparitions. Quadrant (1&2) has principal N vertex −MBS^{-1}; $\left(\frac{t^1}{-2}+\frac{2}{2}\right)^{-1}$ and is (−) ISM plasma potential (red hash/double dot). Quadrant (4) has N magnetic curl of −MBS^{-1} possessed by (−electric potential) of ISM Plasma in quadrant (1&2).
- The +MBS; $\left\{t, \frac{t^1}{+2}-\frac{2}{2}\right\}$ (blue main body solurion curve) has two aparitions. Quadrant (3&4) has blue S vertex +MBS^{-1}; $\left(\frac{t^1}{+2}-\frac{2}{2}\right)^{-1}$ is +ISM plasma electric potential. Quadrant (1) has S magnetic curl of +MBS^{-1}; $\left(\frac{t^1}{+2}-\frac{2}{2}\right)^{-1}$ possessed by (+electric potential) of ISM Plasma in quadrant (3&4).
- The blue S +MBS^{-1}; $\left(\frac{t^1}{+2}-\frac{2}{2}\right)^{-1}$ has up spin electric potential approaching plane of rotation from −ISM spin space happening in quadrant (3&4) on negative side of (abscissa) ID, on negative side of accretion, receding along (—rotation) infinity.
- The red N −MBS^{-1}; $\left(\frac{t^1}{-2}+\frac{2}{2}\right)^{-1}$ has down spin electric potential approaching plane of rotation happening in quadrant (1&2), on negative side of (—abscissa) ID, on positive side of accretion, receding along (—rotation) infinity.

- Both N&S curves representing magnetic curl of electric field potential aproach positive side of (+root abscissa) ID. −MBS^{-1}; $\left(\frac{t^1}{-2}+\frac{2}{2}\right)^{-1}$ red magnetic curl happens in Quad 4 and +MBS^{-1}; $\left(\frac{t^1}{+2}-\frac{2}{2}\right)^{-1}$ blue magnetic curl happens in Quad 1.
- Red N −MBS^{-1}; $\left(\frac{t^1}{-2}+\frac{2}{2}\right)^{-1}$ magnetic curl approaches +abscissa ID on +plane of rotation on negative side of accretion. Curl stops at S vertex curvature evaluation (curved space directrix) and connects with S pole of field spin. N curl with S pole.
- Blue S +MBS^{-1}; $\left(\frac{t^1}{+2}-\frac{2}{2}\right)^{-1}$ magnetic curl approaches +abscissa ID on +plane of rotation on positive side of accretion. Curl stops at N vertex curvature evaluation (curved space directrix) and connects with N pole of field spin. S curl with N pole.

System curved space directrix of M_1 is asymptotic for magnetism. Once ISM plasma is captured by spin/rotation phenomena of M_1 G-field, ISM magnetic properties are assigned to N & S spin poles of M_1 central force **F** spin axis.

Incoming ISM electric potential is channeled along the spin axis (range) of M_1 G-feld influence, onto the domain of accretion control by M_1. Solar G-field M_1 spin/rotation separate ISM constiuents by abscissa root ID asymptotes, potential along accretion plane of M_1 and magnetism to the spin poles of M_1. Both electromagnetic constituens of ISM plasma becoming enmeshed with M_1 spin and rotation. Constituent parts of plasma become the additive glue controlling a stellar M_1 accretion collective as a neighborhood whole participating in part with a central force Black Hole operating/controlling the spin and rotation of our spiral galaxy.

END TWO

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https://www.geogebra.org/u/apollonius model construction of

This hyperlink connects with my GeoGebra Cloud. If it works, click on 'Relative Energy Orbit Period' to see a dynamic computer interpretation of Sir Isaac Newton's Universal Law with respect to unit (4) average energy diameter. This dynamic geometry is essentially growing Thales right hypotenuse as spin diameter M_1. Focal radii follow changing rt. vertex connected with system changing energy tangent, thereby altering mechanical energy experienced via period motion, applied to changing orbit diameter of M_2 (duo curve analytics).

I propose to let Inversed main body solution curves carry electromagnetic characteristic of ISM Plasma. Let abscissa definition $\left\{\sqrt[i]{2}, t\right\}$ be asymptotic. Let those $\pm(\text{MBS})^{-1}$ curves on the left side of root abscissa ID be electric (± potential), and those curves $\pm(\text{MBS})^{-1}$ on the right side of abscissa ID be (N&S) magnetic curl held by electric charge (± potential) ISM plasma.

With fields of electric charge (±potential) comes magnetism (N&S polarity). Electric field curves in my parametric geometry have vector heads giving direction. Magnetic field lines curl around electric field vector direction. Their direction is locked on the electric field potential, traditionally negative charge toward positive potential. ISM magnetism will go where ISM electric field lines carry them.

I Assign no vector description to magnetic curl. When encountering central force influence of M_1, they never leave system but bend in space north curl seeking S polarity and south curl seeking N polarity. To do so they must be made separate of ISM plasma potential. This is geometrically accomplished using parametric asymptotes of $\pm\text{MBS}^{-1}$.

Plasma magnetic curl does a capacitor leap across asymptotic root Abscissa ID, to find and attach to opposite polarity pole in M_1 spin space via M_1 rotation plane. N curl with S pole, and S curl with N pole.

MBS main body solution curves also have a sense of direction, Curves come from (—) spin space, flatline at assigned spin axis pole, finding root inquiry in (+) spin space.

Part 3: constructing changing indices on radicand (2) of curved space average energy radii

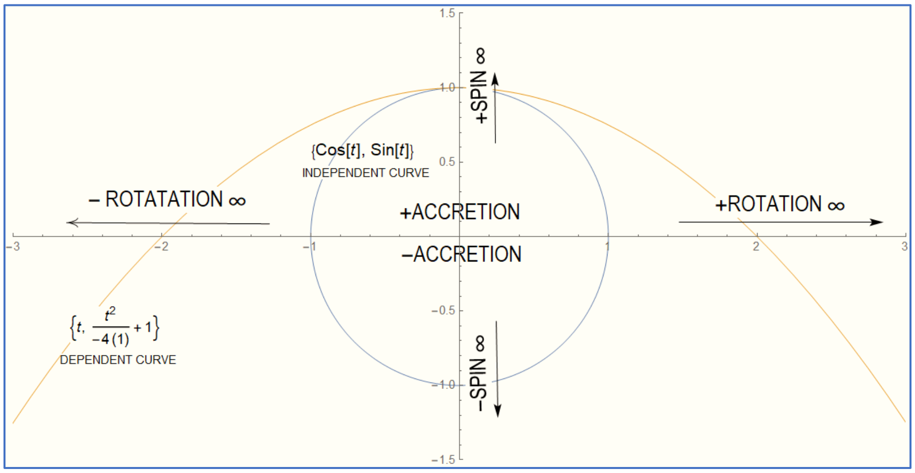


Figure 6: Basic **CSDA** freeze frame construction spin/rotation map of M_1. Signing is Cartesian. Since any snapshot freeze frame is congruent with any other snapshot freeze frame, I designate energy tangent slope event ±1@ quadrant 1 on dependent **CSDA** latus rectum diameter end point (+2) as center of parametric geometry curved space analysis.

I reference page six as premise for curved space construcyion of roots. The roots of square space, Imaginaries and complex, are not explored here.

I depend heavily on instantaneous assesment.

A central force field spins. Some fields spin with exrteme rapidity. Check out pulsars.

To construct a root on a linear displacement from **F**, I need stop the spin. Once stopped, I need to ovelay a map on the profile since I can never know where I am on the profile surface since they all look alike. It is admittidely arbitray the geography of the map I use.

I believe I am the first to explore roots on a central force displacement so I take liberty in the ollowing statement lifted from the caption with figure (6):

*Since any snapshot freeze frame is congruent with any other snapshot freeze frame, I designate energy tangent slope event ±1@ quadrant 1 on dependent **CSDA** latus rectum diameter end point (+2) as center of parametric geometry curved space analysis.*

Only the parametric geometry of lines and curves of roots constructed on displacement radius (r) @ +2 latus rectum end point of my **CSDA** are explored. After shaping phenomena is understood, then I change indices and radicans.

$\sqrt[1]{2}$ and $\left(\sqrt[1]{2}\right)^{-1}$ GeoGebra

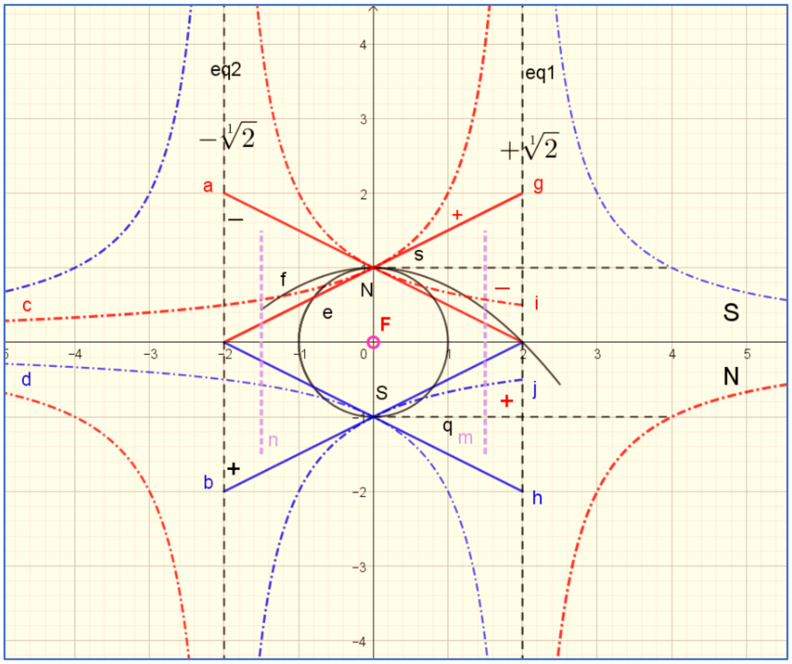


Figure 7: Basic CSDA construction of curved space definition of $\sqrt[1]{2}$ *and* $\left(\sqrt[1]{2}\right)^{-1}$.

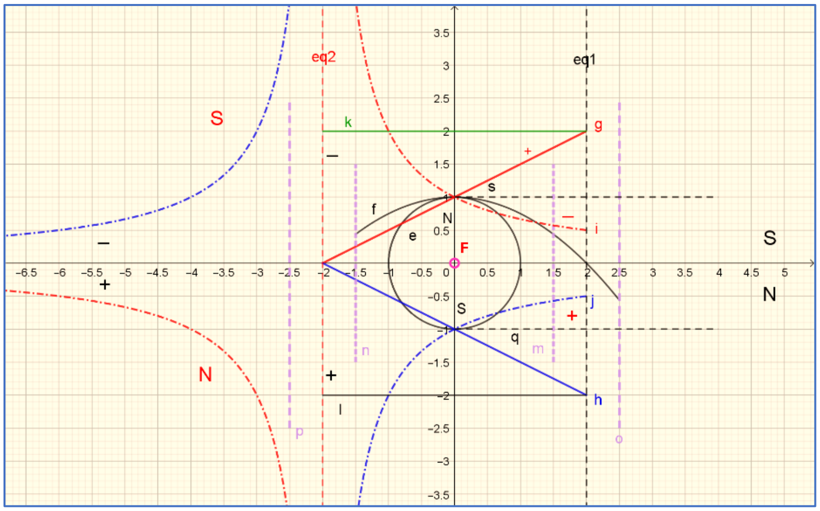
I have constructed two sets of ±(MBS) root solution curves. One for (+) space and one for (—) space. (a&b;+2) for root solution (+2) of $\sqrt[1]{2}$; and root solution curves (g&h;(−2)) for (−2) of root solution $-\sqrt[1]{2}$.

I have constructed a unit (1) space **CSDA** time square with embedded **CSDA** independent curve potential (e). (f) is dependent curve of system, tracks M_2 period motion.

MBS (main body solution curves)

Let line (a,2) be negative (MBS) and line (b,2) be positive (MBS). Being linear solution curves (a&b;2) find +2 on number line (solution for inquiry $\sqrt[1]{2}$, equation (1).

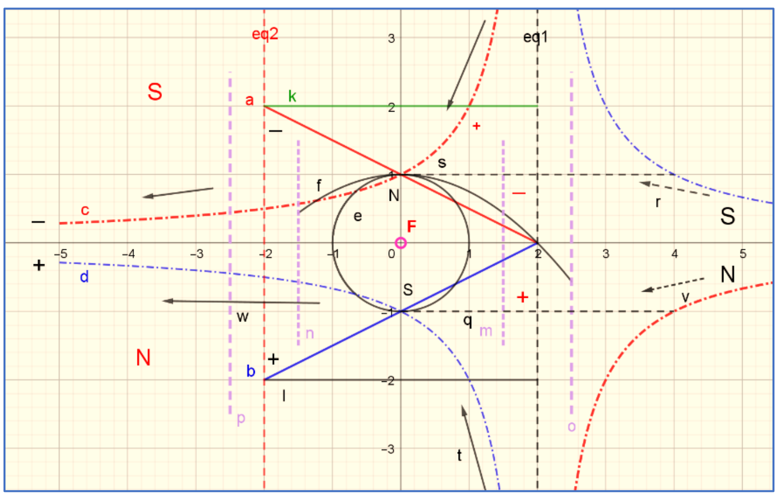
The (MBS) curves (g&h; −2) represent $\left(-\sqrt[1]{2}\right)$ inquiry in negative spin space of field mechanics. Being linear solution curves (g&h; −2) find −2 on number line (solution for inquiry $-\sqrt[1]{2}$, equation (2).



Let negative spin space be left of M_1 spin axis. Note eq2 marks latus rectum end-point (−2) of M_1 system average energy diameter.

Let eq2 be negative abscissa $\left(-\sqrt[1]{2}\right)$ inquiry.

Figure 8: basic CSDA negative spin space.



Let positive spin space be right of M_1 spin axis.

Let eq1 be positive abscissa $\left(+\sqrt[1]{2}\right)$ inquiry.

Answer for inquiry is (+2) of CSDA average energy diameter latus rectum.

Figure 9: basic CSDA construction of positive spin space.

GEOGRAPHY $\sqrt[1]{2}$ and $\left(\sqrt[1]{2}\right)^{-1}$

Positive spin space geography is explored. Those curves coming from (−) spin space with angle less than 45° are solar M_1 manufactured. These MBS solution curves present a curved space hypotenuse approach to N&S spin and rotation. They are spin radii linear relative, making approach angle closer to rotation domain of M_1 as opposed to clinging to field spin (range). Lines and curves of indices (2) and greater, suggest spin axis approach of ISM plasma to M_1 rotation domain.

$$\text{ParametricPlot}[\{\{1\text{Cos}[t],1\text{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{-(\sqrt[1]{2}),t\},\{-t,(\frac{t^{(1)}}{-2}+\frac{2}{2})\},\{-t,(\frac{t^{(1)}}{+2}-\frac{2}{2})\},$$
$$\{-t,(\frac{t^{(1)}}{-2}+\frac{2}{2})^{-1}\},\{-t,(\frac{t^{(1)}}{+2}-\frac{2}{2})^{-1}\}\},\{t,-2\pi,2\pi\},\text{PlotRange}\to\{\{-4.5,2\},\{-3,3\}\}]$$

MBS (main body solution) curves are paired because ISM electromagnetic plasma Birkland currents register presence with potential. We have a +MBS and a −MBS. Each signed solution curve carries a magnetic curl I sign as N and S; basic bar magnet identity.

