Version2 Lesson Plan 1. Curved Space Parametric Analytics, and introduction. I explain the parametric tool I use to construct and analyze central force ME.

Hello World. Welcome.

This is my Blog: Readings from the SandBox. A place to go for Not so Plane Geometry.

I write my philosophical perception of Central Force being using machine tech platforms for STEM students and teachers worldwide. My tools are Wolfram, GeoGebra, and Texas Instrument *n*-spire. I use these three-machine platforms to construct two Central Force Fields, nuclear and gravity.

I use parametric geometry to create a computer dynamic function using two plane geometry curves. I call my parametric machine a Curved Space Division Assembly (**CSDA**).

I invented my Curved Space Division Assembly (**CSDA**) to create a standard platform analytics for both fields. I study Central Force Time-Transition, the fingerprint of motion. I map G-field motion of M2 about M1. Essentially changing accelerations affecting interchange of potential energy of M1 and resultant motion/velocity of M2. Nuclear energy Time-Transition brings us to Quantum Thermodynamics. Here, I map vibration chaos, thermal disturbance of nuclear space affecting the transition of state, what happens when atoms sweat or become very, very, cold.

Follow me for the means and methods to construct the analytic platform needed to explore Parametric Geometry of Central Force Curved Space.

ALΣXANDΣR; CEO SAND BOX GEOMETRY LLC

I believe our being is comprised of three space and time squares. If we focus on one than two are obscured. To find a congruent registration experience for all three Space and Time phenomena of the fields we live with, we need Parametric Curved Space Geometry.

Next, my paper on Space Time Squares from Dec 2020.

Means to construct and analyze Central Force mechanical energy curves of Three Natural Space and Time Squares.

Three space and time squares born of human intellect	December 3, 2020

This paper concerns parametric geometry methods of construction for three space and time squares sourced of human imagination.

Space and Time Squares; the meter of motion and time

This paper is a four-part monograph on Parametric Geometry Space & Time construction of two Central Force Mechanical Energy Curves. Gravity of Classic Big and Nuclear for Thermodynamic Quantum Small. The monograph, is of necessity, explained with four parts.

1. Part 1 of the monograph explores a computer contrivance I've invented to explore space curves. The tool I use to explore S&T squares I call a Curved Space Division Assembly (**CSDA**). I use a **CSDA** to construct Parametric Geometry Dynamics for all three natural S&Ts of human knowledge base.
2. S&T1 (page 12-21)
3. S&T2 (page 22
4. S&T3

TARGET UTILITY

This monograph is a STEM product aimed at Middle School and Secondary Ed students worldwide. Let us not forget the intellectually curious possessing 21st century machine technology. It can be studied as a single text, or the ensemble can be utilized as steppingstone learning curve of the central force fields with which we live. My perception of Space Time is ordered and understanding the analytics of the previous S&T time square is prerequisite to understanding the next level spacetime square of the Human Knowledge Base.
ALΣXANDΣR; CEO SAND BOX GEOMETRY

PART1: ON THE PARAMETRIC GEOMETRY OF NATURAL CENTRAL FORCE CURVED SPACE AND TIME.

If we select the timeline Galileo as that point in human history where we recognized our Earth is not the center of Creation; we can begin with Space and Time Square1 (S&T1). Let me suggest two more S&Ts as significant milestones of the human knowledge base. (S&T2) would be Sir Isaac Newton and his Universal Law of Gravity. Followed by (S&T3); late 19th Century and early 20th Century collective development of Quantum Thermodynamics.

This monograph will suggest a parametric philosophical geometry:

PARAMETRIC UNIFIED FIELD GEOMETRY.

I'm gonna' pull the fields together. I will succeed in joining Sir Isaac Newton's Classic Big with early 20th century Quantum Small.

12/22/20; pages: 26; words 3k. / January 2, 2021, 22p; 3200w
January 5, 2021, 23p; 3600w/ January 8, 2021, 28p; 4600w/January 10, 2021 28p; 4600w/Sunday, February 7, 2021 21:38 24p, 4k word/February 13, 2021 26P;4KW.

