A Sand Box Geometry thought line:

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC

The parametric geometry of transition of state

June 18
2019

Imagine a universe full of copper atoms and only copper atoms. What would happen if we could mess with a contained place in space using heat?

Using parametric geometry to construct sensory and latent heat change of state

I am not a mathematician, nor a scientist, nor especially acquainted with the ins and outs of 21st century technology. I probably best describe my skill set as a voracious reader of the human knowledge base. From how human vision works, rods and cones in our eyes to stellar ignition. I can be found under the 'E' in STEM.

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC

A short paper on unified field geometry (CAS GeoGebra)

Unified Field geometry connection: massive energy curves of M_1M_2 Gravity and shaped nuclear Quantum mechanical energy curves needed to construct elements of the Periodic Table.

I have always been interested in utility of plane geometry curves to study mechanical energy curves of the gravity field. To do so I invented a Curved Space Division Assembly, acronym **CSDA**, the parametric graphing assemblage of two plane geometry curves I use to explore mechanical properties of gravity field curved space. Exploring mechanical properties of curved space requires a plane geometry construction of Sir Isaac Newton's Inversed displacement radius. This paper will demonstrate methodology to do so using STEM high school math and physics, a first ever construction of the connecting principal of Inverse Square Law joining inversed parametric geometry math properties (curvature) of Degree2 space curves with their linear counterpart Degree1 event radii found in our physical square space. I will demonstrate means to apply Sir Isaac Newton's Universal Law of Gravity, using a **CSDA** and **NASA** derived data, to construct mechanical energy curves of our Earth/Moon system. (Edited by AG; Monday, July 6, 2020)

Wolfram Technology Conference

Wolfram Events Team

alexander@sandboxgeometry.com

07/16/2014 16:14

Dear Alexander,

I am pleased to report that your talk, "CONSTRUCTING PLANE GEOMETRY G-FIELD INVERSE SQUARE LAW" has been selected for presentation at the conference. We are still building the schedule, but currently your talk is slated in the "Science/Engineering/Technology" track.

Unified Field Geometry of two Central Force Energy Systems

12 pages, 1800 words

A parametric construction joining three copper atoms as a solid perception. A philosophical suggestion as means to do so. I looked around and see there are none!

MECHANICAL ENERGY CURVES OF THE Gfield (GeoGebra1)

GeoGebra presentation 1 is mechanical energy curves experienced by M_1 and M_2. The following proof defines inverse square mechanics of an orbit.

Theorem (On the Potential and Motive Circles of Galileo)

1). THEOREM: LAW OF CONSERVED ENERGY AND G-FIELD ORBIT MOTION: Since energy exchanged between these two curves (motion and potential) determines orbit momentum, we need two equal curves to initialize shared energy QUANTITY, when added together zero balance the exchange for stable orbit motion. Somewhere, on the period time curve, there will be a motive curve of same shape as potential less the composition of M_1. Enter the latus rectum average orbit diameter, reference level of gravity field orbit energy curves. It is here, and only here, on the average diameter of an orbit can two unity curves co-exist.

2). Motive curve M_2 + energy level $(f(r))$ = Gfield M_1 potential curve.