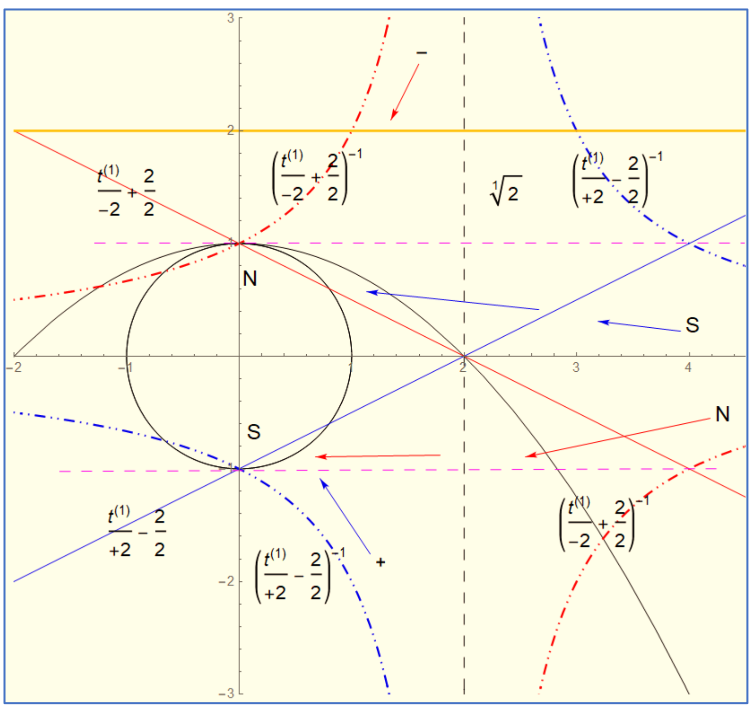


Figure 10: space roots.nb

$$\{t,\left(\frac{t^1}{-2}+\frac{2}{2}\right)\},\{t,\left(\frac{t^1}{+2}-\frac{2}{2}\right)\}.$$

Let solid red curve $\left(\frac{t^1}{-2}+\frac{2}{2}\right)$ be (−MBS). This curve is negative (−) potential because it passes through N spin vertex of M_1 with down slope. The inversed linear $(-\text{MBS})^{-1}$ has two parts. $\left(\frac{t^1}{-2}+\frac{2}{2}\right)^{-1}$ falling along negative side of abscissa ID $\left(+\sqrt[1]{2}\right)$ passing through N spin vertex, falling toward system rotation on positive side of accretion is negative ISM plasma electric potential. Its magnetic partner is in quadrant 4, labeled magnetic N because the 'mate' electric potential is sourced from N spin vertex.

Let solid blue curve $\left(\frac{t^1}{+2} - \frac{2}{2}\right)$ be (+MBS). This curve is positive potential because it passes through S spin vertex of M_1 with up slope. The inversed linear $(MBS)^{-1}$ has two parts. The curve $\left(\frac{t^1}{+2} - \frac{2}{2}\right)^{-1}$ climbing along negative side of abscissa ID $\left(+\sqrt[1]{2}\right)$ and passing through S spin vertex toward system rotation plane on negative side of accretion is positive electric potential. Its magnetic partner is in quadrant 1, labeled magnetic S because the 'mate' electric potential is sourced from S spin vertex.

- Both ±N&S curves representing magnetic curl of electric field potential aproach positive side of (+root abscissa) ID. $-MBS^{-1}$; $\left(\frac{t^1}{-2} + \frac{2}{2}\right)^{-1}$ red magnetic curl happens in Quad 4 and $+MBS^{-1}$; $\left(\frac{t^1}{+2} - \frac{2}{2}\right)^{-1}$ blue magnetic curl happens in Quad 1.
- Red <u>N</u> $-MBS^{-1}$; $\left(\frac{t^1}{-2} + \frac{2}{2}\right)^{-1}$ magnetic curl approaches +abscissa ID on +plane of rotation on negative side of accretion. Curl stops at S vertex curvature evaluation (curved space directrix) and connects with S pole of field spin. N curl with S pole.
- Blue <u>S</u> $+MBS^{-1}$; $\left(\frac{t^1}{+2} - \frac{2}{2}\right)^{-1}$ magnetic curl approaches +abscissa ID on +plane of rotation on positive side of accretion. Curl stops at N vertex curvature evaluation (curved space directrix) and connects with N pole of field spin. S curl with N pole.

An aside about plasma distribution. Suppose there are two sources for the fourth state. Internal (self-produced) and external. Let index (1) represents internal plasma distribution of central force M_1 spin rotation. In parlance of a successful business enterprise, manufactured and financed with internal resources.

Internal source plasma curves behave the same as external. Their direction, assignments, and distribution are controlled by root abscissa definition asymptotes, and **CSDA** curved space directrix of a closed M_1 **CSDA** analytical system.

Internal generated plasma, though sourced from spin axis range of M_1, is enmeshed with accretion phenomena of M_1 rotation domain, reaching out, touching and influencing M_2's.

External plasma is pure ISM stuff. I will show, by increasing indices, the crush phenomena of Black Holes working on central force M_1 **F**, I becomes ever so apparent.

Crush phenomena of Black Holes flatten and intensify M_1 accretion domains, enhancing external influence on spin rotation phenomena of M_1 spin rotation systems.

I intend to let radicands be arithmetic increase of system M_1M_2 collective mass. Increasing indices is exponential increase of Black Hole mass as galactic central force M_1.

This is a huge disparity. Just as our sun sucks up all the mass in our system, **CSDA** mass comparative, using parametric curved space geometry of us to black hole mass intensity, flat lines our rotation accretion plane of **F** into a curved ecliptic plane in orbit about the galactic center.
(See page 35 or page 8) for extreme flat line indices.

$(\sqrt[2]{2})$ (space roots.nb)

$$\text{ParametricPlot}[\{\{\text{Cos}[t],\text{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{t,\frac{t^2}{+4(1)}-1\},\{\sqrt[2]{2},t\},\{t,\frac{t^2}{-2}+\frac{2}{2}\},\{t,\frac{t^2}{+2}-\frac{2}{2}\},\{t,(\frac{t^2}{+2}-\frac{2}{2})^{-1}\},\{t,(\frac{t^2}{-2}+\frac{2}{2})^{-1}\}\},\{t,-\pi,\pi\},\text{PlotRange}\to\{\{-3,3\},\{\frac{-3}{2},\frac{3}{2}\}\}]$$

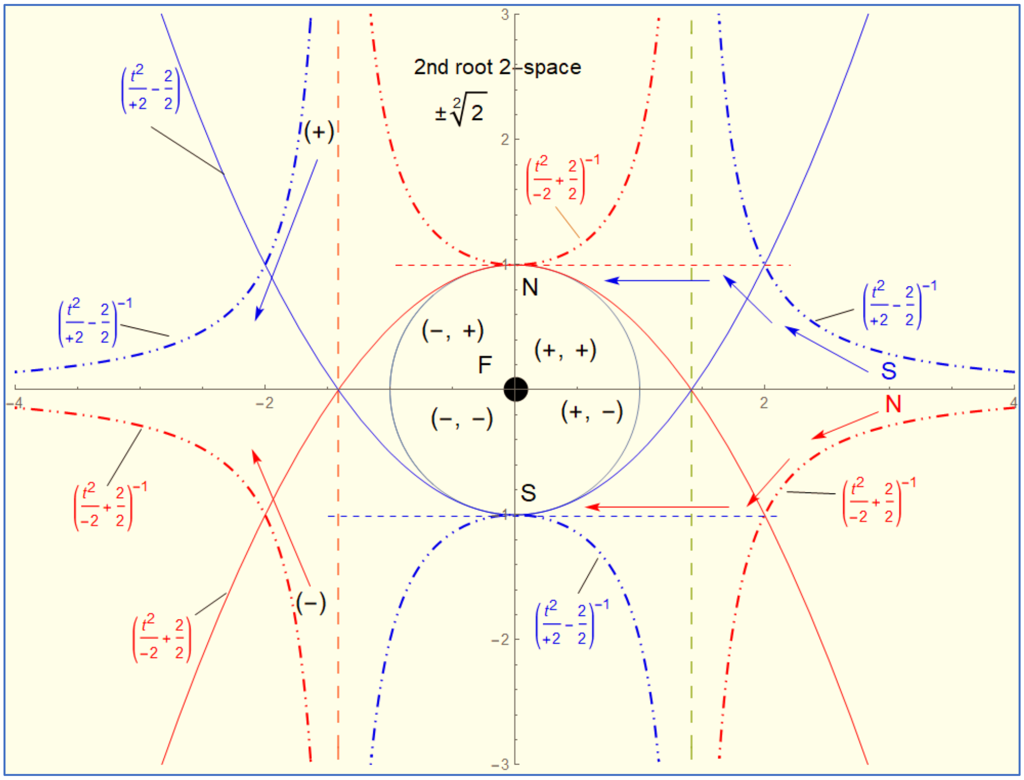


Figure 11: basic **CSDA** construction $\{\pm\sqrt[2]{2},t\}$ and inverse. Includes vector mapping of G-field accretive control over charge particles capture in M1M2 stable orbit system. System latus rectum $(-2 \leftrightarrow +2)$ average G-field energy diameter.

1. Inversed solution $\left(\pm\sqrt[2]{2}\right)^{-1}$; $\{t,\left(\frac{t^2}{+2}-\frac{2}{2}\right)^{-1}\},\{t,\left(\frac{t^2}{-2}+\frac{2}{2}\right)^{-1}\}$ become three parts changing shape of MBS $\left(\frac{t^2}{\mp 2}\pm\frac{2}{2}\right)$ into 3 apparitions.

Even indices are different from odd indices. Both even and odd MBS solution curves source from negative spin infinity. Negative MBS (for even or odd) find M_1 N spin vertex and positive MBS (for even or odd) find M_1 S spin vertex. Sameness of positive and negative MBS curves stops here.

Inversed ±MBS^{-1} $\left(\frac{t^2}{\mp 2} \pm \frac{2}{2}\right)^{-1}$ curves are flipped along spin axis attaching inversed solution curve vertices to **CSDA** Curved Space Directrix staying with sourced spin vertex. $\left(\frac{t^2}{-2} + \frac{2}{2}\right)^{-1}$ @ N $\left(\frac{\pi}{2}\right)$ spin radius, and $\left(\frac{t^2}{+2} - \frac{2}{2}\right)^{-1}$ is @ S $\left(\frac{3\pi}{2}\right)$ spin radius.

Main body solution curves $\{t, \frac{t^2}{-2} + \frac{2}{2}\}, \{t, \frac{t^2}{+2} - \frac{2}{2}\}$ come from negative spin space. If we let rotation plane be that part of space holding and defining accretion space be signed, we could say upside of rotation is +accretion and downside of rotation is −accretion.

Now, let −MBS; $-\left(\frac{t^2}{-2} + \frac{2}{2}\right)$ have spin vertex set at N pole of system. N pole −MBS curves are negative (1st quadrant slope down energy tangents). Let inversed −MBS^{-1} curves be composed of plasma. Plasma of (−MBS) negative root solution curve have two assignments, one for electric potential and one for magnetic curl. Negative electric potential in Q-3 and N magnetic polarity in Q-4.

Inversed *principal* ±MBS^{-1} curves $\left(\frac{t^2}{\mp 2} \pm \frac{2}{2}\right)^{-1}$ carry plasma. These curves occupy two quadrants. They are flipped openside toward macro infinite spin space. Locked at the source Pole of MBS, ±MBS^{-1} are trapped between ±root abscissa ID. −MBS^{-1} occupies quadrant (1&2), +MBS^{-1} occupies quadrant (3&4)

Let (−) electric potential of plasma, red hash mark curve, happen at quad three. Let N magnetic curl part of plasma be assigned quadrant four. N magnetic curl is locked by S curved space directrix and channeled home to S pole of M_1 central force **F**. N mag curl to S pole of M_1.

Let (+) electric potential of plasma, blue hash mark curve, happen at quad two. Let S magnetic curl part of plasma be assigned quadrant one. S magnetic curl is locked by N curved space directrix and channeled home to N pole of M_1 central force **F**. S mag curl to N pole of M_1.

$\left(\sqrt[3]{2}\right)$ and $\left(\sqrt[3]{2}\right)^{-1}$ (space roots.nb)

$$\text{ParametricPlot}[\{\{\text{Cos}[t],\text{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{t,\frac{t^2}{+4(1)}-1\},\{\sqrt[3]{2},t\},\{t,\frac{t^3}{-2}+\frac{2}{2}\},$$
$$\{t,\frac{t^3}{+2}-\frac{2}{2}\},\{t,\left(\frac{t^3}{+2}-\frac{2}{2}\right)^{-1}\},\{t,\left(\frac{t^3}{-2}+\frac{2}{2}\right)^{-1}\}\},\{t,-\pi,\pi\},\text{PlotRange}\rightarrow\{\{-3,3\},\{\frac{-3}{2},\frac{3}{2}\}\}]$$

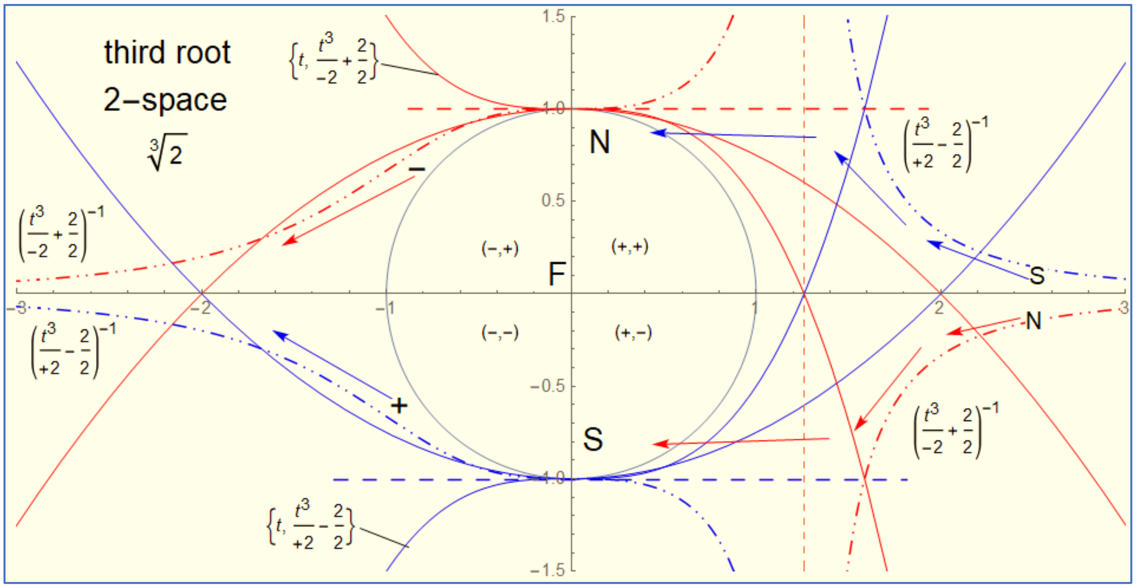


Figure 12: vector field description of accretive phenomena working charge particles of M1M2 G-field stable orbit. Odd indexed roots.

