ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC

| S&T3 energy curves | December 2023 |
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On elliptical mechanical energy curves working two central force fields. One for vibration and one for motion.

Motion and vibration energies.

15 pages; 2708 words

A treatise on mechanical energy curves working two central force fields. Orbits of Gravity and nuclear vibration in the Quantum World.

ALΣXANDΣR

## SPIN, ROTATION, ACCRETION a planet collective.

The biggest problem I've found in constructing nuclear collections is shaping of. $(M_1 M_2)$ gravity field shaped motive rotation space for our system, is accretion. A collection of free assemblies of planets, moons, comets, and $(M_2)$ orbits collected about the equatorial belt of $(M_1)$. I expect a sample space assembly of nuclear spinning rotating like elements will mimic a Globular Cluster of Classic Big space, not an accreted collection. Nuclear assemblies follow different parametrics than period time dimensions of our planet group. Perception of like element nuclear assemblies, collectives, is the purview of temperature parametrics.

Central force mechanical energy curves of both systems (Big&Small) should map a standard Keplerian elliptical major/minor axis configuring movement with time as rotation or happening (vibration). Latent heat does not get along with nuclear vibration curves. Latent heat determined transition of state can be mapped, using SBG Latent Heat Thermometer constructions.

Before exploring transition energies of like elements, attention need be spent on nuclear rotation and spin of like elements about each other. Spin first.

Because of conceptual quantum heat chaos, I assemble atoms of an element into three very specific collectives.

First collective. Gas chaos is packed with single atoms.

Collective two. Liquid chaos is the first bond alignment I imagine. I propose the first two atom bond will be along spin not rotation. I perceive this spin collective to suffer physical limits, requiring heat permits for existence. Gas to liquid bonding experience of two like atoms in transition of state, is critical with respect to temperature. So too is liquid to solid.

The third collective would be solid, also involving heat permissions.

NUCLEAR SPIN, ROTATION, AND ACCRETION

It is this third atom that brings fruition to the concept of rotation and spin. Because of nuclear parametrics, three atoms in transition, deined to be solid, cannot collect along spin, forbidden by temperature to do so. Why? The roiling, heaving motion of liquid will become fixed when captured by the domain of solid parametrics, this is the pain of a third nuclear dance partner. Frozen, incapacitated, unable to move as water and gas are free to do. Collective assemblies of like atoms into solid transition, is along the Cartesian record domain, a $(\pi \leftrightarrow 2\pi)$ field registration, no longer a north south range thing.

Liquid is an assembly of fixed strings of varying lengths that cannot be compressed. The roiling heaving motion of liquid combines and shears string lengths till calmed by still waters. Still water may enjoy a population of stable string length happenings until environ temperature incursion mandates destruction of liquid perception with an assaults on the nuclear north south liquid bond string length.

S&T3: it's about my development of quantum thermo-dynamic parametric geometry. The nuclear mechanical energy curves of a like element gathering. And a parametric geometry for their 'assemblage' suffering heat assault on the central force structure providing state of perception.

I did so using elliptical mechanical energy. I acknowledge the first elliptical mechanical energy curves as Keplerian. I use them.

His realization of a plane ellipse propensity to fit period acceleration of $(M_2)$ set in motion S&T2, exploring changing accelerations of our Gravity Field.

I need to find an aggregable Keplerian parametrics that will fit both space, square space and curved space.

The following excerpts are about the difficulty of bringing mechanical orbits of $(M_2)$ Big Space and mechanical action/rotation of nuclear elements in Small Space unto an agreeable Keplerian geometry of elliptical energy curves. They source from my presentation at Wolfram's first Virtual Tech Conference 2020.

## Friday, August 14, 2020

Thought processes for Wolfram Virtual Tech Conference Oct. 2020
BEGGININGS

### Curved Space Division Assembly

- I have spent considerable time researching the parametric geometry of Central Force mechanical energy using computer-based math technology. I found a standard model construction for both nuclear and gravity field mechanical energy curves. I call this computer based mechanical contrivance a Curved Space Division Assembly (**CSDA**).