3). Potential curve M_1 - (Motive curve M_2 + energy level $(f(r))$ = zero

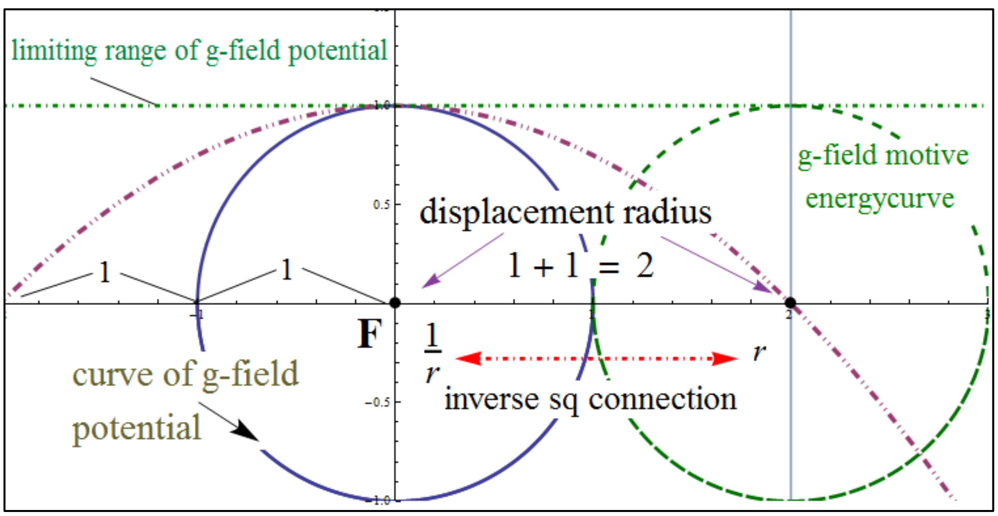


Figure 1: Basic CSDA. Independent curve is M1 potential circle, dependent parabola is period time curve; monitors M2 orbit motion with respect to M1.

Prove shape of average motive curve = shape of potential curve.

- Construct two unity curves, one as central force potential, and one at slope (-1) event, as center on G-field time/energy curve. This is the only place on the orbit time/energy map that two unity curves can co-exist. This cooperative endeavor gives us a two-unit radii displacement event composed using two-unit radii, one for potential energy and one for motion.

- Notice the inverse connector joining potential curvature (micro-infinity) with (macro-infinite) event radius of curvature. Only on a **CSDA** average energy curve diameter can event (r) of a given M_1M_2 stable orbit exist as two distinct congruent unity curves:
  $(\,curvature\ and\ radius\ of\ curvature\ =\ 1)$.

Let this arranged place in space be composed using a two-unit event radius displacement from central force **F** of M_1.

Prove shape of average motive ecurve = shape of potential curve:
$(1\cos(t)\,,1\sin\,(t))$.

1. Construct range of potential as a tangent limit through orbit space $(t, 1)$.
2. Construct shape of potential curve (curvature = 1) about center **F**; given.
3. Compute and construct shape of motive curve at event (m = -1), using:

   a) focal property difference; $(position\ vector(displacement\ r) - potential(r))$

   b) Sir Isaac Newton's Universal Gfield law.

a) radius of motive curve = (focal radius mag - potential) ⟶ 2 - 1 = 1

b) shape of motive energy using displacement radius of M_2 from M_1:

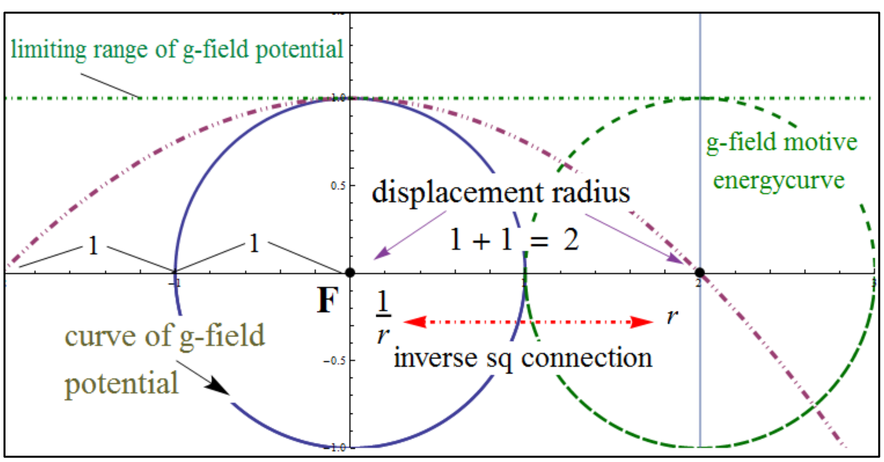


Figure 1: the average energy diameter of any orbit will sum the total available energy exchanged for stable M_1M_2 orbit.

$$\left(\left(\tfrac{1}{2}\right)^2 \times 4(1)\right)^{-1} = 1$$

(about method (b)): Where (2units) is displacement focal radius and $4(1unit)$ is system Latus Rectum (constant of proportionality) as average energy *and* average diameter of M_2 orbit. Result term is inversed to change orbit curvature into displaced radius of that curvature.