ODD INDICES: **CSDA** odd indices MBS root solution curves $\left(\frac{t^3}{\mp 2}\pm\frac{2}{2}\right)$ sketch <u>unidirectional</u> main body solution curves to find $\left(\sqrt[3]{2}\right)$, approach $\left(\sqrt[3]{2}\right)$ along <u>*negative*</u> side of spin and along negative side of abscissa root ID. When crossing over to <u>*positive*</u> side of spin space, they flatline at N & S vertices before intercepting root abscissa definition ID on rotation plane. Root definition happens on positive side of spin. Both curves continue unidirectional on **CSDA** positive spin side, crossing over to like signed spin infinities on positive side of root abscissa ID with respect to spin. Negative red on to $(-\,spin\ \infty)$ and positive blue on to $(+\,spin\ \infty)$.

Both MBS $\sqrt[3]{2}$ inversed curves $\left(\frac{t^3}{\pm 2}\mp\frac{2}{2}\right)^{-1}$ have two apparitions.

Let MBS *inversed* curves on left side of abscissa ID asymptote $\left(\sqrt[3]{2}\right)$ be (± electric potential) and those on the right of abscissa ID $\left(\sqrt[3]{2}\right)$ be (N&S) magnetic polarity.

The positive blue main body solution curve $\left(\frac{t^3}{+2} - \frac{2}{2}\right)$ approaches plane of rotation along negative side root abscissa ID from $(-spin\ \infty)$, flatlines at polar assignment crossing assigned spin vertices (S) into $(+\ rotation\ \infty)$, defines $\left(\sqrt[3]{2}\right)$ in square space, and climbs $(+\ spin\ \infty)$ along + root abscissa ID.

(+electric potential) of blue +MBS^{-1} $\left(\frac{t^3}{+2} - \frac{2}{2}\right)^{-1}$ (up spin) curve approaches plane of rotation on negative side root abscissa ID from $(-spin\ \infty)$. This up spin curve crosses assigned spin vertices (S) and recedes along negative rotation plane on negative side of accretion.

Magnetic curl of blue MBS^{-1} $\left(\frac{t^3}{+2} - \frac{2}{2}\right)^{-1}$ curve approaches positive root abscissa ID from $(+rotation\ \infty)$ on positive side of accretion. Magnetic S curl is locked on plane of rotation by N pole curved space directrix of M_1, connecting S magnetic curl with N pole of central force M_1.

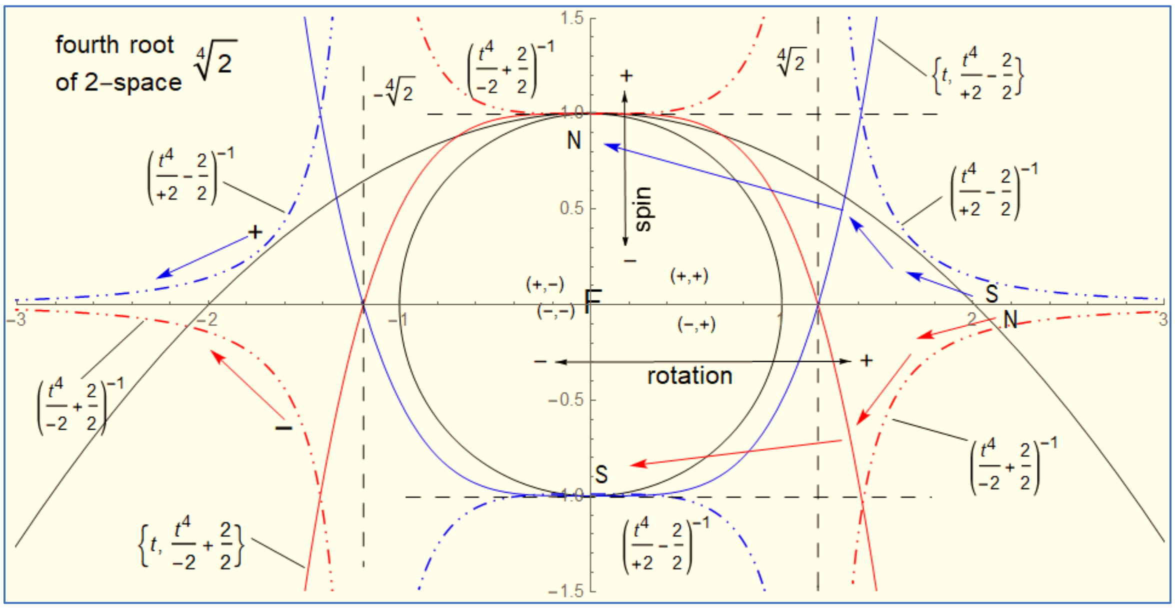
The negative red main body solution curve $\left(\frac{t^3}{-2} + \frac{2}{2}\right)$ approaches plane of rotation along negative side root abscissa ID from $(+spin\ \infty)$, flatlines at polar assignment crossing assigned spin vertices (N) into $(+\ rotation\ \infty)$, defines $\left(\sqrt[3]{2}\right)$ in square space, and falls into $(-spin\ \infty)$ along + root abscissa ID.

(−electric potential) of red −MBS^{-1} $\left(\frac{t^3}{-2} + \frac{2}{2}\right)^{-1}$ (down spin) curve approaches plane of rotation on negative side root abscissa ID from $(+spin\ \infty)$. This down spin curve crosses assigned spin vertices (N) and recedes along negative rotation plane on positive side of accretion.

Magnetic curl of red −MBS^{-1} $\left(\frac{t^3}{-2} + \frac{2}{2}\right)^{-1}$ curve approaches positive root abscissa ID from $(+rotation\ \infty)$ on negative side of accretion. Magnetic N curl is locked on plane of rotation by S pole curved space directrix M_1, connecting N magnetic curl with S pole of central force M_1.

$(\sqrt[4]{2})$ *and* $(\sqrt[4]{2})^{-1}$ (space accretion.nb)

$$\text{ParametricPlot}[\{\{\text{Cos}[t],\text{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{t,\frac{t^2}{+4(1)}-1\},\{\sqrt[4]{2},t\},\{t,\frac{t^4}{-2}+\frac{2}{2}\},$$
$$\{t,\frac{t^4}{+2}-\frac{2}{2}\},\{t,(\frac{t^4}{+2}-\frac{2}{2})^{-1}\},\{t,(\frac{t^4}{-2}+\frac{2}{2})^{-1}\}\},\{t,-\pi,\pi\},\text{PlotRange}\to\{\{-3,3\},\{\frac{-3}{2},\frac{3}{2}\}\}]$$



2. Inversed solution $(\pm\sqrt[4]{2})^{-1}$; $\{t,\left(\frac{t^4}{+2}-\frac{2}{2}\right)^{-1}\},\{t,\left(\frac{t^4}{-2}+\frac{2}{2}\right)^{-1}\}$ become three parts changing shape of MBS $\left(\frac{t^4}{\mp 2}\pm\frac{2}{2}\right)$ into <u>3</u> apparitions.

Inversed $\left(\frac{t^4}{\mp 2}\pm\frac{2}{2}\right)^{-1}$ MBS curves are flipped along spin axis attaching ±MBS^{-1} inversed curve vertices with source assignment enjoyed by MBS. $-\left(\frac{t^4}{-2}+\frac{2}{2}\right)^{-1}$ @ N $\left(\frac{\pi}{2}\right)$ spin radius. Electric part of $-\left(\frac{t^4}{-2}+\frac{2}{2}\right)^{-1}$ is in the third quadrant and magnetic curl is in quadrant four.

Main body solution curves $\{t, \frac{t^1}{-2} + \frac{2}{2}\}, \{t, \frac{t^1}{+2} - \frac{2}{2}\}$ come from negative spin space. If we let rotation plane be that part of space holding and defining accretion space be signed, we could say upside of rotation is +accretion and downside of rotation is −accretion.

Now, let principal −MBS^{-1} $-\left(\frac{t^4}{-2} + \frac{2}{2}\right)^{-1}$ have spin vertex set at N pole of system. −electric potential of plasma is assigned to quadrant (3) and N magnetic curl in Q-4.

Now, let $\left(\frac{t^4}{+2} - \frac{2}{2}\right)^{-1}$ have spin vertex set at S pole of system. −electric potential of plasma is assigned to quadrant (2) and N magnetic curl in Q-1.

$(\sqrt[5]{2})$; $(\sqrt[5]{2})^{-1}$(spin rotation.nb); one construction for both space curves

$$\text{ParametricPlot}[\{\{1\text{Cos}[t],1\text{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{t,\frac{t^5}{-2}+\frac{2}{2}\},\{t,\frac{t^5}{+2}-\frac{2}{2}\},\{\sqrt[5]{2},t\},\left\{t,\left(\frac{t^5}{-2}+\frac{2}{2}\right)^{-1}\right\},$$

$$\left\{t,\left(\frac{t^5}{+2}-\frac{2}{2}\right)^{-1}\right\}\},\{t,-\pi,\pi\},\text{PlotRange}->\{\{-7/2,7/2\},\{-5/2,5/2\}\},\text{AxesOrigin}->\{0,0\}]$$

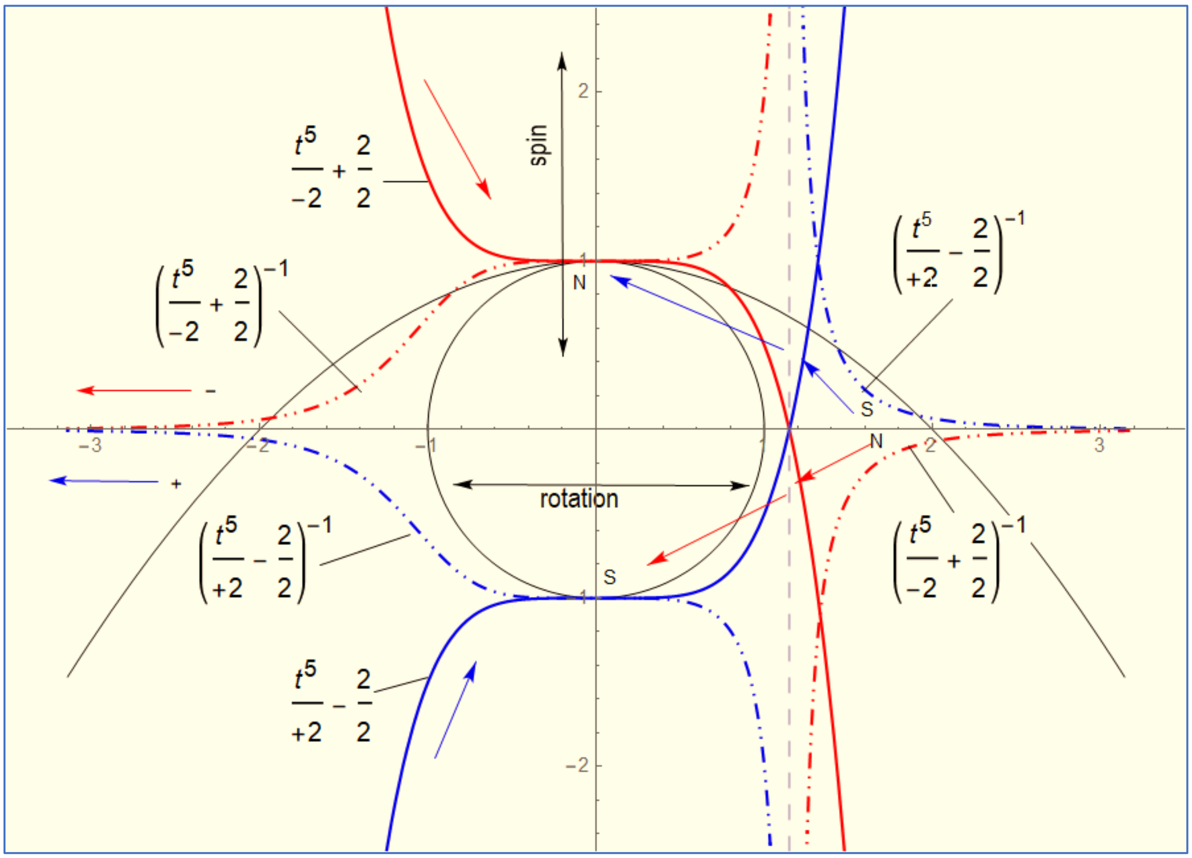


Figure 1: Basic CSDA construction for $\sqrt[5]{2}$ and inverse of MBS. Vector maping included, Red is negative composition and blue is positive composition of G-field potential, motive energy time curve, electromagnetic accretion control and organization of M1M2 (N<->S and (±) charged particles in a stable system orbit.

Both MBS $(\sqrt[5]{2})$ inversed curves $\left(\frac{t^5}{\pm 2}\mp\frac{2}{2}\right)^{-1}$ have two apparitions.

Let MBS *inversed* curves on left side of abscissa ID asymptote $(\sqrt[5]{2})$ be (± electric potential) and those on the right of abscissa ID $(\sqrt[5]{2})$ be (N&S) magnetic polarity.

The positive blue main body solution curve $\left(\frac{t^5}{+2}-\frac{2}{2}\right)$ approaches plane of rotation along negative side root abscissa ID from $(-spin\ \infty)$, flatlines at polar assignment crossing assigned spin vertices (S) into $(+\ rotation\ \infty)$, defines $\left(\sqrt[5]{2}\right)$ in square space, and climbs $(+\ spin\ \infty)$ along + root abscissa ID.

(+electric potential) of blue MBS^{-1} $\left(\frac{t^5}{+2} - \frac{2}{2}\right)^{-1}$ (up spin) curve approaches plane of rotation on negative side root abscissa ID from $(-spin\ \infty)$. This up spin curve crosses assigned spin vertices (S) and recedes along negative rotation plane on negative side of accretion.

Magnetic curl of blue MBS^{-1} $\left(\frac{t^5}{+2} - \frac{2}{2}\right)^{-1}$ curve approaches positive root abscissa ID from $(+rotation\ \infty)$ on positive side of accretion. Magnetic S curl is locked on plane of rotation by N pole curved space directrix M_1, connecting S magnetic curl with N pole of central force M_1.

The negative red main body solution curve $\left(\frac{t^5}{-2} + \frac{2}{2}\right)$ approaches plane of rotation along negative side root abscissa ID from $(+spin\ \infty)$, flatlines at polar assignment crossing assigned spin vertices (N) into $(+\ rotation\ \infty)$, defines $\left(\sqrt[5]{2}\right)$ in square space, and falls into $(-spin\ \infty)$ along + root abscissa ID.

(−electric potential) of red MBS^{-1} $\left(\frac{t^5}{-2} + \frac{2}{2}\right)^{-1}$ (down spin) curve approaches plane of rotation on positive side root abscissa ID from $(+spin\ \infty)$. This down spin curve crosses assigned spin vertices (N) and recedes along negative rotation plane on positive side of accretion.

Magnetic curl of red MBS^{-1} $\left(\frac{t^5}{-2} + \frac{2}{2}\right)^{-1}$ curve approaches positive root abscissa ID from $(+rotation\ \infty)$ on negative side of accretion. Magnetic N curl is locked on plane of rotation by S pole curved space directrix M_1, connecting N magnetic curl with S pole of central force M_1.

END PART THREE

Root curves of radicand greater than 2

The first line was a Euclidean definition, uniquely defined by two endpoints.

A $\longleftrightarrow$ B (shortest distance between two points).

A Euclidean line has no width, has meter of length only: $\overleftrightarrow{AB}$

A **CSDA** curved space line also has two endpoints. Curvature and radius of that curvature, two endpoints presenting two *viewpoints* residing opposite each other, positioned from, across, and separated by two infinities. Radius, a conceptual length we can hold and measure populates macro infinite square space. Curvature, the inverse of radius, is a number only and has residence confined to curved space micro infinity. Curvature evaluation does carry a mathematical assignment. Center of Curvature, a square space anchor, a physical endpoint, a reach across our dual infinity existance finding a co-anchor when discovering a radius for metered curvature in countless imagined curves of square space.