Main endeavor for year of our Lord 2021

I've spent most of my lifetime exploring Sir Isaac Newton's S&T2. Concepts from 'Principia' composed a significant part of my (HS physics; '59-'62). Add to this the explosive popular science of "Cosmos: A Personal Voyage" by Carl Sagan, Ann Druyan, and Steven Soter, would further ignite my passion to construct mechanical energy of Central Force Fields.
https://en.wikipedia.org/wiki/Cosmos:_A_Personal_Voyage

Because Dr. Sagan's television diorama simplicity was able to jump over the complexity of Sir Isaac's Calculus and The Principia's elegant but difficult geometry, I felt required to attempt connecting computer Parametric Geometry simplicity with the complicated difficult.

I invented my Parametric Geometry 'Curved Space Division Assembly' (**CSDA**) to aid my pursuit. I've explored imagined natural curves and lines of space and time with this tool for years. I feel I've accomplished what I set out to do so very long ago. I embrace my current project (Three Space and Time Squares of Human Experience) with intentions of dampening the noise that the human collective knowledge base has become, enabling general curiosity to participate in 21st Century philosophical discoveries connecting counting of time with mechanical dynamic energies of space and have done so! I can't and won't prove a thing my imagination conjects, for this is how I see the Natural lines and curves of God's Creation. Anyway, this has already been done by far smarter people than me! In other words, this is my opinion using 21st century computer document geometry. It matches very well the previous centuries building blocks constructing our human knowledge base!

I intend to develop the Natural Curved Space tools of exploration. How to use my Curved Space Division Assembly (**CSDA**). Then in order, construction, and analysis of; S&T1, S&T2, and S&T3.

ALΣXANDΣR; CEO SAND BOX GEOMETRY

Analytical pursuit of Central Force Space and Time Squares:

- S&T1: Galileo; Constant Acceleration Space and Time. (pg. 12-?)
  (1564-1642: Father of Kinematics; science of Uniform Acceleration).
  - MAA Mathfest August 2015
  - Wolfram technology Conference October 2015
- S&T2: Sir Isaac Newton; Changing Acceleration Space and Time.
  (1643-1727: explored changing acceleration; quantified G-field motion).
  - JMM meeting January 2014
  - Wolfram Technology Conference October 2014
- S&T3: Late 19^{th} Century early 20^{th} Century collective. Quantum Thermodynamics Experience of like element Atoms. Periodic Table. Space, Heat, and Time at the nuclear level.
  - Nuclear
  - Wolfram Virtual Technology Conference October 2020

CSDA construction of three Natural Space and Time Squares:

$$\text{ParametricPlot}[\{\{1\text{Cos}[t],1\text{Sin}[t]\},\{t,t^2/-4+1\},\{t,t\},\{t,1\},\{1,t\},\{\frac{3}{2},t\},$$
$$\{t,\frac{7}{16}\},\{\frac{5}{2},t\},\{t,\frac{-9}{16}\},\{t,(t-4(\frac{13}{4}))\},\{\frac{13}{2},t\},\{2,t\},\{1/8\,,t\},\{t,\frac{9}{8}\},\{1,t\},\{t,2\}\},$$
$$\{t,-4,14\},\text{PlotRange}\rightarrow\{\{-1.5,3\},\{-1.5,3\}\}]$$

The Wolfram Language (Parametric) code has been clarified using drawing tools. Overlay lines and curves of drawing tool utility are true representations of lines I imagine existing for all three S&T squares I write about.