ABSTRACT:

Constructing a bonding profile of nuclear energy curves structuring two like atoms are built with two parametric geometry sections. One section will be atom1 and the other section is atom2. Let Atom1 be south of atom2 and both atoms be separated by a bond plane. Spin axis bond comprising two atoms involves conserved symmetry. Fold any two like atoms along the spin axis letting east meet west or fold on the bond plane of rotation letting north meet south, and profile symmetry of same element nuclear curves will be conserved. Only profile geometry will change to accommodate increasing atomic 'weight' by utilizing Z# as electron cloud radius to construct period elements. Parametric unity geometry is used to construct atom one. A unit circle, ± slope one tangent and tangent normal constructed at +2 Latus Rectum endpoint of ecloud dependent curve parabola, and square nuclear shaping hyperbola asymptotes, are all used to parameterize constructing a nuclear standard model. Protium Hydrogen ($^1$H) is the primitive source standard model I use to construct period elements. Constructions differ by using element Z#. Parametric geometry lines and curves used to construct atom1 are extrapolated to construct atom2. Resulting parametric construction of two atom bond will be used to explain the role electromagnetism plays in strengthening bond of nuclear fields.
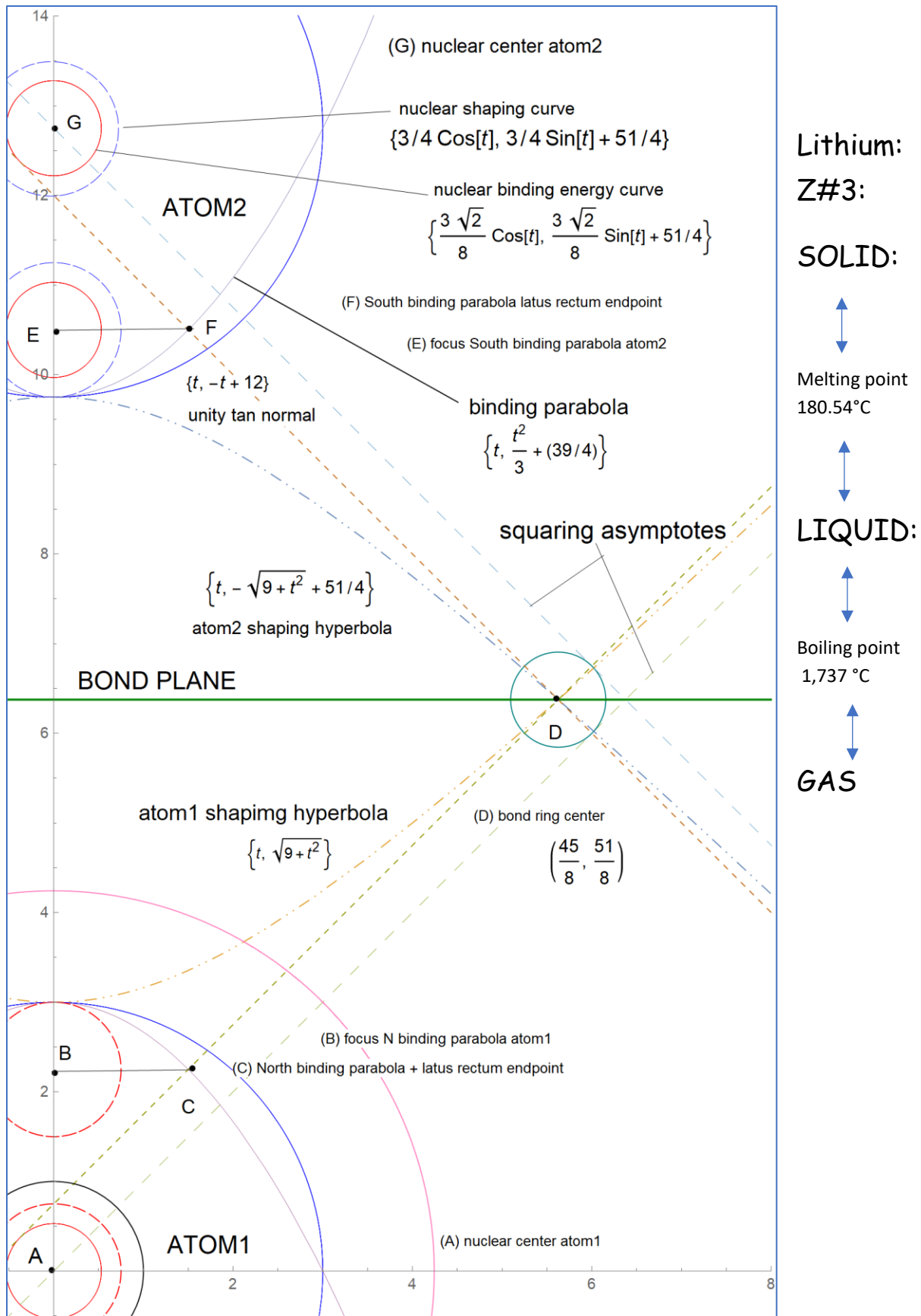
Lithium Z#3

Let atom(1) be cartesian center.