For each radius of curvature in macro space there can exist one and only one curvature of that radius in micro space.

The following two constructions are about micro infinity curvature (κ) residing with central force space curve potential M_1, and curved space macro infinity radii (r) under control of **F**. Changing indices of main body root solution curves affect channeling control by M_1 domains of accretion, let alone extreme compression of our suns solar center effected by greater Black Hole mass/ratio extending accretion control over our system by our galactic center.

PART IV

CSDA curved space analytic construction of $\left(\sqrt[8]{7}\right)$. (radii of curvature).

EVEN INDICES   Work curvature.nb

Let $\left(\sqrt[i]{n}\right)$ radican (n) be G-field mass volume (arithmeticly) increasing intensity for **CSDA** independent potential curve M_1 from displacement radius of (2) to displacement radius (7) $\left(\frac{7}{2}\mathrm{Cos}[t], \frac{7}{2}\mathrm{Sin}[t]\right)$, with system curvature evaluation $\left(\frac{7}{2}\right)$. Let index be exponential compression of M_1 G-field central force **F** by external gravity experience by an exponetial factor $(M_1)^8$.

parametrics for $\sqrt[8]{7}$

$$\text{ParametricPlot}[\{\{\tfrac{7}{2}\text{Cos}[t],\tfrac{7}{2}\text{Sin}[t]\},\{t,\frac{t^2}{-4\left(\frac{7}{2}\right)}+\frac{7}{2}\},\{\sqrt[8]{7},t\},\{-\sqrt[8]{7},t\},\{t,(\frac{t^8}{-2}+\frac{7}{2})\},$$
$$\{t,(\frac{t^8}{+2}-\frac{7}{2})\},\{t,-(\tfrac{7}{2})^{-1}\}\},\{t,-8,8\},\text{PlotRange}\text{->}\{\{-7,7\},\{-4,4\}\},\text{AxesOrigin}\text{->}\{0,0\}]$$

EVEN INDEX $\sqrt[8]{7}$ Work curvature.nb

Note abscissa root definition ID enters independent **CSDA** discovery space as square space chords evenly distributed around central force spin axis.

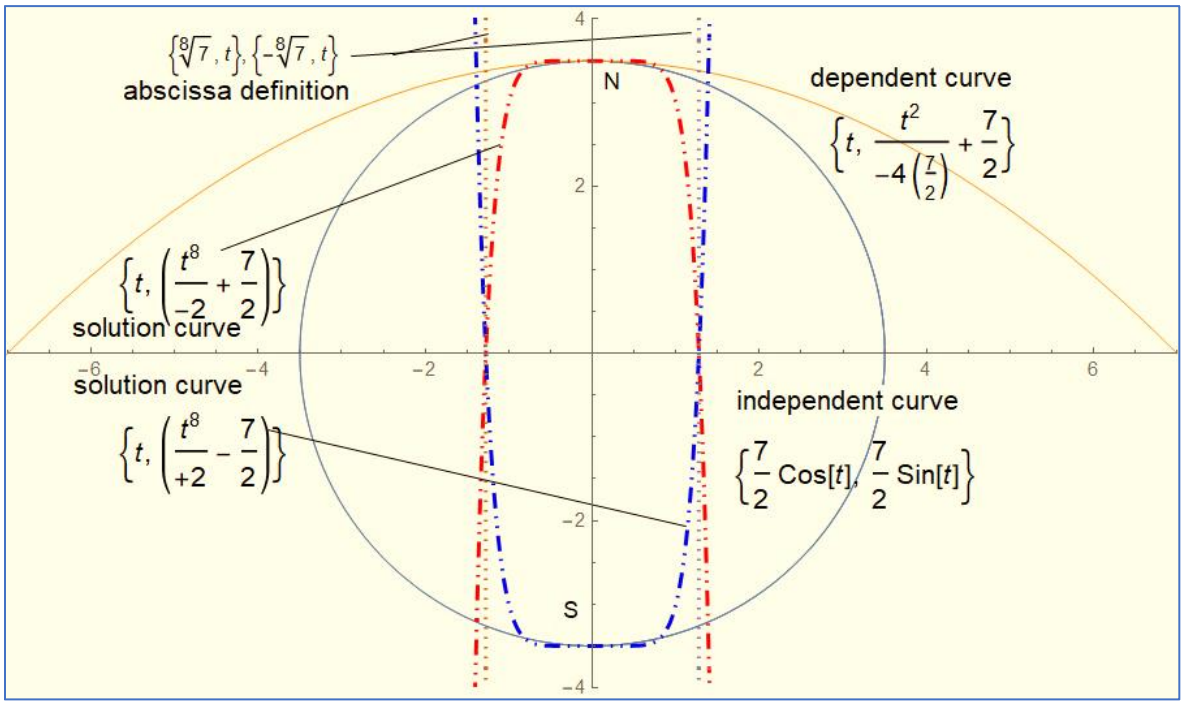


Figure 13: Basic CSDA construction for central force root discovery of displacement radius (7); $\sqrt[8]{7}$.

N and S vertices of spin diameter are exposed to open space of macro infinity providing an open connection between macro infinity and micro infinite space.

Curve Space MBS root solution curves $\sqrt[8]{7}$ seem to close interior space of **CSDA** discovery curve, insulating interior micro infinity curvature population from macro infinity space from induced external Gfield effects. Negative red root solution curve to N spin pole and positive blue solution curve to S pole.

Inversed even indices dependent main body solution curves $\left\{t, \left(\frac{t^8}{\pm 2} \mp \frac{7}{2}\right)^{-1}\right\}$

$$\mathrm{Sin}[t]\}, \{t, \frac{t^2}{-4\left(\frac{7}{2}\right)} + \frac{7}{2}\}, \{\sqrt[8]{7}, t\}, \{-\sqrt[8]{7}, t\}, \{t, \left(\frac{t^8}{-2} + \frac{7}{2}\right)\}, \{t, \left(\frac{t^8}{+2} - \frac{7}{2}\right)\}, \left\{t, \left(\frac{t^8}{\pm 2} \mp \frac{7}{2}\right)^{-1}\right\}$$
$$\{t, -(\frac{7}{2})^{-1}\}\}, \{t, -8, 8\}, \mathrm{PlotRange} -> \{\{-7, 7\}, \{-4, 4\}\}, \mathrm{AxesOrigin} -> \{0, 0\}]$$

Both main body solution curves $\{t, \left(\frac{t^8}{-2} + \frac{7}{2}\right)^{-1}\}, \{t, \left(\frac{t^8}{+2} - \frac{7}{2}\right)^{-1}\}$, positive and negative, when inversed, change protection perspective and become open to macro infinity external influence from Gfield environs greater than mass volume M_1. Both MBS curves, when inversed, flip vertex opening parts of curve inviting macro infinity access, up to, but not beyond, mass/volume asymptotic curvature value of M_1. M_1 independent curvature asymptote is defined by the red line curvature definition $\{t, \left(\frac{7}{2}\right)^{-1}\}$ sourced from the independent curve $\left\{\frac{7}{2}\mathrm{Cos}[t], \frac{7}{2}\mathrm{Sin}[t]\right\}$. Curvature evaluation of central force **F** G-field neighborhood is pushback against the Black Hole central force intrusion. Both inverted main body solution curves (N&S) are forbid crossover access to reach central force **F** and system rotation plane of M_1. Both inversed main body solution curves $\{t, \left(\frac{t^8}{-2} + \frac{7}{2}\right)^{-1}\}, \{t, \left(\frac{t^8}{+2} - \frac{7}{2}\right)^{-1}\}$, flatline when meeting linear curvature limits provided by independent **CSDA** discovery curves.

Inversed main body solution curves, both red and blue, are forever trapped between (±) abscissa ID of the root definition and linear curvature limits of independent discovery curve. Note disassociation of main body solution curve electromagnetic composition:

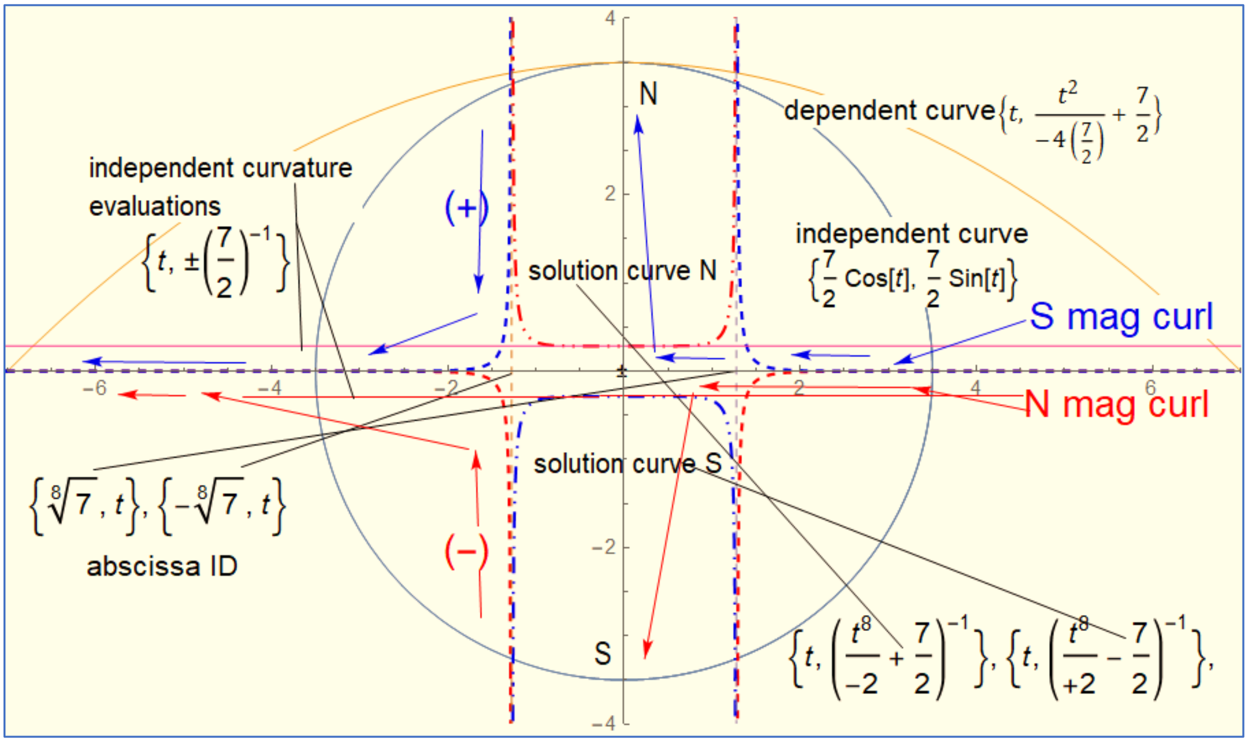


Figure 14: basic CSDA of inversed root solution curves $\{t, \left(\frac{t^8}{-2} + \frac{7}{2}\right)^{-1}\}, \{t, \left(\frac{t^8}{+2} - \frac{7}{2}\right)^{-1}\}$

$(\pm\ electric\ potential\ and\ (N\&S)\ magnetic\ polarity)$

Let electromagnetic composition composing Plasma be two fields, electricity and magnetism. When composition of —MBS^{-1} red main body solution curve is inversed, $(-electric\ potential\ )$ part of main body (red solution) approach system rotation plane along $(-spin\ \infty)$, outside asymptote frame $(-root\ abscissa\ ID)$. Once crossing the independent red line curvature definition $\left\{t, -\left(\frac{7}{2}\right)^{-1}\right\}$, turn left receding into negative rotation infinity on negative side of accretion.

N magnetic curl attending (−) ISM plasma potential counterpart of N −MBS^{-1} comes from $(+rotation\infty)$ along negative side of accretion approaching $(+root\ abscissa\ ID)$. N curl is forbidden to cross $\left\{t, -\left(\frac{7}{2}\right)^{-1}\right\}$ curvature asymptote back to open macro space, and connects with central force **F** S spin pole. N plasma curl with S spin polarity.

The main body blue solution curve, when inversed, is forbidden crossing the independent curvature definition $\{t, -\left(\frac{7}{2}\right)^{-1}$ and is protected with (±) root ID as asymptote insulator, keeping negative charge character composition of the red main body solution curve isolated from direct contact with the positive nature of the blue main body solution curve.

(+ electric potential) of main body (blue solution) approach rotation from $(+\, spin\ \infty)$ along negative side of $(-root\ abscissa\ ID)$. Once crossing the independent curvature ID definition $\left(t, +\left(\frac{7}{2}\right)^{-1}\right)$, turn to follow negative rotation infinity on the positive side of accretion.

Magnetic curl attending (+) ISM plasma potential counterpart of S $+MBS^{-1}$ comes from $(+rotation\infty)$ along positive side of accretion approaching $(+root\ abscissa\ ID)$. S curl is forbidden to cross $\left\{t, +\left(\frac{7}{2}\right)^{-1}\right\}$ curvature asymptote and connects with central force **F** N spin pole. S plasma curl with N spin polarity.

Notice crush phenomena of Galactic Black Hole on central force F of M_1. Along with crush phenomena held at bay by independent curvature asymptotes of central force **F**, we see stringent accretion control by extreme influence of Black Hole control of our M_1M_2 system, compressing solar spin rotation accretion control to a precise linear number line for inverse square analytics.

CSDA construction curvature and radii of curves of roots having odd integer indices.

$(\sqrt[7]{7})$

$$\text{ParametricPlot}[\{\{\tfrac{7}{2}\text{Cos}[t], \tfrac{7}{2}\text{Sin}[t]\}, \{t, \frac{t^2}{-4\left(\frac{7}{2}\right)} + \frac{7}{2}\}, \{t, (\frac{t^7}{+2} - \frac{7}{2})\}, \{t, (\frac{t^7}{-2} + \frac{7}{2})\},$$
$$\{\sqrt[7]{7}, t\}, \{-\sqrt[7]{7}, t\}\}, \{t, -8, 8\}, \text{PlotRange} -> \{\{-7, 7\}, \{-4, 4\}\}, \text{AxesOrigin} -> \{0, 0\}]$$

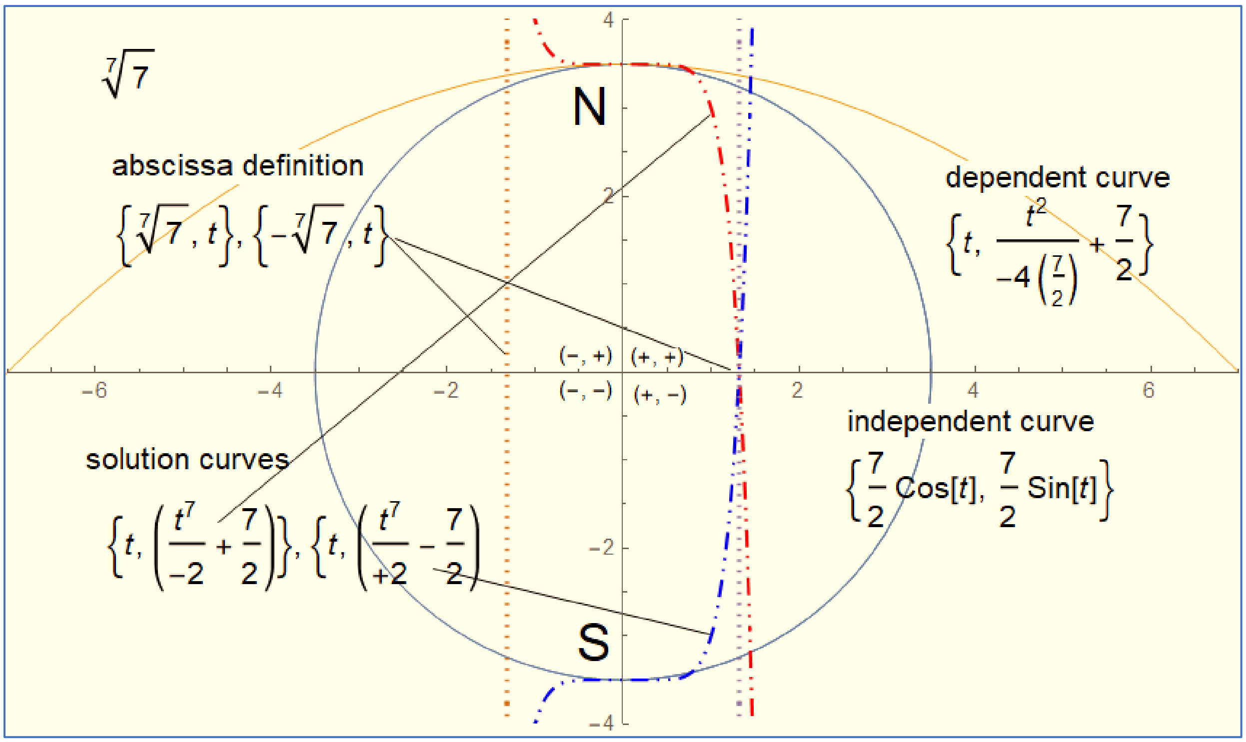


Figure 15: **CSDA** macro space radii evaluation of roots having odd indices: $\{\sqrt[7]{7}, t\}, \{-\sqrt[7]{7}, t\}$. (work curvature.nb)

CSDA macro space odd indices radii connection sketch unidirectional solution curves, approach **CSDA** parametric geometry function along ***negative*** side of spin infinity along negative side of abscissa root ID. When crossing over to ***positive*** side of spin space, they flatline at N & S vertices before diving toward root definition on rotation plane. Root definition happens on positive side of spin.