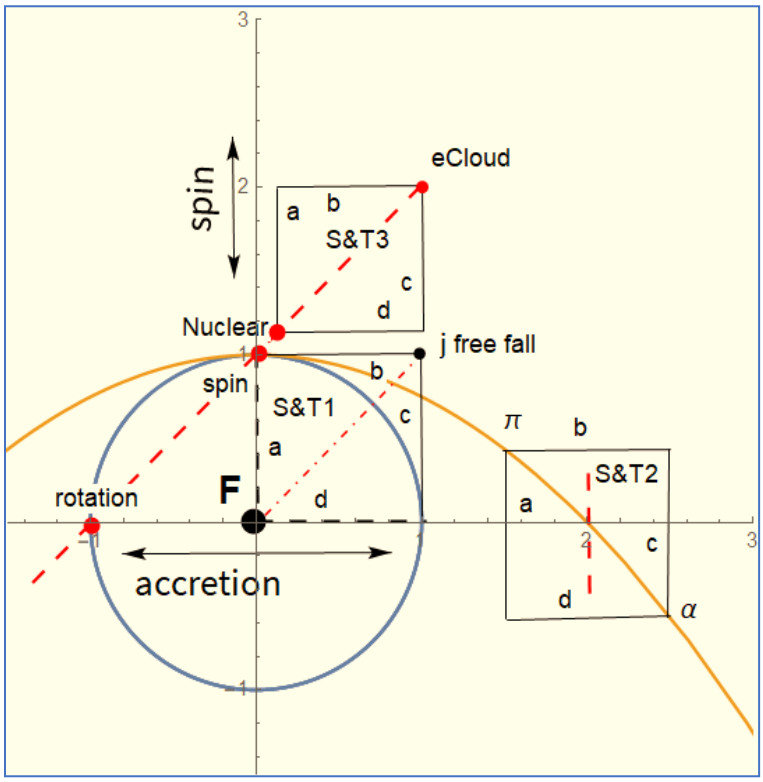


Figure 1*: Basic CSDA representation of three S&T square. S&T1; Galileo, S&T2; Sir Isaac Newton, S&T3; 19th and 20th Century Collective; Quantum Thermodynamics.*

S&T1: (j) is a 1st second free fall above the surface acceleration curve of M_1. S&T1 has two diagonals. Surface acceleration curve of M_1 central force **F**, and free fall linear diagonal to central force **F**.

S&T2: S&T2 energy curves possessed by orbit of M_2 are locked between high energy and low energy limiting curves. AKA perihelion/perigee and aphelion/apogee. S&T2 rotation plane is labeled accretion, central force **F** is M_1 and M_2 motion is plotted on the parabola period time curve**.** S&T2 has one curved diagonal.

S&T3: S&T3 connects nuclear corner of space and time with ecloud corner of same space and time. S&T#3 has one linear diagonal connecting nuclear shaping forces of nucleus and ecloud with atom spin and rotation. S&T3 explores

Quantum level thermodynamic experience of Q (heat). What happens when atoms sweat or feel cold?

Please note!! Important; S&T1, S&T2, and S&T3 all share a relative connection with the same central force spin and rotation axis (see figure1)!

All Sand Box **CSDA** S&T squares are 1st Quad Cartesian Analytic Geometry constructions. It is a means to carry one on one unit correspondence of axis (time) with axis (space).