SLIDE 20: Going from orbit radius of curvature to inverse square event curvature.

$$[F_{acc} \propto G\frac{(M_1 \times M_2)}{r^2} = F_{acc} \propto (k \times \left(\frac{1}{\mathrm{r}}\right)^2)]$$

To use Sir Isaac Newton's Universal law to construct and prove shape of energy curves, I need to roll the fixed parameters of event radius orbit math into one constant of proportionality as coefficient to curvature.

Since *specific* M_1 and M_2 won't change much in our lifetime roll them into G and let them = constant of proportionality (k); we have: $\left(\frac{1}{r}\right) = curvature$ and: $\left(k \times \left(\frac{1}{r}\right)^2\right)$ is an adjusted Universal Law for two distinct objects (M_1M_2) using the average energy curve found between them.

To surmise the shape of the motive energy curves we invert to convert curved space math into square space math.

$$\left(k \times \left(\frac{1}{r}\right)^2\right)^{-1} = \text{ shape of motive energy curve.}$$

I found the **CSDA** latus rectum diameter is the g-field constant of proportionality. QED: massive Gfield energy curves.

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC (12/31/2017)

The main difference between the Plane Geometry of Euclid and the Plane Geometry of Gravity Curves would have to be Euclidean utility of position. Euclidean geometry will work pursuing discovery of gravity curves, not with position alone but time and energy of position. Just let it breath.

Alexander, February 2008

QUANTUM MECHANICAL ENERGY CURVES (GeoGebra 2)

To undertake construction of mechanical shaping curves of nuclear assembly of elements, I use the independent curve circle as electron cloud based on Z#:

$$(Z\#\cos(t).Z\#\sin(t))$$

The dependent parabola curve and its latus rectum can now be constructed within the ecloud and not reach a displacement outside micro infinity of the system. $\left(t, \frac{t^2}{-Z\#} + Z\#, -Z\# \leftrightarrow +Z\#\right)$; planted firmly on rotation plane of electron field.

Unity tangents (Line's slope (m = ±1) as tangent and tangent normal can be used to construct nuclear connections of atom1 and atom2 using hyperbola right asymptote crisscross in space to locate nuclear center of atom1 central force (**F**). Establish spin as $\left(\frac{\pi}{2}, +yaxis\right)$ and rotation $(\pi \leftrightarrow 2\pi, \pm xaxis)$ to map nuclear field structure and connection mechanics between atom1 and atom2.

