MECHANICAL ENERGY CURVES OF THE Gfield (GeoGebra1) 2014

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

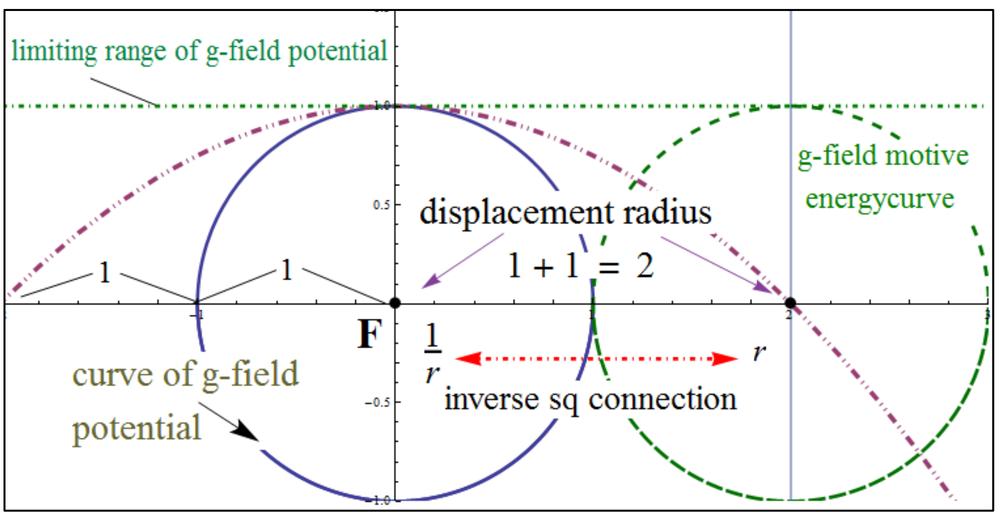


Figure 1: Basic CSDA. Independent curve is M1 potential circle, dependent parabola is period time curve monitors M2 orbit motion with respect to M1.

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 meter, 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) and its inverse exist as two distinct congruent curves composed using a two-unit event radius metered connection of both our infinities.

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

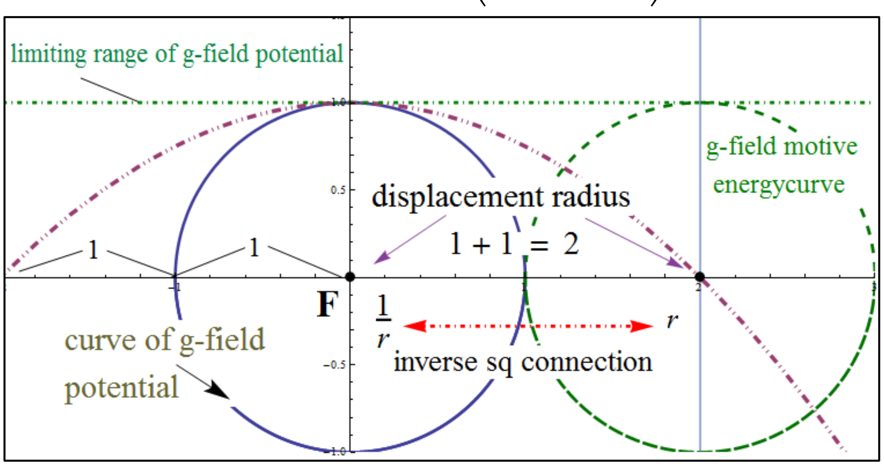
1. Construct range of potential as a tangent limit through orbit space $(t, 1)$.
2. Construct shape of potential curve (curvature = 1) about center **F**; given.
3. Compute and construct shape of motive curve at event (m = -1), using:

a) focal property difference;
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:

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



(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 Inverse Square 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: $\left(\frac{1}{r}\right) = curvature$