Both curves continue unidirectional on **CSDA** positive spin side, crossing over to like signed spin infinities on positive side of root abscissa ID. Negative red on to $(-\,spin\ \infty)$ and positive blue on to $(+\,spin\ \infty)$.

$(\sqrt[7]{7})^{-1}$ curved space curve analytics

$$\text{ParametricPlot}[\{\{\tfrac{7}{2}\text{Cos}[t],\tfrac{7}{2}\text{Sin}[t]\},\{t,\frac{t^2}{-4\left(\frac{7}{2}\right)}+\frac{7}{2}\},\{t,\left(\frac{t^7}{+2}-\frac{7}{2}\right)^{-1}\},\{t,\left(\frac{t^7}{-2}+\frac{7}{2}\right)^{-1}\},$$
$$\{\sqrt[7]{7},t\},\{-\sqrt[7]{7},t\},\{t,(\tfrac{7}{2})^{-1}\},\{t,-(\tfrac{7}{2})^{-1}\},\{14^{1/7},t\}\},\{t,-8,8\},\text{PlotRange}\text{->}\{\{-7,7\},\{-4,4\}\},\text{AxesOrigin}\text{->}\{0,0\}]$$

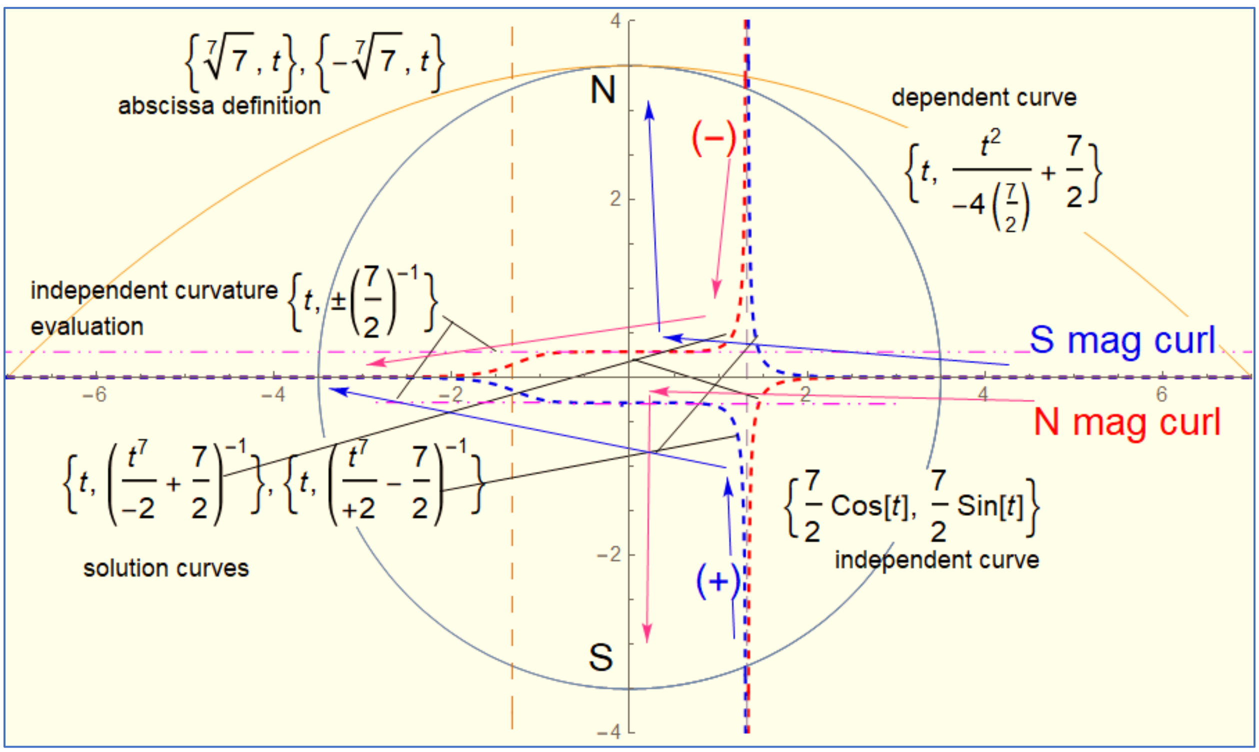


Figure 16: curved space view of inversed odd indices. Odd indices of square space radii produce unidirectional solution curves. Change shape and asymptotes when inversed: $\{t,\left(\frac{t^7}{+2}-\frac{7}{2}\right)^{-1}\},\{t,\left(\frac{t^7}{-2}+\frac{7}{2}\right)^{-1}\}$

Both inversed $(\text{MBS})^{-1}$ for $(\sqrt[7]{7})$ have only two composition parts. (±) electric potential (negative side of +abscissa ID) and an accompanying magnetic (N&S) polarity (+ side) of +root abscissa ID.

(— electric potential) of red $(\text{MBS})^{-1}$, $\left(\frac{t^7}{-2}+\frac{7}{2}\right)^{-1}$ approach rotation from $(+spin\ \infty)$ on negative side +root abscissa ID. Upon reaching the positive independent curvature limit $\left(\frac{7}{2}\right)^{-1}$, flatlines and turns left, (eyesight into paper), and collapses onto rotation plane just past negative root ID, and recedes out along negative rotation infinity on positive side of accretion.

N magnetic curl of red $(MBS)^{-1}$, $\left(\frac{t^7}{-2}+\frac{7}{2}\right)^{-1}$ approach positive abscissa ID from $(+\,rotation\ \infty)$ on negative side of accretion. Magnetic N curl is locked onto rotation plane by negative curvature ID and channeled into micro infinity independent **CSDA** curve holding S magnetic pole of central force **F**.

(+electric potential) of blue $(MBS)^{-1}$, $\left(\frac{t^7}{+2}-\frac{7}{2}\right)^{-1}$, approaches rotation along negative side of root abscissa root ID from $(-spin\ \infty)$. Upon reaching the negative independent curvature limit $\left(\frac{-7}{2}\right)^{-1}$, flat lines and turns left (eyesight into paper), and collapses onto rotation plane just past negative root ID, and recedes out to negative infinity along square space rotation plane on negative side of accretion.

QED: Odd indices solution curves and their inverse.

ALΣXANDΣR

Reading from the SandBox

PART3: Transcendental Indices $\{\sqrt[\pi]{2}, t\}$

$$\text{ParametricPlot}[\{\{\frac{2}{2}\text{Cos}[t], \frac{2}{2}\text{Sin}[t]\}, \{t, \frac{t^2}{-4\left(\frac{2}{2}\right)} + \frac{2}{2}\}, \{t, \frac{t^\pi}{-2} + \frac{2}{2}\}, \{t, \frac{t^\pi}{+2} - \frac{2}{2}\},$$
$$\{\sqrt[\pi]{2}, t\}\}, \{t, -4{,}4\}, \text{PlotRange}\text{->} \{\{-3{,}3\}, \{-3{,}3\}\}, \text{AxesOrigin}\text{->} \{0{,}0\}]$$

By (my own) convention, I use signing of dependent curve @ $\left(\frac{\pi}{2}\right)$ spin vertices $\left(\frac{+t^n}{-4(p)} + r\right)$. I also use color so as to follow spin vertex solution curves as we

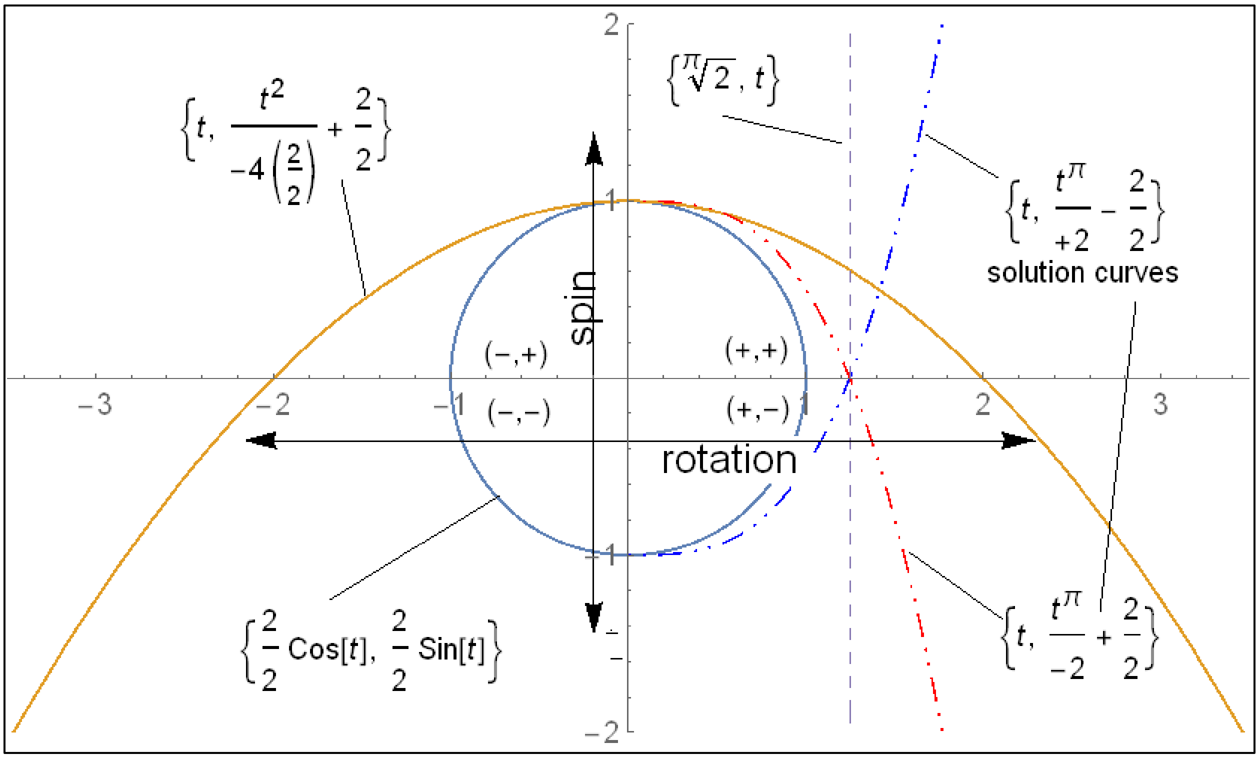


Figure 17: transcendental root $\{\sqrt[\pi]{2}, t\}$, macro space radii view. transcendental roots 1.nb

change constructed space view by inversing dependent parts of solution curves.

We see $\left(\frac{\pi}{2}\right)$ spin vertex is primitive origin for red negative solution curve.

We see $\left(\frac{3\pi}{2}\right)$ spin vertex is primitive origin for blue positive solution curve.

Transcendental solution curves source from positive side of spin. negative solution exists above rotation and positive solution below rotation.

inverse curvature evaluation of transcendental $\{\sqrt[\pi]{2}, t\}$

Same convention. Red negative main body solution curve still sources from $\left(N; \frac{\pi}{2}\right)$ spin vertex and blue positive main body solution curve still sources from $\left(S; \frac{3\pi}{2}\right)$ spin vertex

$$\text{ParametricPlot}[\{\{\tfrac{2}{2}\text{Cos}[t], \tfrac{2}{2}\text{Sin}[t]\}, \{t, \frac{t^2}{-4\left(\frac{2}{2}\right)} + \frac{2}{2}\}, \{t, \left(\frac{t^\pi}{+2} - \frac{2}{2}\right)^{-1}\}, \{t, \left(\frac{t^\pi}{-2} + \frac{2}{2}\right)^{-1}\},$$
$$\{\sqrt[\pi]{2}, t\}\}, \{t, -4{,}4\}, \text{PlotRange} -> \{\{-7/2, 7/2\}, \{-7/2, 7/2\}\}, \text{AxesOrigin} -> \{0{,}0\}]$$

Note: both main body solution curves still source from positive side of spin.

Inversing solution curves; $\{t, (\frac{t^\pi}{+2} - \frac{2}{2})^{-1}\}, \{t, (\frac{t^\pi}{-2} + \frac{2}{2})^{-1}\}$, causes $(positive \text{ or } negative)$ spirit carried by each main body curve, to become separated from primitive source point of origin. Both root solution curves source from +side (spin axis) vertices. When solution curves are inversed, the abscissa root ID becomes asymptotic keeping separate main body solution curves from accompanying plasma character curves.

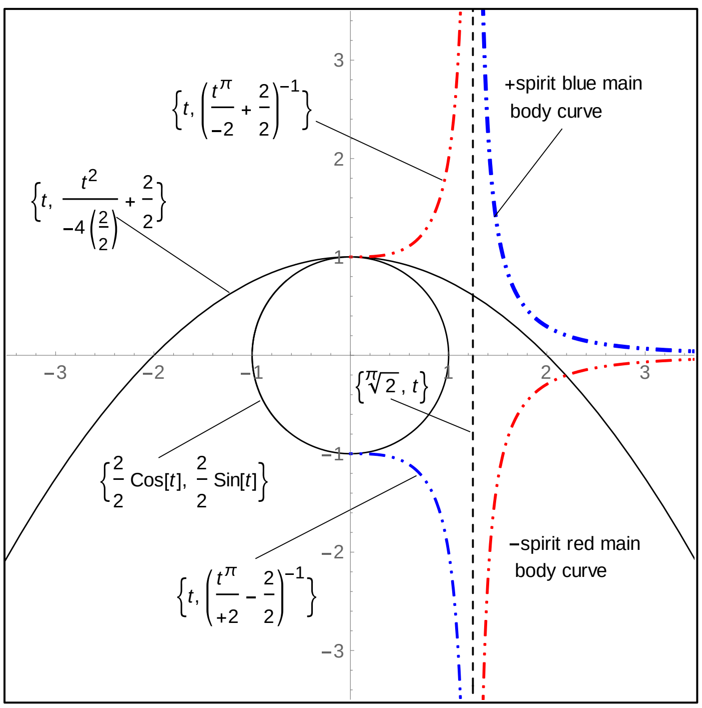


Figure 18: transcendental root $\{\sqrt[\pi]{2}, t\}$ inversed, micro space curvature view. transcendental roots 1.nb

Note distribution of spirit signing connected with inversed main body curve. Negative spirit south of rotation and positive spirit north of rotation.