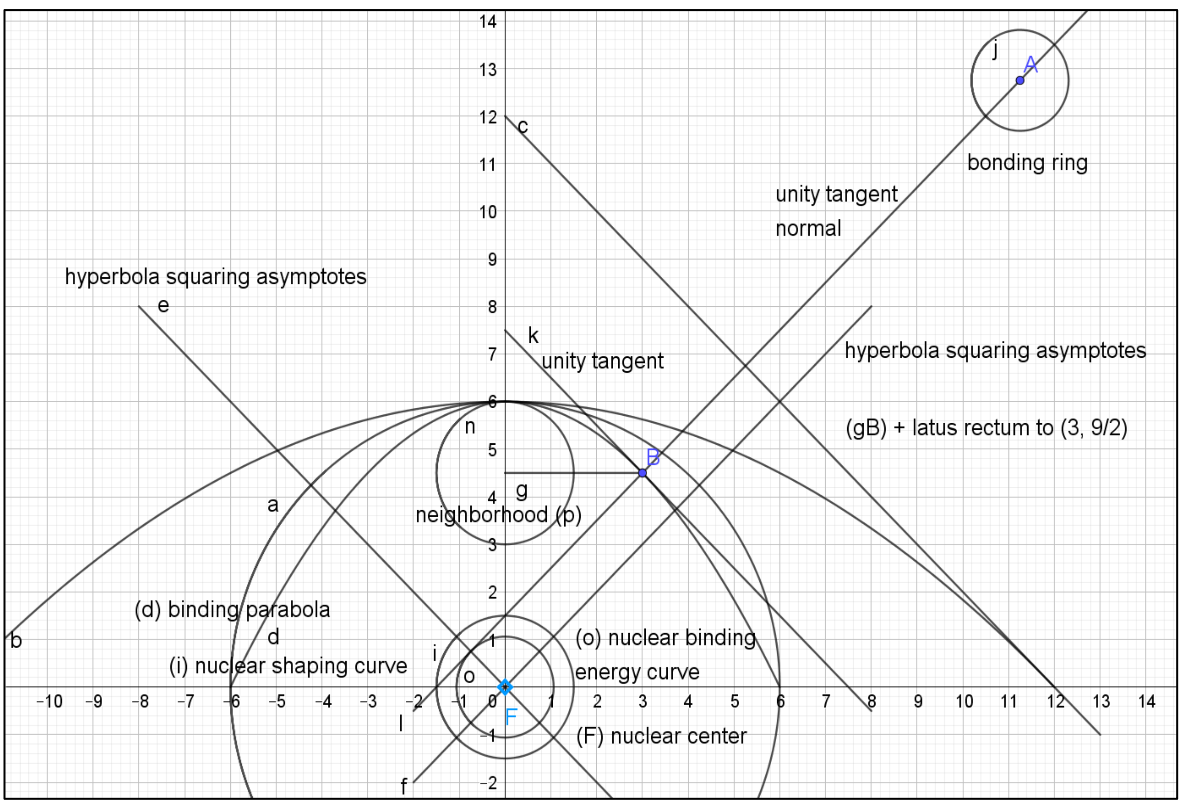


Figure 2: this is a discovery model for C (Z# 6; carbon). Shows both unifying parabola curves. One for nuclear micro-infinity (d) and one for Gfield macro infinity (b).

let meter of environ temperature be sensible heat. Let spin be stability of state, be it solid, liquid, or gas. Transition of state is consummated with latent heat, the vibration change of spin into disruptive oscillation frequency.

The dynamic geometry of a *latent* heat thermometer influence over nuclear internal energy is demonstrated by temperature energy induced travel between the spin axis and the rotation diameter; direction is dependent on heat loss or gain, and once an individual atom experiences transition frequency by arrival at spin or rotation, change of state can only occur when *collective* population is resonant.