Shaping hyperbolae are spring loaded. They repel high energy bond inquiries when chaos energy is too high. To slow an approach ain't gonna' happen either.

The next construction maps placement of 2, than 3, Lithium atoms.

(G) nuclear center atom2

nuclear shaping curve
$\{3/4\,\cos[t],\ 3/4\,\sin[t] + 51/4\}$

nuclear binding energy curve
$\left\{\dfrac{3\sqrt{2}}{8}\cos[t],\ \dfrac{3\sqrt{2}}{8}\sin[t] + 51/4\right\}$

ATOM2

(F) South binding parabola latus rectum endpoint

(E) focus South binding parabola atom2

$\{t, -t + 12\}$

unity tan normal

binding parabola
$\left\{t, \dfrac{t^2}{3} + (39/4)\right\}$

squaring asymptotes

$\left\{t, -\sqrt{9 + t^2} + 51/4\right\}$

atom2 shaping hyperbola

BOND PLANE

atom1 shapimg hyperbola
$\left\{t, \sqrt{9 + t^2}\right\}$

(D) bond ring center
$\left(\dfrac{45}{8}, \dfrac{51}{8}\right)$

(B) focus N binding parabola atom1

(C) North binding parabola + latus rectum endpoint

ATOM1

(A) nuclear center atom1

Lithium:

Z#3:

SOLID:

Melting point
180.54°C

LIQUID:

Boiling point
1,737 °C

GAS

## On Constructing Keplerian Elliptical Mechanical Energy Curves

My first construction will be three atom Lithium bond(Z#3). I use a free space Cartesian coordinate system. The only item anchored at origin is nucleus atom one. For this inquiry, I have two active atoms (sourced from gas; i.e. falling temp) as liquid string collective. An inquiry event is occuring, iniated by approach of atom(3) into liquid string spin space.
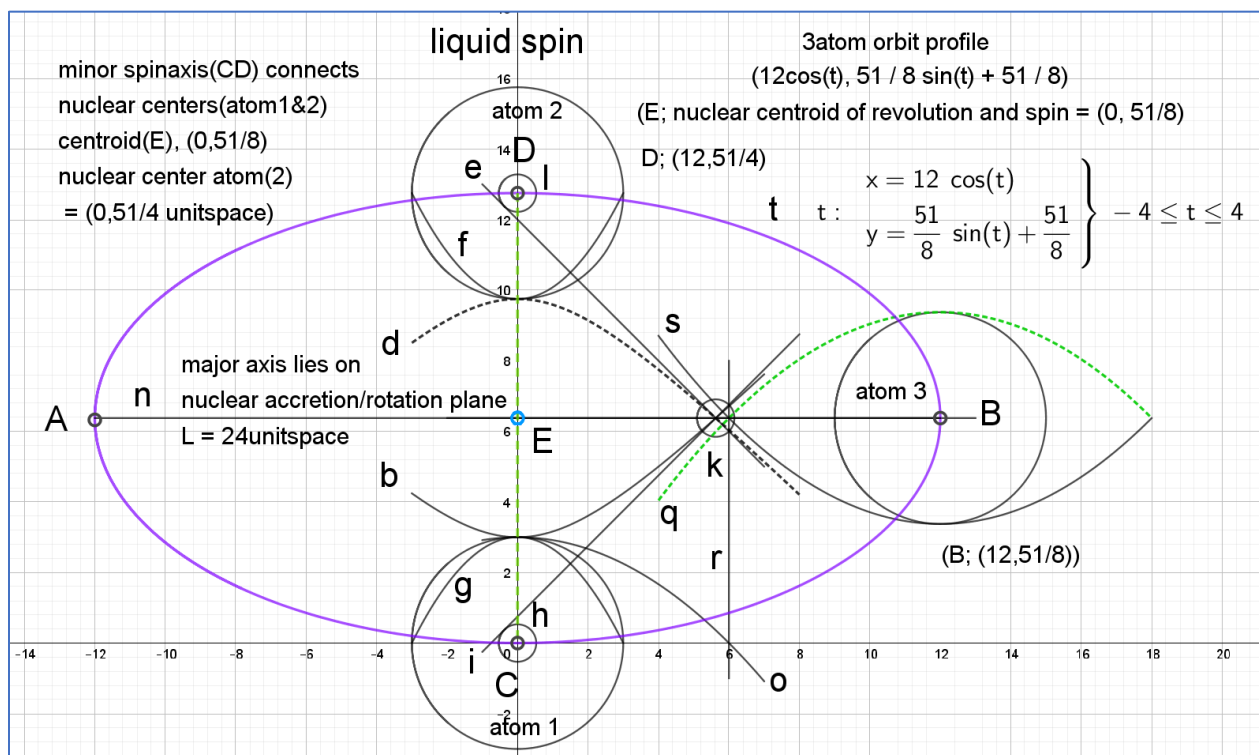
### Three atom configuration for lithium Z#3.