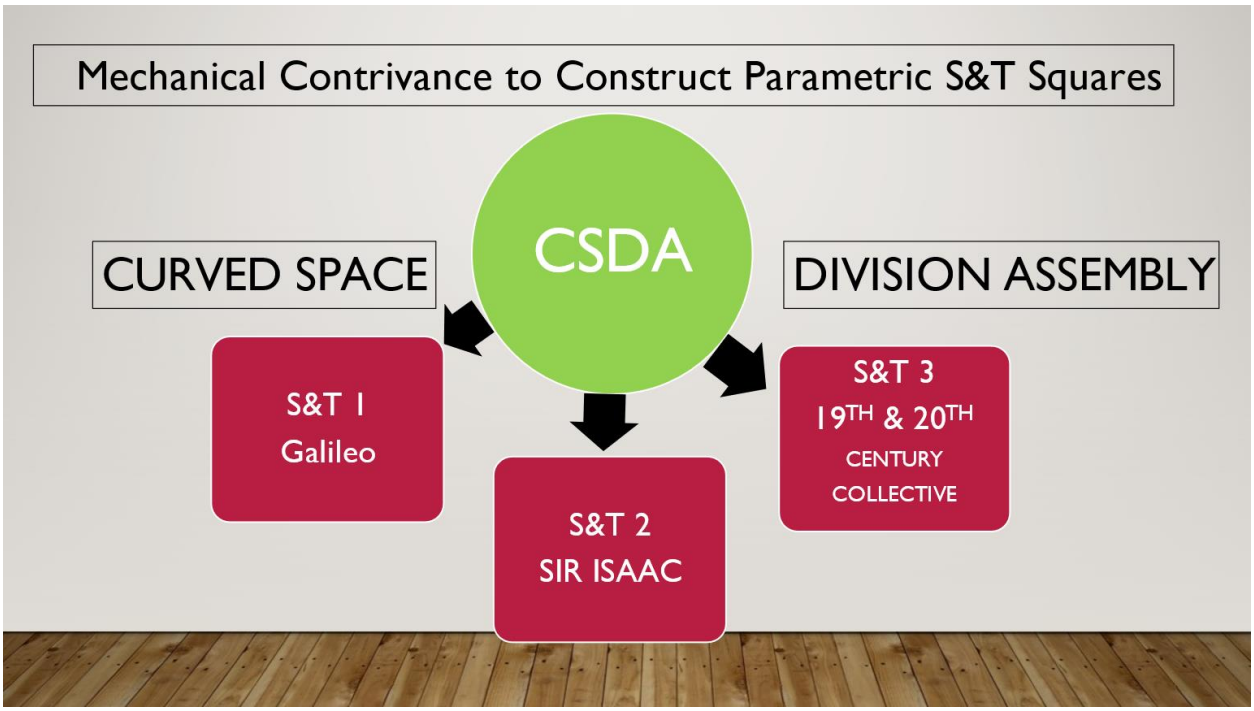


Figure 2*: CSDA as source primitive of three Space and Time Squares. (PP; 3space & time squares; 4)*