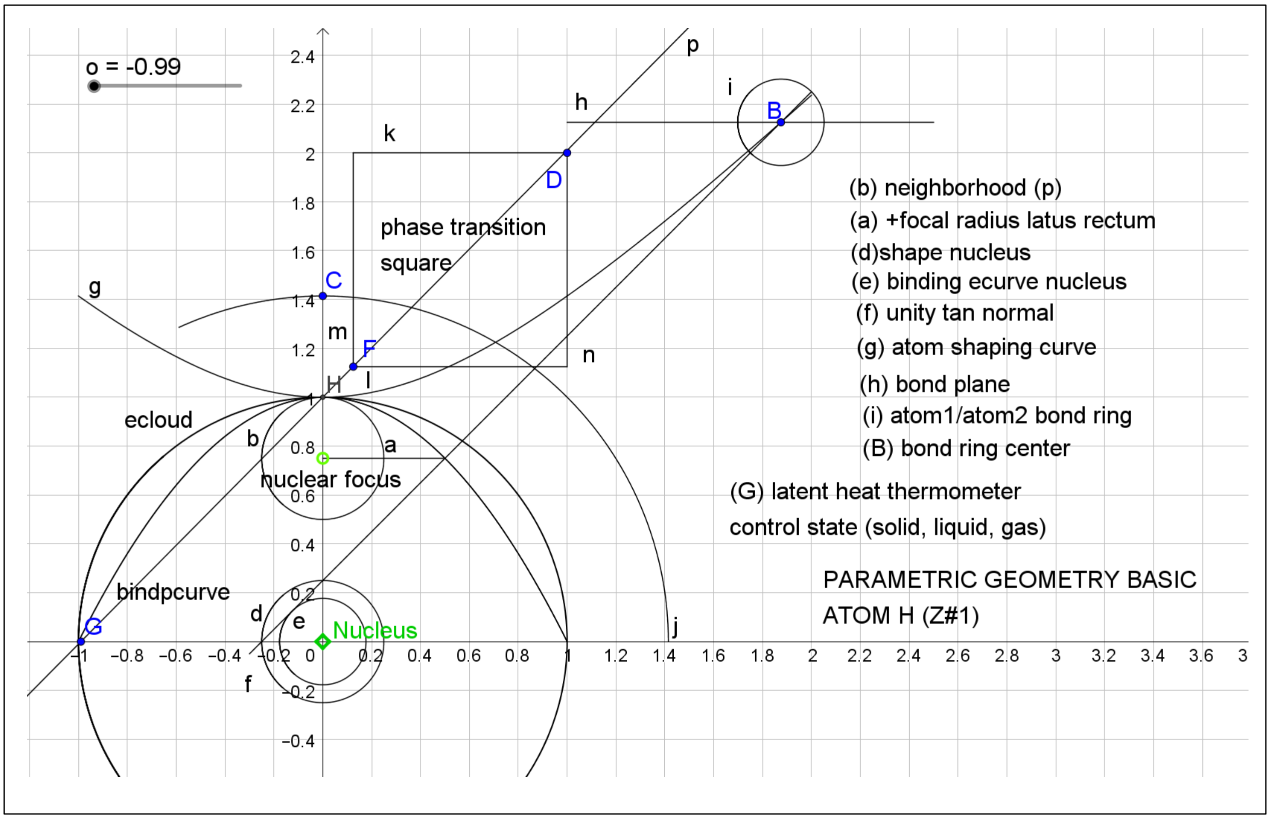
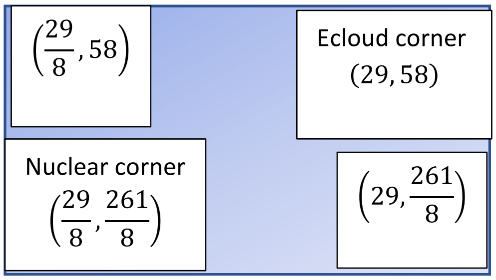


Figure 3: Latent heat thermometer (Z# ^{1}H) alignment is congruent with spin for stable state of (solid, liquid, or gas). Transition of state can only occur with (5 and or 6) collinear event, 1) rotation(G); 2) spin(H); 3) intercept latent thermometer and vibration asymptote N/A ^{1}H; Z#1; 4) nuclear corner transition square (F); 5) ecloud corner transition square (D); and redundant transition curve center which is center of transition square.

A vibration asymptote cannot be constructed for ^{1}H but both transition square and transition curve can be constructed.
See GeoGebra construction for copper to see latent thermometer and vibration hyperbola.

https://www.geogebra.org/m/wAEFxb34

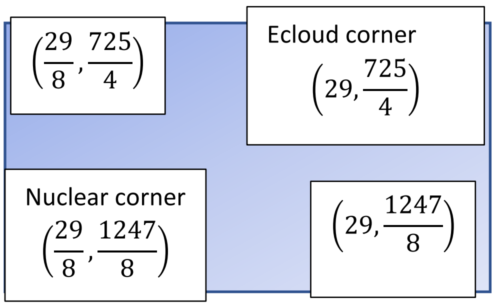
Three nuclear Space & Time Squares for Cu (Z#29); solid, liquid, and gas.



Nuclear Space-time Square atom 1 (Cu Z#29)

One atom of copper can only stay isolate from collective as gas. $(solid) < 1084.62\ °\mathrm{C}, 1984.32\ °\mathrm{F} < (liquid) < gas\ (2562\ °\mathrm{C}, 4643\ °\mathrm{F})$

Temperature of environ need be above $(2562\ °\mathrm{C}, 4643\ °\mathrm{F})$.