liquid spin

minor spinaxis(CD) connects
nuclear centers(atom1&2)
centroid(E), (0,51/8)
nuclear center atom(2)
= (0,51/4 unitspace)

atom 2

3atom orbit profile
$(12\cos(t), 51/8 \sin(t) + 51/8)$
(E; nuclear centroid of revolution and spin = (0, 51/8)

D; (12,51/4)

$$\left. t : \begin{array}{l} x = 12 \ \cos(t) \\ y = \dfrac{51}{8} \ \sin(t) + \dfrac{51}{8} \end{array} \right\} -4 \le t \le 4$$

major axis lies on
nuclear accretion/rotation plane
L = 24unitspace

atom 3

B

(B; (12,51/8))

atom 1

*Figure 1*: S&T3 nuclear.

Nuclear center($C$) atom(1) be at origin. Let nuclear liquid bond parametrics determine placement of atom(2) center($D$).

Hyperbolic shaping curves($d$&$b$) operate along spin; control (gas to liquid) collision chaos permits. Atom(3), to consummate a solid perception, need hook into bonding ring centroid with proper temp permissions. Curves($i$&$e$) are nuclear binding parabola tangent normals. Tangent normals and shaping hyperbolas intersect in space and determine bond plane($n$) of two like elements.

Allow me to point out appearance of a gravity field **CSDA** connected with atom(1). **CSDA** is relative proportional in micro and macro space, therefore maintain similar analytics.

If we replaced atom one with ($M_1$), we find period time curve($o$) intersecting domain integer(6) @ curve($r$), as displacement radius of discovery curve(3), atom(1). Integer six can be a displacement radius of a gravity field inquiry or serve as a limiting term definition of nuclear domain approach. The electric field of lithium atoms limits approach of atom(3) inquiry on liquid bond plane with halt at domain integer(6). Curves($q\&s$) are similar to curve($o$) of atom(1).

I reference curve($r$) as a nuclear gravity field hook. Note curve($r$) is just inside the nuclear bond ring curve($k$). Let curve($h$), moved from atom(1) nuclear center, and becomes bond ring($k$). Bond ring($k$) is a centroid focus energy ellipse using spin range as major axis and bond ring diameter as minor axis; encapsulated within Keplerian mechanical energy curve($t$). Definition curves($q\&s$) belong to atom(3) and limit rotation inquiry at abscissa(6). Leaving configuration of dual elliptical axes and prescribed curves unperturbed.

This parametric provides abscissa ID for inquiry curves. Rotational inquiry curves, not spin inquiry. Spin inquiry is polar, rotation inquiry is accretive. One for gravity field equatorials and one for nuclear spin. Abscissa(6) ID controls approach by atom(3) seeking nuclear mechanical rotation in accord with temperature permissions. Let rotation inquiry of atom(3) succeed with respect to environ temps.

Keplerian curve($t$) is a map of nuclear accretive rotation motion around liquid spin with respect to centroid($E$) as center to a *fixed* rotation major diameter of solid space. A plane geometry ellipse, in nuclear solid space cannot alter acceleration without foci. Embedded in the accretive diameter is (E) the control centroid of spins nuclear Keplerian. Note the flip, Big Space major axis is domain. Small Space major axis is spin. Range, the major diameter of liquid string energy holding two atoms together is about to be more than perturbed.