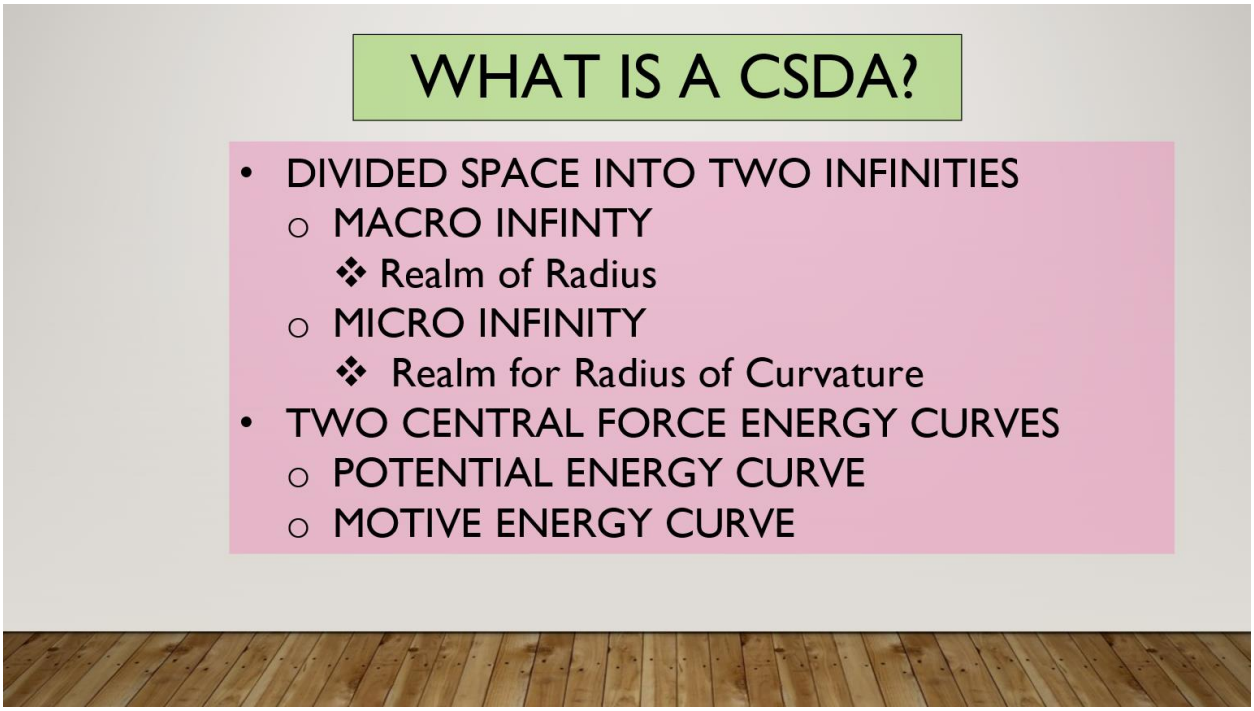


Figure 3*: A CSDA divides space into two infinities of our being. Micro infinity (quantum small) and macro infinity (classic big). ((PP; three space and time squares…#7).*

Two reasons for division of space into two separate infinities would be:

1. To aquire a unifying geometry for Quantum Mechanics (nuclear small space) and Classic Mechanics (M_2 big space) of Sir Isaac Newton.
2. Two infinities also bring into play the parametric geometry of curvature and radius of curvature, a required geometric map linking the experience of curved space with predictive square space.

Let macro infinity be the realm of radius, a length of space we can hold and measure. Let micro infinity be the realm of curvature, inverse of radius, a number and only a number.