Nuclear Space-time Square atom 2 bonding atom 1&2 (Cu Z#29).

Two atom bond of copper (atom 1 with atom 2) presents a liquid collective at specific environ.

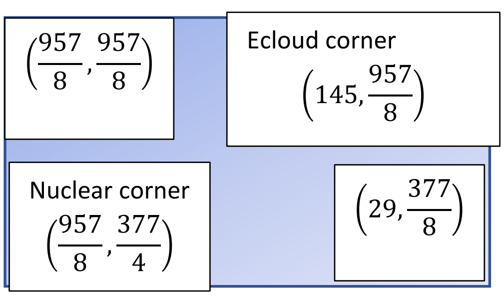
Bond plane between (atom 1 and atom 2):

(t, 493 / 8). Ecloud corner: $(Z, 2Z + 2 * (bond\ plane) = \left(29, \frac{725}{4}\right)$.

Nuclear corner: $(\frac{Z}{8}, (2 \times bond\ plane) + 29 + \frac{29}{8}) = \frac{Z}{8}, \left(\frac{493}{4} + 29 + \frac{29}{8}\right) = \left(\frac{29}{8}, \frac{1247}{8}\right)$

Temperature of environ need be between:

$< 1084.62\ °\mathrm{C}, 1984.32\ °\mathrm{F} < (liquid) < gas\ (2562\ °\mathrm{C}, 4643\ °\mathrm{F})(2562\ °\mathrm{C}, 4643\ °\mathrm{F})$.



Nuclear Space-time Square atom 3 accretes with atom 1&2 (Cu Z#29); joining as rotation, not spin. Beginning solid assembly, need temperate environ $< 1084.62\ °\mathrm{C}, 1984.32\ °\mathrm{F}$.

Top right corner has linear connection with nuclear center of atom1.

Melting point: 1357.77 K (1084.62 °C, 1984.32 °F)

Boiling point: 2835 K (2562 °C, 4643 °F)

https://www.geogebra.org/m/hhm8jvpf

This construction represents 3 copper atoms (Cu; Z#29), not hashtag 29 but number 29 on Mendeleev chartings. I imagine at the most elementary stripped-down beginning of collectives, we find temperature plays as limiting agent, giving us boundaries/perceptions of solid, liquid, and gas.