Blue spirit approach is from $(+spin\infty)$, turns right (eyesight into paper) and recedes to $(+rotation\infty)$.

Red spirit approach is from $(-spin\infty)$, turns right (eyesight into paper) and recedes to $(+rotation\infty)$.

CSDA demonstration $(\sqrt[\pi]{3})$ center of curvature to macro space radii evaluation

$$\text{ParametricPlot}[\{\{\tfrac{3}{2}\text{Cos}[t],\tfrac{3}{2}\text{Sin}[t]\},\{t,\frac{t^2}{-4\left(\frac{3}{2}\right)}+\frac{3}{2}\},\{t,(\frac{t^\pi}{-2}+\frac{3}{2})\},\{t,(\frac{t^\pi}{+2}-\frac{3}{2})\},\{t,\frac{2}{3}\},\{t,\frac{-2}{3}\},$$
$$\{t,(\frac{t^\pi}{-2}+\frac{3}{2})\},\{t,(\frac{t^\pi}{+2}-\frac{3}{2})\},\{\sqrt[\pi]{3},t\}\},\{t,-\frac{7}{2},\frac{7}{2}\},\text{PlotRange}->\{\{-\frac{7}{2},\frac{7}{2}\},\{-\frac{5}{2},\frac{5}{2}\}\},\text{AxesOrigin}->\{0,0\}]$$

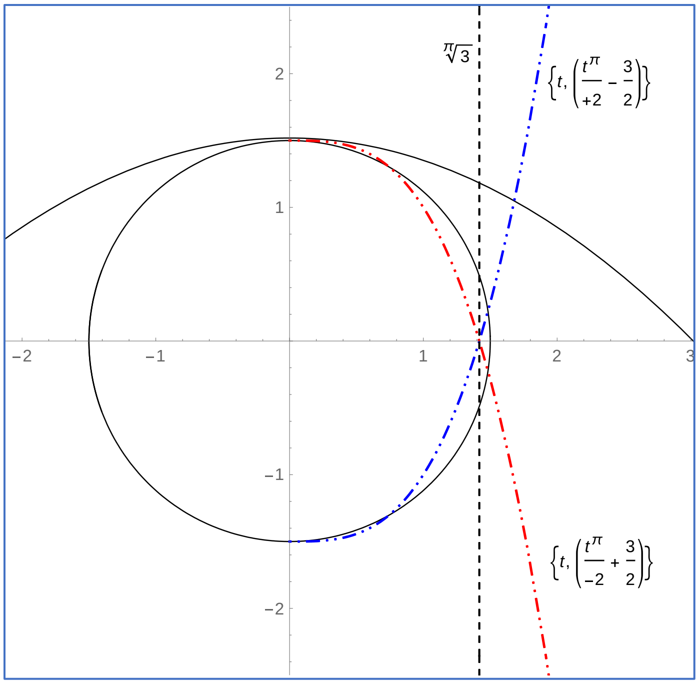


Figure 19: : transcendental root $\{\sqrt[\pi]{3},t\}$ macro space radii view.
transcendental roots 1.nb

Red is negative main body solution curve.

Blue is positive main body solution curve

Radicand number has been changed from (2) to (3)

Root solution has become part of micro infinity discovery curve.

Both main body solution curves still source from N&S discovery curve spin vertices.

We see $\left(\frac{\pi}{2}\right)$ spin vertex is primitive origin for red negative solution curve.

We see $\left(\frac{3\pi}{2}\right)$ spin vertex is primitive origin for blue positive solution curve.

Transcendental solution curves source from positive side of spin. negative solution exists above rotation and positive solution below rotation.

CSDA demonstration $\left(\sqrt[\pi]{3}\right)$ Inversed Curvature view evaluation

$$\text{ParametricPlot}[\{\{\tfrac{3}{2}\text{Cos}[t],\tfrac{3}{2}\text{Sin}[t]\},\{t,\frac{t^2}{-4\left(\frac{3}{2}\right)}+\frac{3}{2}\},\{t,(\frac{t^\pi}{-2}+\frac{3}{2})\},\{t,(\frac{t^\pi}{+2}-\frac{3}{2})\},\{t,\frac{2}{3}\},\{t,\frac{-2}{3}\},\{t,\left(\frac{t^\pi}{-2}+\frac{3}{2}\right)^{-1}\},$$
$$\{t,(\frac{t^\pi}{+2}-\frac{3}{2})^{-1}\},\{\sqrt[\pi]{3},t\}\},\{t,-\frac{7}{2},\frac{7}{2}\},\text{PlotRange}->\{\{-\frac{7}{2},\frac{7}{2}\},\{-\frac{5}{2},\frac{5}{2}\}\},\text{AxesOrigin}->\{0,0\}]$$

Abscissa ID $\{\sqrt[\pi]{3},t\}$ and independent curve $\{\frac{3}{2}\text{Cos}[t],\frac{3}{2}\text{Sin}[t]$ curvature limits $\{t,\frac{2}{3}\},\{t,\frac{-2}{3}\}$ are relative spin/rotation asymptotes of magnitude 3 inverse square connector.

Solution curves still source from positive side of spin @ $\left(\frac{\pi}{2}\ and\ \frac{3\pi}{2}\right)$ vertices. But *inversed* solution curves source from positive side of spin @ $(+\ and\ -)$ curvature evaluation of independent **CSDA** curve $\{\frac{3}{2}\text{Cos}[t],\frac{3}{2}\text{Sin}[t]\}$ as relative rotation asymptotes.

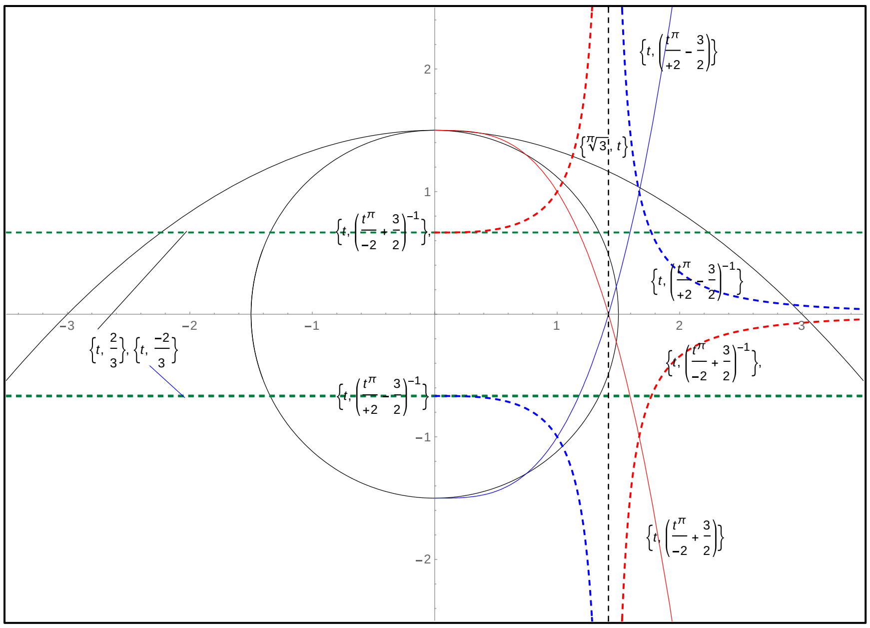


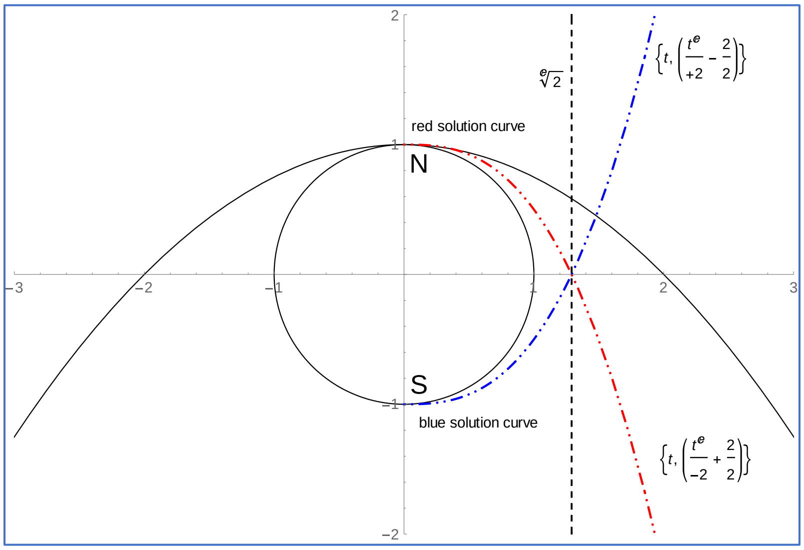
Figure 20: **CSDA** curved space parametric geometry construction for magnitude root $\{\sqrt[\pi]{3},t\}$ inverse. Note inversed curves no longer source from spin vertices, but still source from positive side spin axis along curvature limits of independent central force curve. transcendental roots 1.nb

Positive spirit of blue main body solution curve approaches rotation plane from $(+spin\infty)$, turns right (eyesight into paper) and recedes to $(+rotation\infty)$.

Red spirit approach is from $(-spin\infty)$, turns right (eyesight into paper) and recedes to $(+rotation\infty)$.

$$\{\sqrt[e]{2}, t\}$$

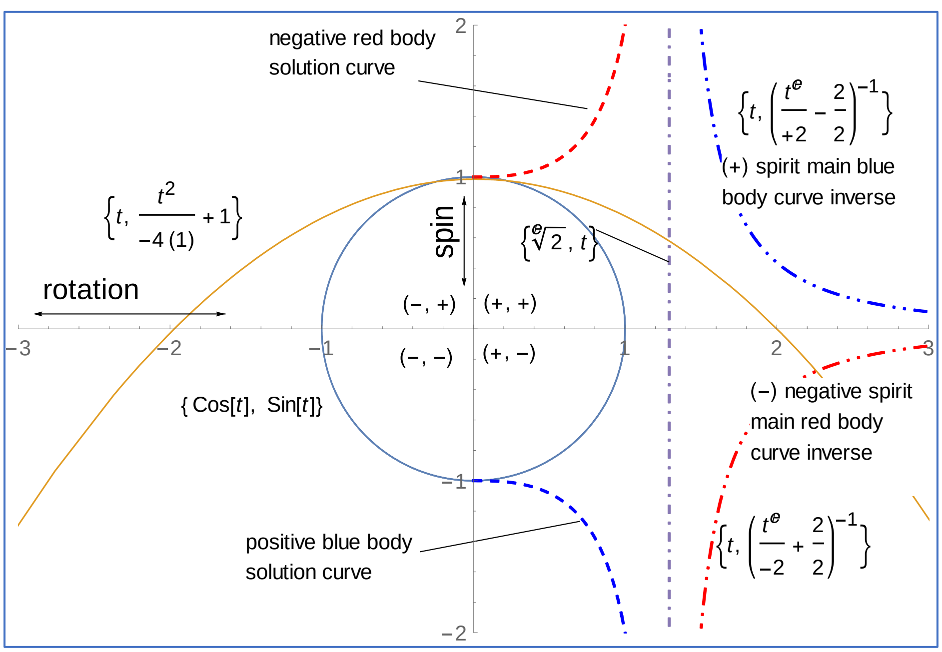
$$\text{ParametricPlot}[\{\{\text{Cos}[t], \text{Sin}[t]\}, \{t, \frac{t^2}{-4(1)} + 1\}, \{t, (\frac{t^e}{-2} + \frac{2}{2})\}, \{t, (\frac{t^e}{+2} - \frac{2}{2})\}, \{\sqrt[e]{2}, t\}\}, \{t, -\pi, \pi\}, \text{PlotRange}\text{->} \{\{-3,3\}, \{-2,2\}\}, \text{AxesOrigin}\text{->} \{0,0\}]$$



Exponential (e) as index for radicand (2) seems to possess same parameters as (π).

Figure 21: CSDA parametric geometry construction of transcendental $\{\sqrt[e]{2}, t\}$. transcendental roots 1.nb

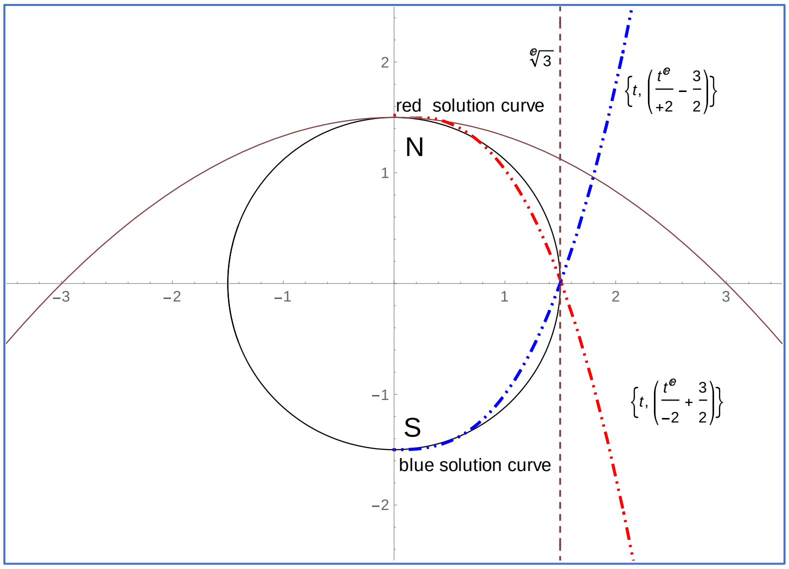
$$\text{ParametricPlot}[\{\{\text{Cos}[t], \text{Sin}[t]\}, \{t, \frac{t^2}{-4(1)} + 1\}, \{t, \left(\frac{t^e}{-2} + \frac{2}{2}\right)^{-1}\}, \{t, \left(\frac{t^e}{+2} - \frac{2}{2}\right)^{-1}\}, \{\sqrt[e]{2}, t\}\}, \{t, -9, 9\}, \text{PlotRange}\text{->} \{\{-3,3\}, \{-2,2\}\}, \text{AxesOrigin}\text{->} \{0,0\}]$$



Inversing Exponential (e) as index for radicand (2) seems to possess same parameters as (π) as index for radicand (2).