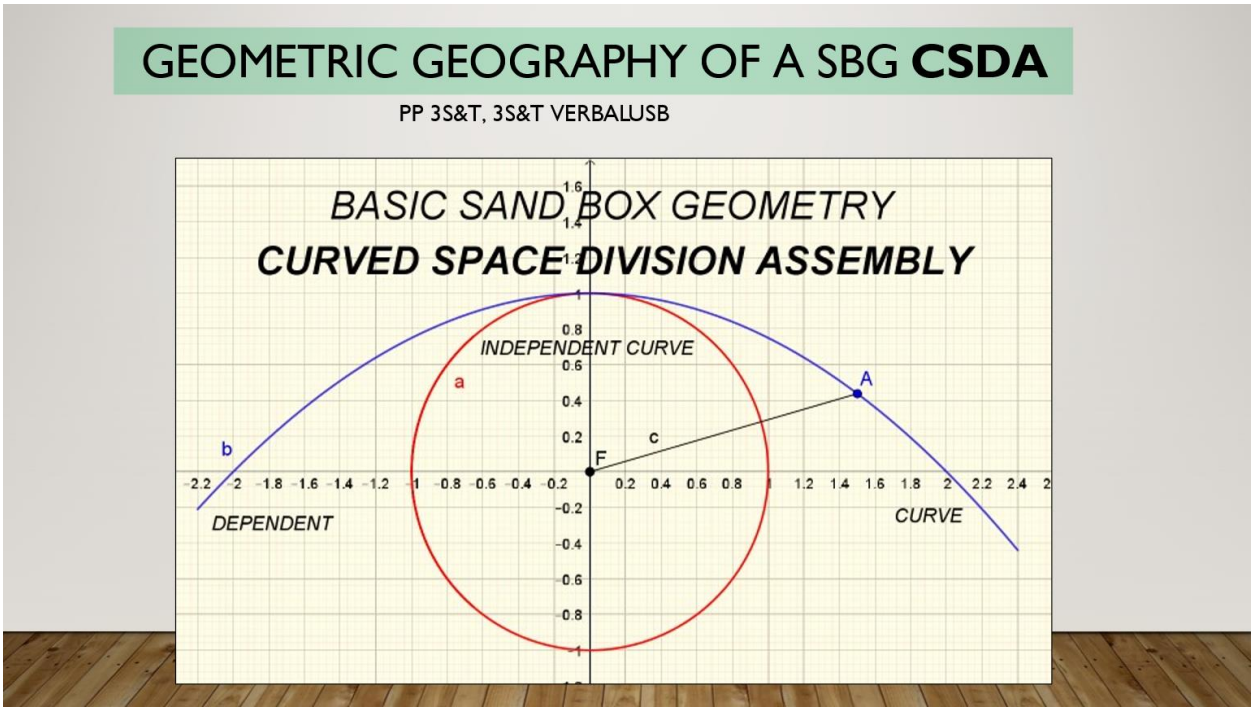


Figure 4*: Geography of a basic CSDA borrows calculus terms to name two Natural curves of space.*

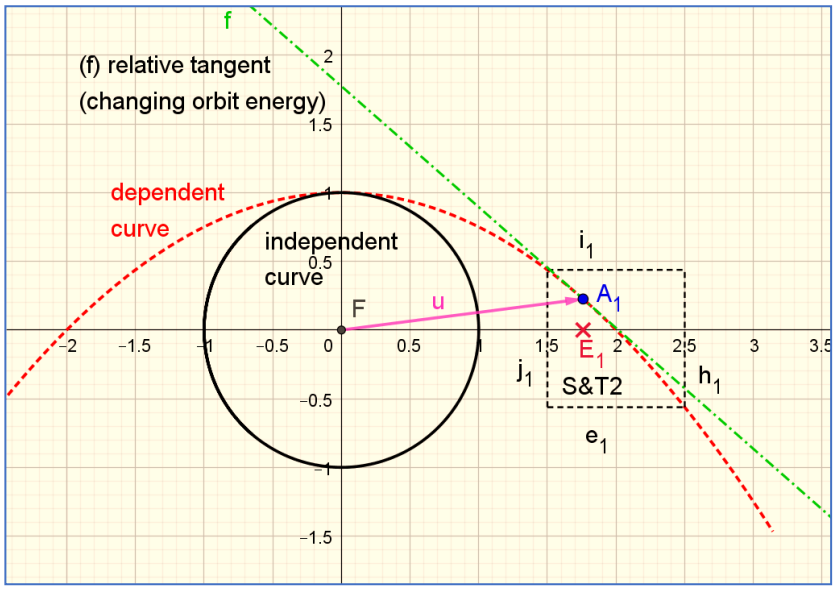
The open curve is dependent on M_1 influence and using position vector (c) tracks motive energy exchange between M_1 inflence and M_2 motion, causes Sir Isaac's displacement (r) to move. M_2 does not have a physical shape on the time curve. Only the changing energy of its point mass (A) is here. Energy of M_2, point (A), is tracked on the period time curve using position vector (c). The dependent curve links the open space of macro infinity (radii) with micro infinity (radius of curvature) completing our square space domain, aka Cartesian coordinate system numberline containing both infinities of our being.

Position vectors are Central Force vectors providing means to analyze and iterpret period motion of M_2.

motion of M_2.

geoGebra dynamic demonstration of basic CSDA .

DYNAMICS:



Let (u) be a position vector following $(f(r))$.

Let (E) be Sir Isaac's displacement radius (r) and (A_1) be orbit energy M_2.

We have $(r \rightarrow E)$ and $(f\ (r)\ \rightarrow\ A_1)$ Let (f) be a dynamic energy tangent. Changing slope of etangent's are key to finding orbit velocity of M2 on the period time curve.

End review of **CSDA** S&T research tool.

Reading from the SandBox

Two more dynamic views of Sir Isaac's S&T2

An energy field of motion for M_2

https://www.geogebra.org/m/gsdbvt8h

changing energy field of motion, S&T2, and actual period orbit curve.

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

end presentation of working CSDA analytics.