Elliptical curve($t$) parametrics: Major diameter($24 units space$), minor diameter($12.75 units$). curve is static, no influence in nuclear space happenings. No foci, subject to a steady state centroid.

Allow event happening for atom(3) inquiry a success for solid perception connect with liquid string atom(1&2).
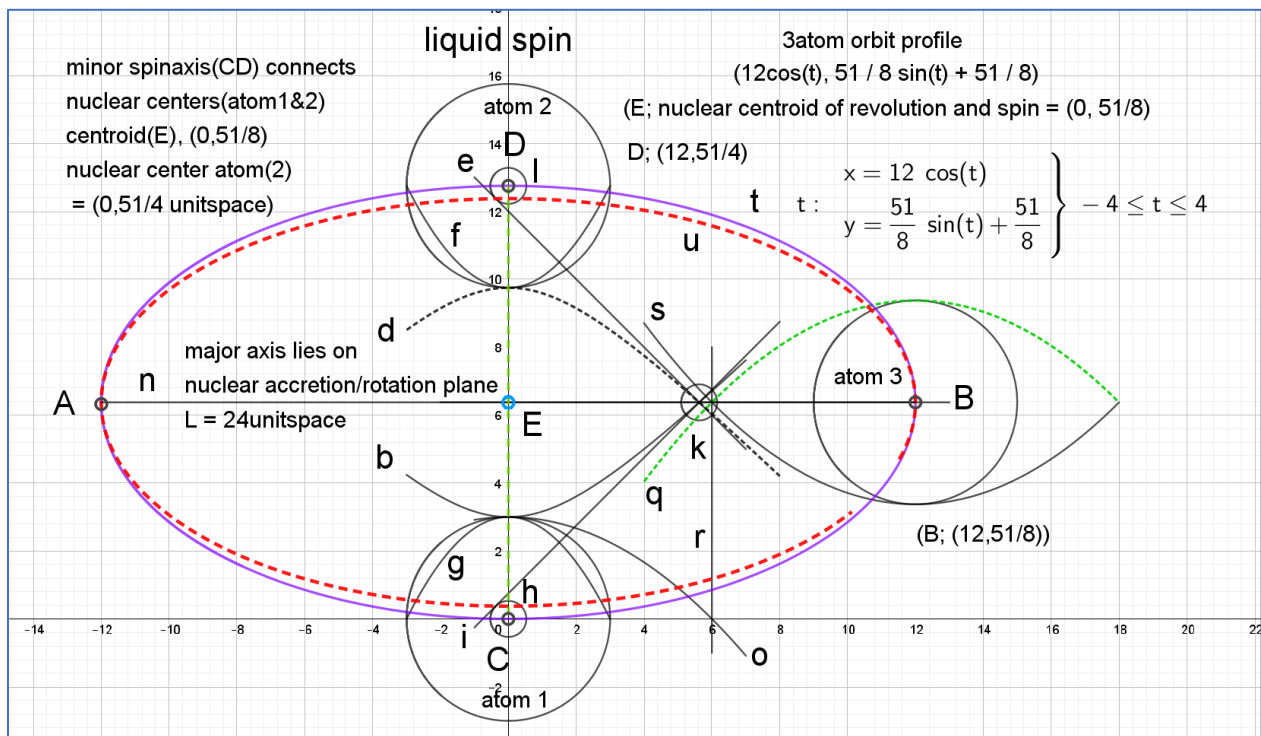


*Figure 2*: We have two Keplerian elliptical mechanical energy curves(t&u). (t) is nuclear liquid string phenomena a fixed rotation shape unchanged by spin. Let (u) be the appearance of gravitational phenomena; something solid.

This occurrence comes with consequences.

This next construction will explore circumstances of a solid inquiry intrusion upon a liquid string connect of two atoms.

If a solid inquiry is recognized/accepted at bond plane($n$) rotation, shaping curves($d, b$) become stressed by atom 3 pulling and distorting bond ring via centrifugal force. The outward pull of atom(3) G-hook rotational link in bond ring of liquid spin not only stresses liquid string connection but will collapse the shape of ellipse(t) into a Keplerian Ellipse($u$) and turning bond space into foci space on a Keplerian major diameter.. Using nuclear gravity.