Figure 22: CSDA parametric geometry construction of transcendental $\{\sqrt[e]{2}, t\}$. transcendental roots 1.nb

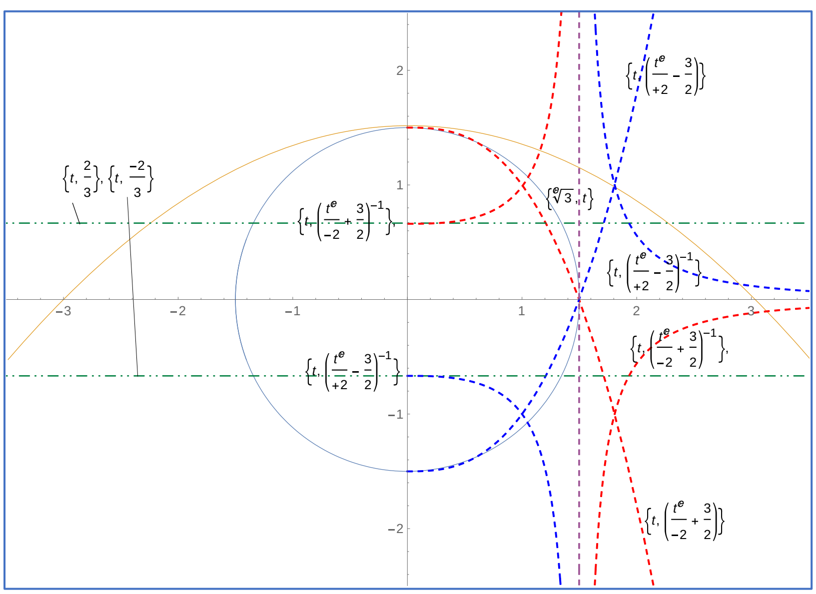
$$\text{ParametricPlot}[\{\{\tfrac{3}{2}\text{Cos}[t],\tfrac{3}{2}\text{Sin}[t]\},\{t,\tfrac{t^2}{-4\left(\frac{3}{2}\right)}+\tfrac{3}{2}\},\{t,(\tfrac{t^e}{-2}+\tfrac{3}{2})\},\{t,(\tfrac{t^e}{+2}-\tfrac{3}{2})\},\{t,\tfrac{2}{3}\},\{t,\tfrac{-2}{3}\},\{t,(\tfrac{t^e}{-2}+\tfrac{3}{2})\},$$
$$\{t,(\frac{t^e}{+2}-\frac{3}{2})\},\{\sqrt[e]{3},t\}\},\{t,-\frac{7}{2},\frac{7}{2}\},\text{PlotRange}\text{−>}\{\{-\frac{7}{2},\frac{7}{2}\},\{-\frac{5}{2},\frac{5}{2}\}\},\text{AxesOrigin}\text{−>}\{0,0\}]$$



$\{\sqrt[e]{3},t\}\}$ Exponential (e); transcendental sameness.

Figure 23: CSDA parametric geometry construction of transcendental $\{\sqrt[e]{3},t\}$
transcendental roots 1.nb

$$\text{ParametricPlot}[\{\{\frac{3}{2}\text{Cos}[t],\frac{3}{2}\text{Sin}[t]\},\{t,\frac{t^2}{-4\left(\frac{3}{2}\right)}+\frac{3}{2}\},\{t,(\frac{t^e}{-2}+\frac{3}{2})\},\{t,(\frac{t^e}{+2}-\frac{3}{2})\},\{t,\frac{2}{3}\},\{t,\frac{-2}{3}\},\{t,\left(\frac{t^e}{-2}+\frac{3}{2}\right)^{-1}\},\{t,\left(\frac{t^e}{+2}-\frac{3}{2}\right)^{-1}\},$$
$$\{\sqrt[e]{3},t\}\},\{t,-\frac{7}{2},\frac{7}{2}\},\text{PlotRange}\text{−>}\{\{-\frac{7}{2},\frac{7}{2}\},\{-\frac{5}{2},\frac{5}{2}\}\},\text{AxesOrigin}\text{−>}\{0,0\}]$$



$\left(\sqrt[e]{3}\right)^{-1}$

exponential (e) transcendental sameness. Note main body solution curves source from discovery curve curvature limits.

Figure 24: CSDA parametric geometry construction of transcendental $\{\sqrt[e]{3}^{-1},t\}$ inverse. transcendental roots 1.nb

transcendental index for radicand (8)

$$\text{ParametricPlot}[\{\{\tfrac{8}{2}\text{Cos}[t],\tfrac{8}{2}\text{Sin}[t]\},\{t,\tfrac{1}{4}\},\{t,\tfrac{-1}{4}\},\{t,\frac{t^2}{-4\left(\frac{8}{2}\right)}+\tfrac{8}{2}\},\{t,\left(\frac{t^\pi}{-2}+\frac{8}{2}\right)^{-1}\},\{t,\left(\frac{t^\pi}{+2}-\frac{8}{2}\right)^{-1}\},\{\sqrt[\pi]{8},t\}\},$$
$$\{t,-9,9\},\text{PlotRange}\to\{\{-10,10\},\{-6,6\}\},\text{AxesOrigin}\to\{0,0\}]$$

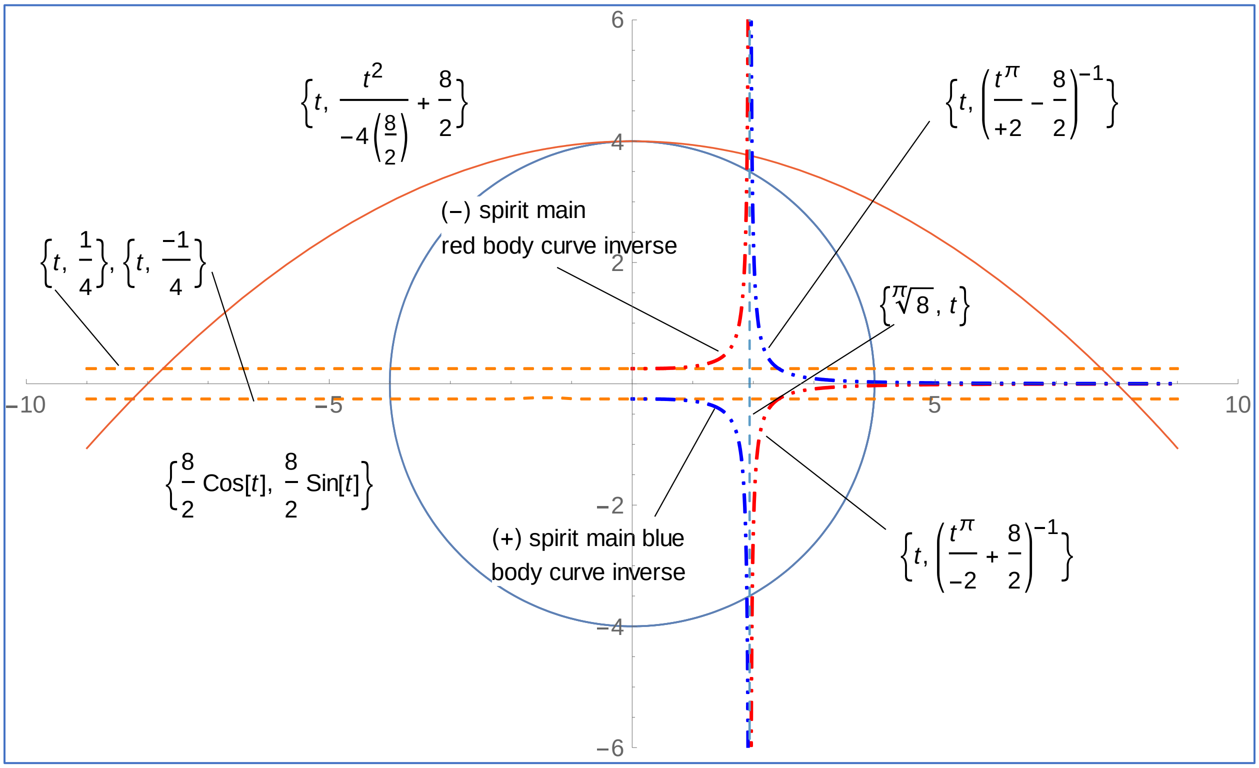


Figure 25: CSDA curved space construction of transcendental inversed root $\{\sqrt[\pi]{8},t\}$

Even indices have negative and positive abscissa root identification. Curvature limits of discovery become relative rotation asymptotes. Root abscissa identities become relative spin asymptotes. Together, they give a precise infinite volume of operating space for **F**.

Odd indices use the positive abscissa root ID as relative spin asymptote. curvature limits of discovery are relative rotation asymptotes.

Part 4

Phylosphical inquiry into interger radicand description of a centrist philosophy for constructing roots of magnitude for, 1-space, 2-space, 3-space, and 4-space.

When constructing roots of space curve magnitudes, I find no discernible change when conducting indices on radicand two. All root solutions (red&blue) source from **CSDA** spin axis N&S. I intend to use radicand (2) as descriptor of Natural 2-space central force construction. Background of such a construction is Cartesian. Let the origin be central force **F**. let $\left(\frac{\pi}{2}\&\frac{3\pi}{2}\right)$ direction radii spin, and $(\pi\&2\pi)$ direction radii rotate.

$$\mathrm{ParametricPlot}[\{\{\mathrm{Cos}[t],\mathrm{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{t,\frac{t^2}{+4(1)}-1\},\{\sqrt[1]{2},t\},\{t,\frac{t^1}{-2}+\frac{2}{2}\},\{t,\frac{t^1}{+2}-\frac{2}{2}\},$$

$$\{t,(\frac{t^1}{+2}-\frac{2}{2})^{-1}\},\{t,(\frac{t^1}{-2}+\frac{2}{2})^{-1}\},\{t,1\},\{t,-1\}\},\{t,-\pi,\pi\},\mathrm{PlotRange}\to\{\{-3,3\},\{\frac{-3}{2},\frac{3}{2}\}\}]$$

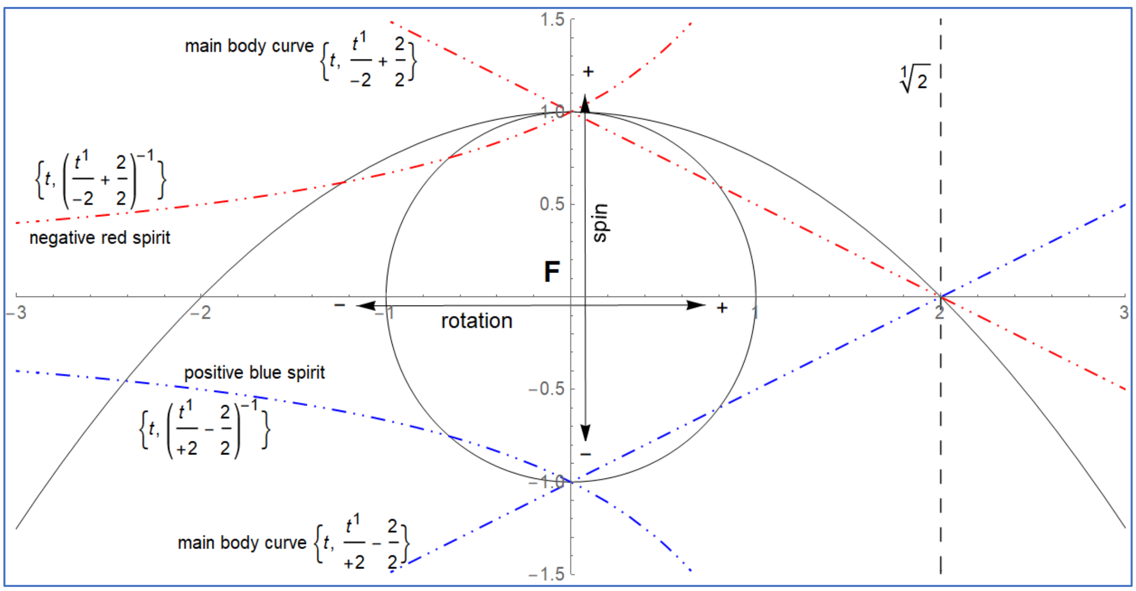


Figure 26: CSDA parametric geometry construction of 1st index linear (degree 1) root of Natural 2-space. Scratch curves.nb

- $\{t,\frac{t^1}{-2}+\frac{2}{2}\},\{t,\frac{t^1}{+2}-\frac{2}{2}\}$. Negative and positive main body solution curves. Macro space radii into micro infinity curvature. Linear view into curved space .
- $\{t,(\frac{t^1}{+2}-\frac{2}{2})^{-1}\},\{t,(\frac{t^1}{-2}+\frac{2}{2})^{-1}\}$. Inversed main body curves; linear root solution are straight line to abscissa index of root. Inverse of linear solution curves are no longer straight becoming curved? No second degree exponents to produce curve?

Degree two (index 2) rotation magnitude root of Natural 2-space

$$\text{ParametricPlot}[\{\{\text{Cos}[t],\text{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{t,\frac{t^2}{+4(1)}-1\},\{\sqrt[2]{2},t\},\{t,\frac{t^2}{-2}+\frac{2}{2}\},$$
$$\{t,\frac{t^2}{+2}-\frac{2}{2}\},\{t,(\frac{t^2}{+2}-\frac{2}{2})^{-1}\},\{t,(\frac{t^2}{-2}+\frac{2}{2})^{-1}\}\},\{t,-\pi,\pi\},\text{PlotRange}\to\{\{-3,3\},\{\frac{-3}{2},\frac{3}{2}\}\}]$$

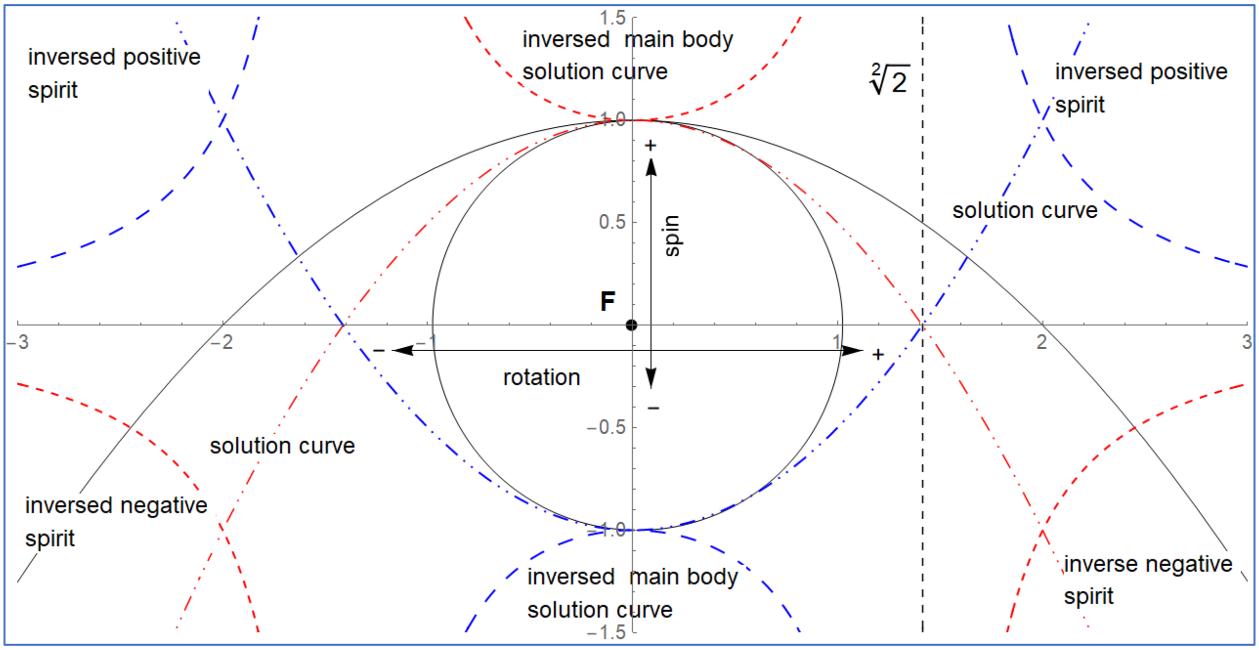


Figure 27: CSDA curved space construction of 2-space rotation magnitude, $\pm\sqrt[2]{2}$ solution curves and their inverse. (Scratch curves.nb)

- $\{t,\frac{t^2}{-2}+\frac{2}{2}\},\{t,\frac{t^2}{+2}-\frac{2}{2}\}$. Main body solution curve ($-red\ and + blue$).
- $\{t,(\frac{t^2}{+2}-\frac{2}{2})^{-1}\},\{t,(\frac{t^2}{-2}+\frac{2}{2})^{-1}\}$. Main body curves inversed. We see three dissociation of main body solution. Main body inverse appears at spin axis. Red $(-)$ inverse at N spin vertex and blue $(+)$ inverse at S spin vertex. Both curves have vertices touching curvature evaluation. I did not construct the discovery curve limits, they are spin vertex tangent, normal with spin axis. The parametric discription will be
- Negative inverse: $\{t,1\}$. This is $(+)$ curvature limit of discovery curve; red body inverse is forbidden contact with rotation plane. Its vertex opens out to positive spin infinity.
- Positive inverse: $\{t,-1\}$ This is $(-)$ curvature limit of discovery curve; blue body inverse is forbidden contact with rotation plane. Its vertex opens out to negative spin infinity.
- We have two spirits for each main body. (+) spirit parts above rotation and negative spirit parts below rotation.