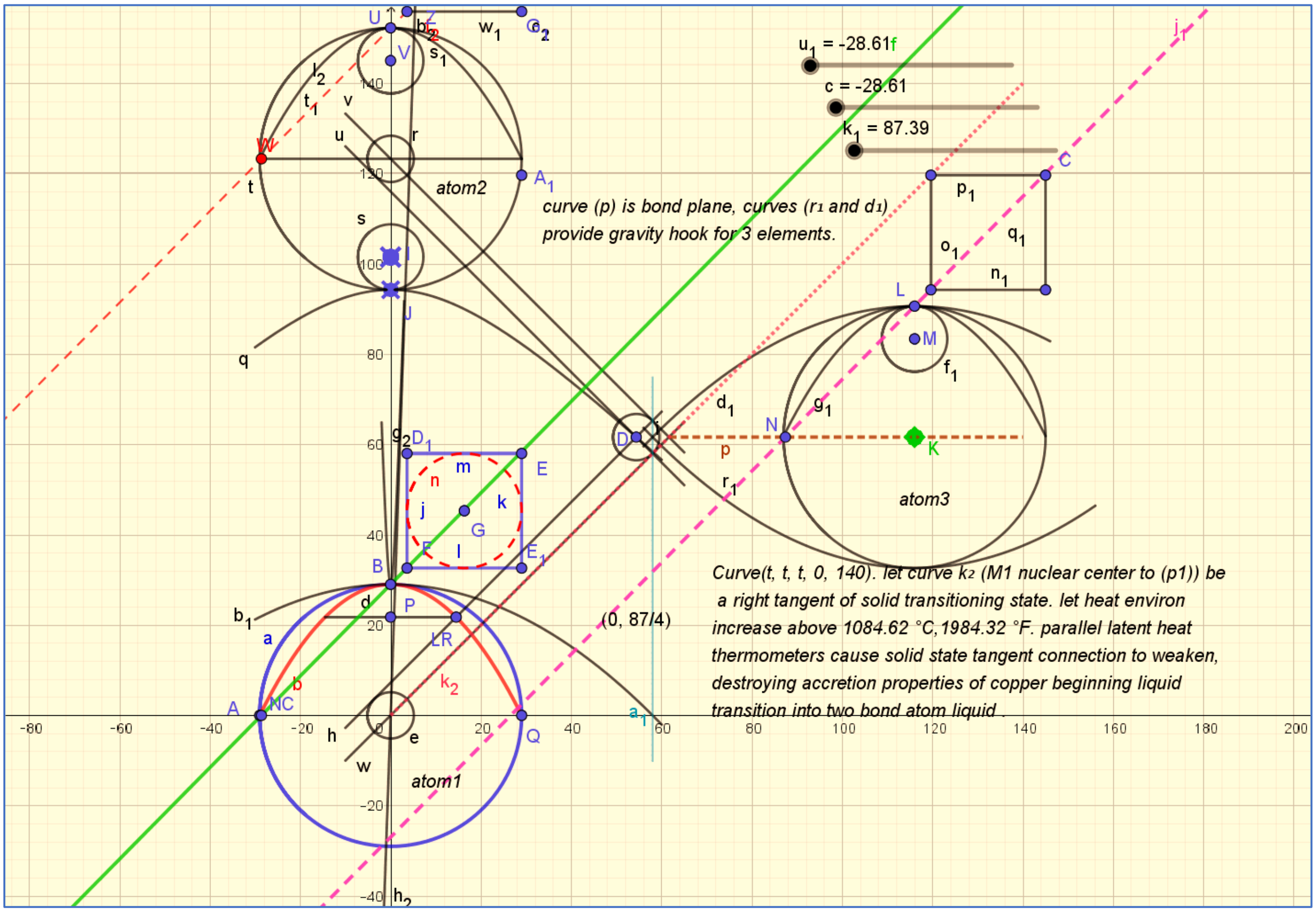


Figure 2: we have 3 latent heat thermometers passing through 5 co-linear points, at (+1 slope event). Let each atom meet temperate vibration limit at various times. When collective vibrates as one, we have resonance and flashover of state occurs. Hot to cold or cold to hot.

$$< 1084.62\ °\mathrm{C}, 1984.32\ °\mathrm{F} < (liquid) < (2562\ °\mathrm{C}, 4643\ °\mathrm{F}).$$

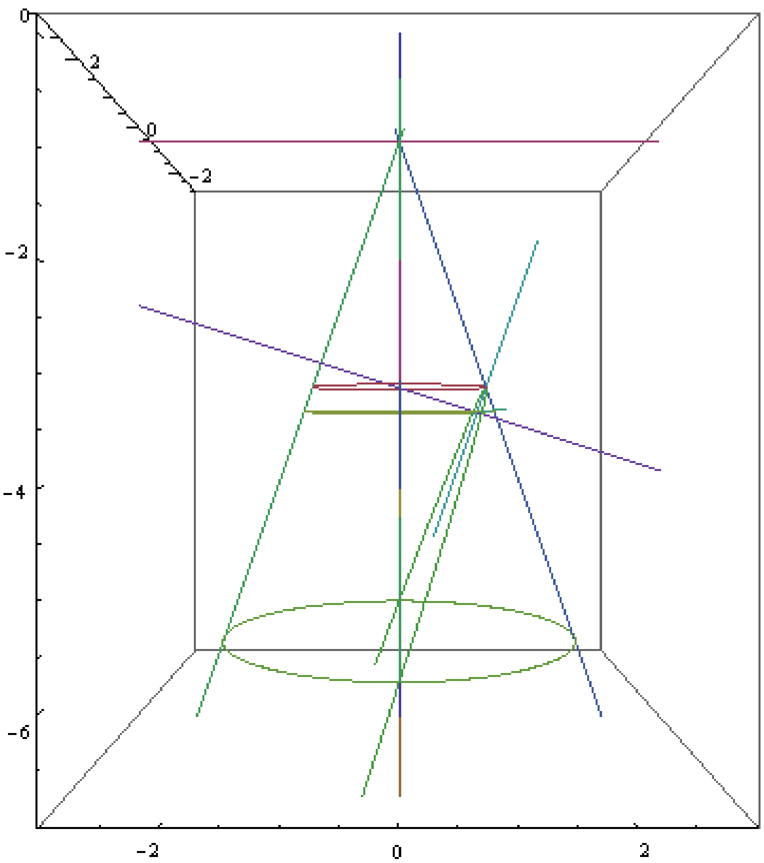
Consider a google collection of single atoms in confined bounded space. To keep ‘em single and free of each other, turn up the heat! To get ‘em together so we can wire our civilization, keep out heat! Thank God our Earth’s temperate zone is just right.