Let the connection energy of string be conserved. To avoid destruction, the liquid string connection between points($C\&D$) suffers diminished range sufficiently so to acquire a Keplerian <u>G-field</u> elliptical curve of 24($unitspace$) by 12($unitspace$). Flipping the nuclear spin ellipse axis onto the major diameter of Keplerian elliptical($u$), Spin major 90° rotate to Keplerian major and spin minor, already there, absorbed by the Keplerian curve. A preferred acceleration and normal occur. Horizontal space with an up down normal. Another happenstance of inverse worlds that be fields.

Let elliptical energy curve($u$) respond to rotation plane foci, (altered($k$), and not centroid($E$). Keplerian foci have been embeded in the bond ring of liquid string. Gravity hook action of atom(3) recognizes Gfield foci and distort the bond plane from spin to rotation enviro-parametrics compresses the liquid string connection using latent heat energy, overcoming the physical properties of liquid incompressibility.

I've constructed two elliptical mechanical energy curves operating in a Cartesian nuclear three space of spin and rotation. One for rotational gravity and one for liquid spin.

GRAVITY (a start)

Perihelion part of ecliptic curve($u$) major axis runs from integer($+6unitspace$) out to integer($+12unitspace$), positive domain part of major axis.

Aphelion, remote part of orbit, will collect integer($+6unitspace$) @ positive side of central force domain and run out to integer($-12unitspace$) on negative side of domain.

Elliptic curve($t$) is a map of nuclear mechanical motion around centroid($E$). Atom(1), atom(2), and atom(3) together present liquid saturation, a quasi-both solid and liquid state having limited time of existence. As environ temps fall, a phenomena called flashover crushes remaining liquid string energy by pulling spin energy of range onto the domain using nuclear gravity *and* latent heat destroying liquid bond.

The work energy required to shrink liquid string is nuclear level latent heat. By introducing nuclear heat chaos into a collective of like elements enjoying liquid spin perception, violent rotation imbalance destroys bond ring diameter($D\&E$). Shaping hyperbolae absorb lost spin energy.  When flashover from liquid to solid happens, this energy is released as expansion space required by liquid to go solid.

Flashover is the instantaneous transition of perception of gas, liquid, and solid. Stored string energy when released, destroys liquid assemblies changing elliptical energy volume from centroid perception to foci perception of gravity field solids. Welcome to the world of domain action of solids, not range action of liquid.

## CONCLUSION

Let perceived liquid assemblies of temperature induced element be in a state of saturation.  Flashover to solid occurs with last liquid string is morphed to solid, (think water to ice).

Chilling vibration changes string space. reducing spin range alters bond plane of centroid elliptical energy curves. They now become Keplerian foci elliptical energy curves of beginning solids. Centroids collect along spin, focii collect along rotation. One for range, one for domain.

Mechanical energy transition mapping changes *width* of spin strings, alter electromechanical energy distribution. Since energy cannot be destroyed, liquid cannot be compressed, how can change of bond energy be handled? Nuclear shaping hyperbola absorb this conundrum using electromagnetic phenomenon of capacitance. They store the unbound energy liquid is losing. When the last remaining string of a liquid population transition has been destroyed, then and only then will flash-over occur. I suspect this parametric is demonstrated by the transition of water to ice. The energy release of physical phase transition is physical expansion, latent heat at work made evident.
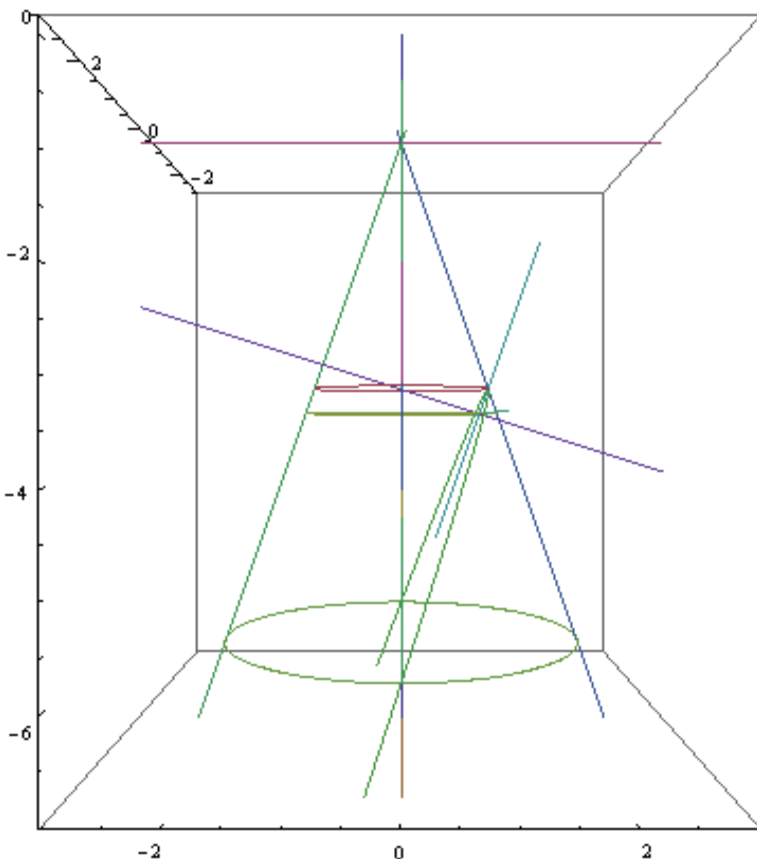
Mechanical orbits ($t$ $and$ $u$) fit very well with Johann Kepler's vision of field motion, Big and Small. One field mechanical energy curve(u) type orbits working immense volume of macro-space, and one field mechanical energy curve(t) nuclear thermodynamic vibration, working a contained enclosed volume of micro infinity.