Degree three (index 2) rotation magnitude root of Natural 2-space

$$\text{ParametricPlot}[\{\{\text{Cos}[t],\text{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{t,\frac{t^2}{+4(1)}-1\},\{\sqrt[3]{2},t\},\{t,\frac{t^3}{-2}+\frac{2}{2}\},\{t,\frac{t^3}{+2}-\frac{2}{2}\},\{t,(\frac{t^3}{+2}-\frac{2}{2})^{-1}\},\{t,(\frac{t^3}{-2}+\frac{2}{2})^{-1}\}\},\{t,-3\pi,3\pi\},\text{PlotRange}\to\{\{-5,7\},\{-3,7\}\}]$$

Solution curves and their inverse touch discovery curve (N&S) spin vertices. Inversed curves, spirit and main body become asymptote sensitive with rotation and abscissa ID of root $\sqrt[3]{2}$. One root and one abscissa root ID with degree 3 exponents.

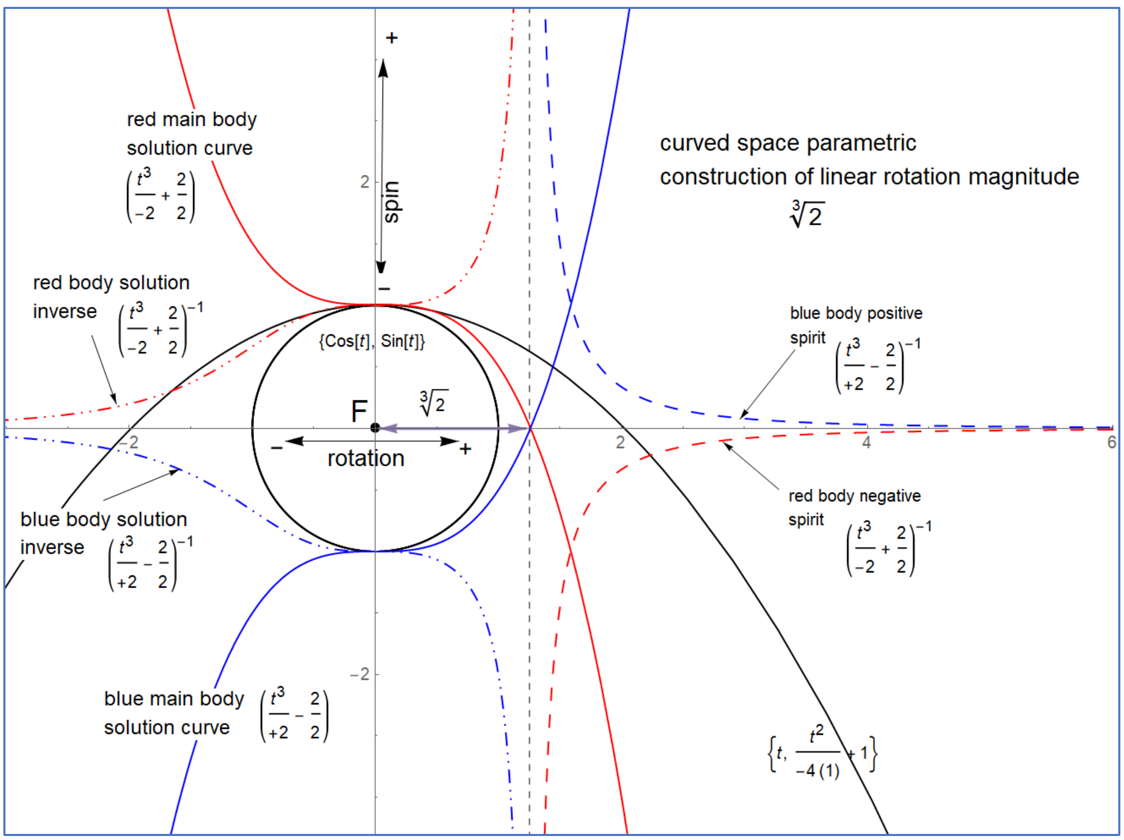


Figure 28: CSDA construction of $\sqrt[3]{2}$ central force rotation magnitude. (space roots.nb)

Index 4

$$\mathrm{ParametricPlot}[\{\{\mathrm{Cos}[t],\mathrm{Sin}[t]\},\{t,\frac{t^2}{-4(1)}+1\},\{t,\frac{t^2}{+4(1)}-1\},\{\sqrt[4]{2},t\},\{t,\frac{t^4}{-2}+\frac{2}{2}\},\{t,\frac{t^4}{+2}-\frac{2}{2}\},\{t,(\frac{t^4}{+2}-\frac{2}{2})^{-1}\},\{t,(\frac{t^4}{-2}+\frac{2}{2})^{-1}\}\},\{t,-\pi,\pi\},\mathrm{PlotRange}\rightarrow\{\{-3,3\},\{\frac{-3}{2},\frac{3}{2}\}\}]$$

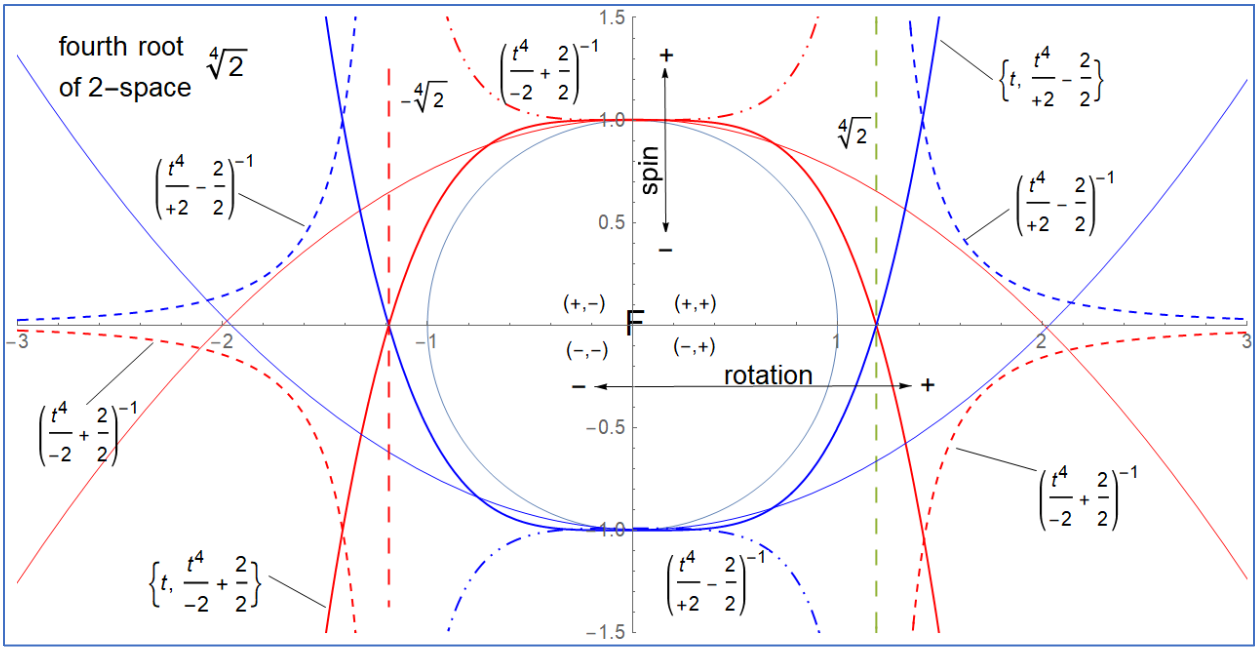


Figure 29: CSDA curved space construction of degree 4 root on central force rotation magnitude. (space roots.nb)

I find no conclusive evidence that time is the 4th dimensional creature we suspect it to be. At least not in our mathematical (exponent) sense. I lay out degree of exponent, as described by Gauss, quantifying a numerical solution for roots.

Degree 1. Linear space. No exponents greater than 1 will return 1 solution.

Degree 2. The first space curve, pretty much explored by Galileo and Calculus of Leibniz and Sir Isaac. No exponents greater than 2 will return 2 solution.

Degree 3. Cubic 3-dimensional space. Up, down, and around. Spin rotation geometry of a **CSDA**. No exponents greater than 3 will return 3 solution.

Degree 4. Just another exponent.

As to time being the 4th dimension, dimension of what? We know time is an operator, a collection of frames, how many how fast? A mouse dancing on a pad? A bullet shearing a playing card length wise?

I say let time operate as a concept member of the word continuum, a complicated concept.

TIME & DEGREE EXPONENT

Degree 1. Sir Isaac's 1st law. A ball bearing set in motion will travel a straight line till stopped by time.

Degree 2. Galileo found that things fall with change of space per unit time dependent on central force G-field acceleration. Terminal velocity tells us how much time to impact.

Degree 3. 3 space motion vectors of Frenet. (v) tangent normal to orbit curve; (a) acceleration force connecting M_2 with M_1. And torque; changing 3-space orbit curves by altering velocity with changing acceleration per unit time.

Degree 4. (?)

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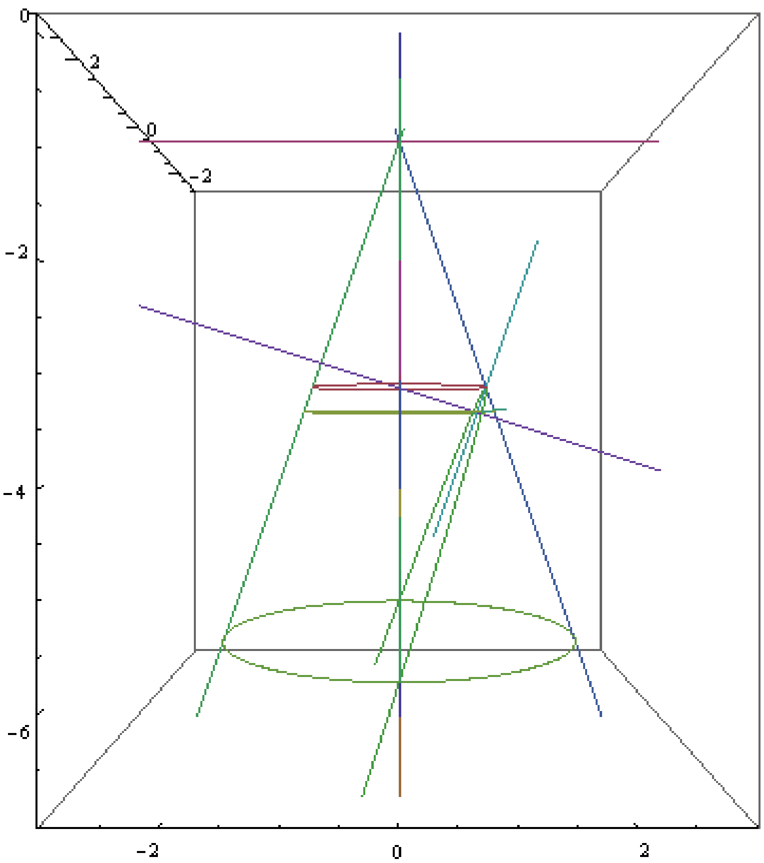
Using computer parametric geometry code to construct the focus of an Apollonian parabola section within a right cone.

"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

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alexander@sandboxgeometry.com

The computer is my sandbox, the unit circle my compass, and the focal radius of the unit parabola my straight edge.

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC

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 energy curves when we explore changing acceleration phenomena.

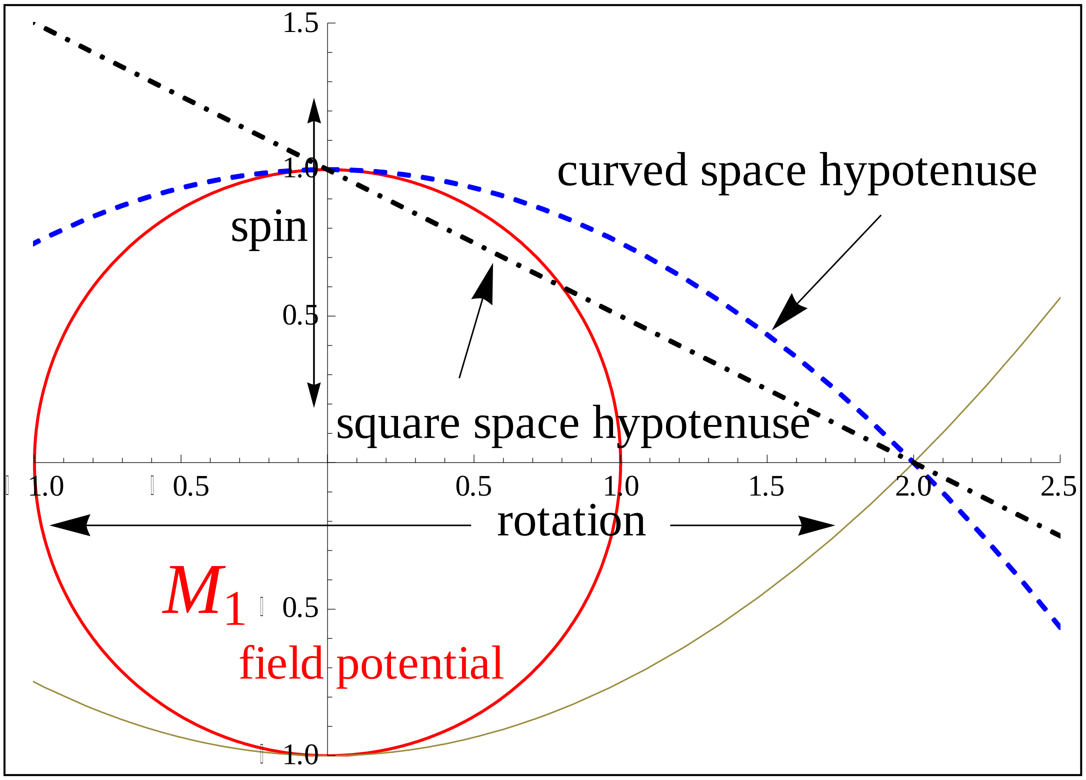

Figure 30: CSDA demonstration of a curved space hypotenuse and a square space hypotenuse together.

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.

ALΣXANDΣR