$$\left(k \times \left(\frac{1}{r}\right)^2\right)$$

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

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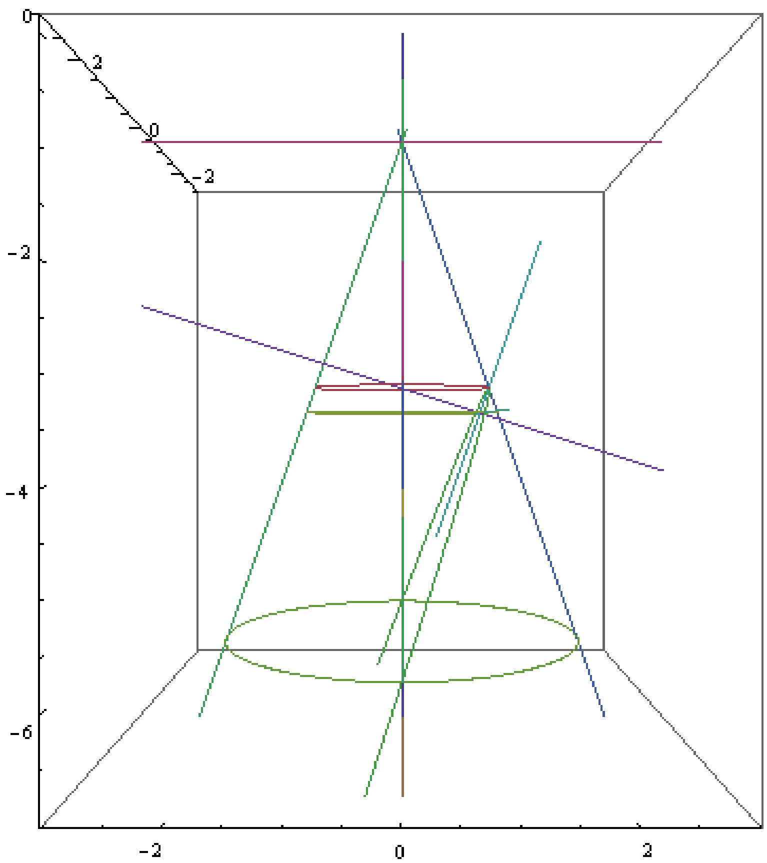
Using computer parametric geometry code to construct the focus of an Apollonian parabola section within a right cone.



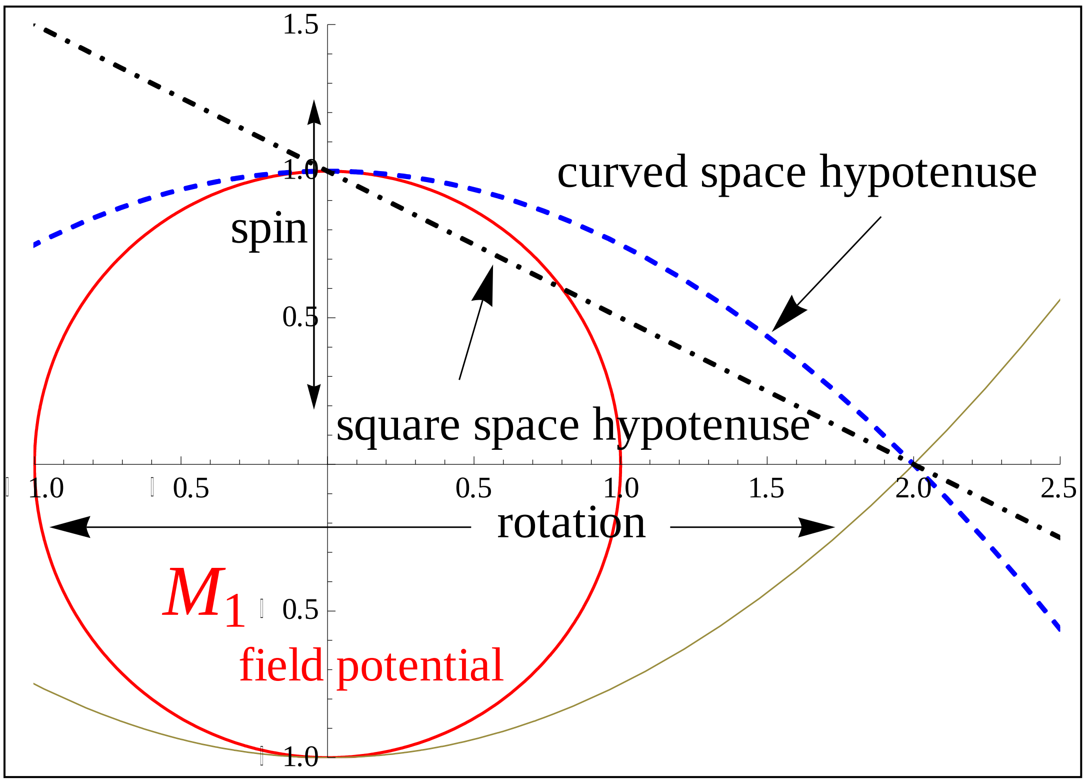
"It is remarkable that the directrix does not appear at all in Apollonius great treatise on conics. The focal properties of the central conics are given by Apollonius, but the foci are obtained in a different way, without any reference to the directrix; the focus of the parabola does not appear at all...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

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

CAGE FREE THINKIN’ FROM THE SAND BOX

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



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

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

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC

SANDBOX GEOMETRY WEB SITES:

1. (sandboxgeometry.com) Oldest site, untouched since inception by Betsy Labelle; 1st Q 2011 (no longer web master).
2. (sandboxgeometry.info) my Blog/Diary.
3. (sandboxgeometry.org) Dated record of abstract presentation. A learning curve so to speak; about CSDA development.
4. (sandboxgeometry.net) unused.