QED   ALΣΧΑΝDΣR; CEO SAND BOX GEOMETRY LLC

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.

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 ($\pi$/2) spin radius (0, 1) with accretion point (2, 0). I will use the curved space hypotenuse, also connecting spin radius ($\pi$/2) with accretion point (2, 0), to analyze G-field mechanical energy curves.
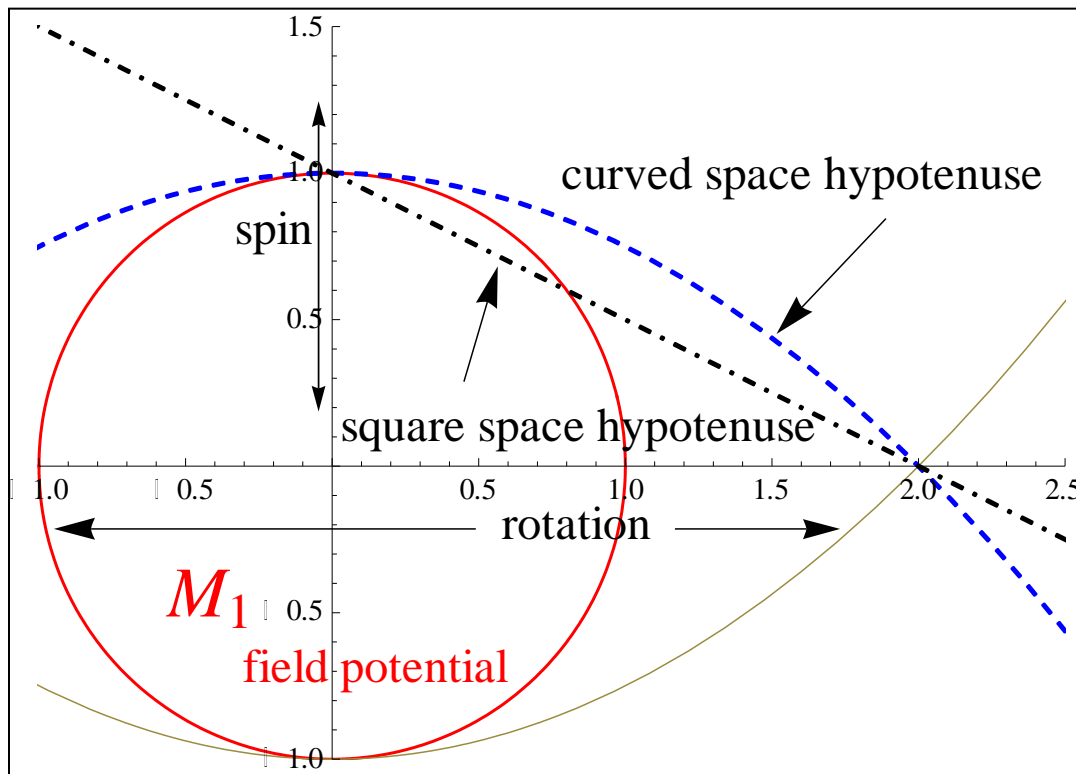


CSDA demonstration of a curved space hypotenuse and a square space hypotenuse together.

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.

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC

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 on the 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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