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC

COPYRIGHT ORIGINAL GEOMETRY BY

Sand Box Geometry LLC, a company dedicated to utility of Ancient Greek Geometry in pursuing exploration and discovery of Central Force Field Curves.

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



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

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.

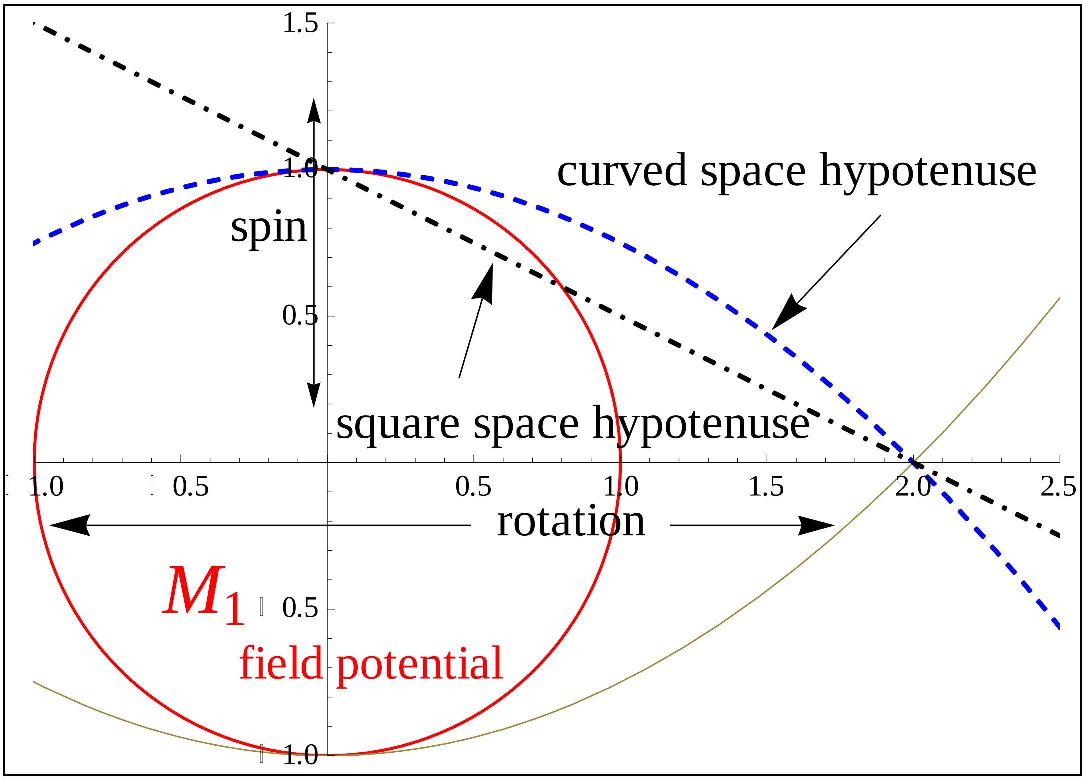


Figure 3: CSDA demonstration of a curved space hypotenuse and a square space hypotenuse together.

We have two curved space hypotenuse 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