Supreme Theory of Everything

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Abstract
Not only universe, but everything has general characters as eternal, infinite, cyclic and wave-particle duality. Everything from elementary particles to celestial bodies, from electromagnetic wave to gravity is in eternal motions, which dissects only to circle. Since everything is described only by trigonometry.

Without trigonometry and mathematical circle, the science cannot indicate all the beauty of harmonic universe. Other method may be very good, but it is not perfect. Some part is very nice, another part is problematic. General Theory of Relativity holds that gravity is geometric. Quantum Mechanics describes all particles by wave function of trigonometry.

In this paper using trigonometry, particularly mathematics circle, a possible version of the unification of partial theories, evolution history and structure of expanding universe, and the parallel universes are shown.

Keywords: HRD, Trigonometry, Projection of Circle, Singularity, Celestial Body, Black Hole and Parallel Universes.

Introduction

Today scientists describe the universe in terms of two basic partial theories – the general theory of relativity and quantum mechanics. Unfortunately, however, these two theories are known to be inconsistent with each other – they cannot both be correct. One of the major endeavors in physics today, is the search for a new theory that will incorporate them both – a quantum theory of gravity. But ever since the dawn of civilization, people have not been content to see events as unconnected and inexplicable. They have craved an understanding of the underlying order in the world. Today we still yearn to know why we are here and where we came from. Humanity's deepest desire for knowledge is justification enough for our continuing quest. And our goal is nothing less than a complete description of the universe we live in [1].

Quantum mechanics governs the world of the small-the weird realm in which an atom or particle can be in many places at the same time and can simultaneously spin both clockwise and anticlockwise. Gravity governs the Universe at large-from the fall of an apple to the motions of planets, stars, and galaxies-and is described by Albert Einstein's of general theory of, announced 100 years ago this month. The theory holds that gravity is geometry: particles are deflected when they pass near the massive object not because they feel a force, said Einstein, but because space and time around the object are curved [2].

The reality of universe describes by geometry, because of that not only gravity is geometrical, but everything is it and nothing is linear. One of the important branches of geometry is trigonometry dealing with circle and triangle. For this reason, it is easier to describe nature of universe by mathematics circle.

The concept of the circle is ubiquitous. It can be described mathematically, represented physically and employed technologically. The circle is an elegant, abstract form that has been transformed by humans into tangible, practical forms to make our lives easier. And yet no one has ever discovered a true mathematical circle [3].

In early time Galileo Galilei wrote: "Philosophy [i.e. physics] is written in this grand book (*Assayer*)-I mean the Universe-which stands continually open to our gaze, but it cannot be understood unless one first learns to comprehend the language and interpret the characters in which it is written. It is written in the language of mathematics, and its characters are triangles, circles, and other geometrical figures, without which it is humanly impossible to understand a single word of it; without these, one is wandering around in a dark labyrinth".

I would like to begin this paper with the Hertzsprung-Russel Diagram (HRD) of stars, which has some incomplete components, which may be indicating mysteries of universe.

Its objective is to interpret a possible version of general law of cyclic universe for unification of partial theories under the name: Supreme Theory of Everything and to indicate a trigonometric model

of spatiotimeevolution of universe.

Dawn of Everything Theory: Sectarial Hertzsprung–Russell Diagram

In circa 1910 Einar Hertzsprung and Henry Norris Russell created a diagram so-called Hertzsprung–Russell diagram (HRD). More simply, it plots each star on a graph measuring the star's brightness in relation with its temperature (color) between 2000K and 30000 K (Figure 1).
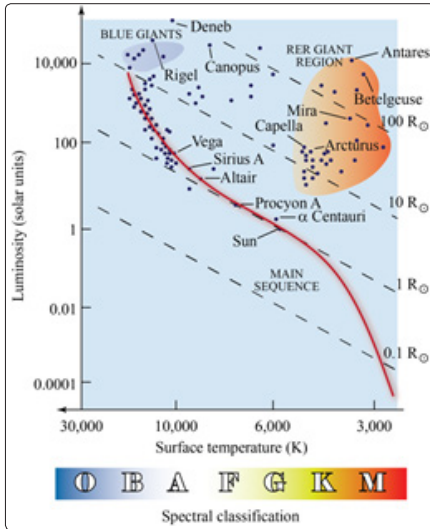

Figure 1: Hertzsprung-Russel diagram.
(red curve shows my assumption)

About 90 percent of the stars in the universe, including the Sun, locate in main sequence branch in HRD. Unfortunately, HRD shows only 4.0% of a selected ordinary matter.But where are the very hot celestial bodies? Where are us and the 96% of the universe in HRD? It includes a mysterious, invisible dark matter (23 percent) and dark energy (73 percent).

From 1910 until now the HRD is saying us that the upper and lower wings of main sequence of stars continue to infinity in aspect of its vertical axis or its both ends of horizontal axis are limited between positive infinite temperature and 0 Kelvin (Figure 1).

The HRD is a live diagram, which can show the full life cycle of a star from formation to end. The diagonal lines indicate the stellar mass and size. If it has a little mass, it cannot become a star, then comes back to black end of HRD. The mass is produced somewhere near the O Kelvin and stars exist at right side of diagram. If the mass is abundant, then it goes to main sequence and evolve until finish own hydrogen resources. After that go upward to giant branch, then explode, next most energy goes upward and remained mass becomes white dwarf, then to brown dwarf and finally become dark and cold matter and dark energy, and concentrate in black end of HRD.

For this reason, I attempted not only to improve HRD and to transform it to the Everything Diagram. I sought its mathematical model. Astronomy registers the celestial bodies, surface temperatures of which oscillate 0Kelvin to some million degrees in the universe. To accommodate everything in HRD we need to extend the effective temperature scale from 0 Kelvin to infinity. Unfortunately, the logarithm-scale cannot to grant a petition. Everything does not set

in HRD, because where the effective temperature of stars is given in logarithm scales, which is not enough for range of everything (Figure 2).
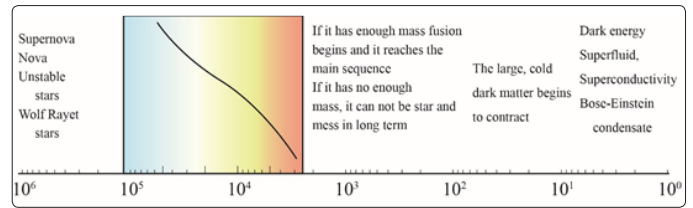

Figure 2: Temperature range of everything

According to my study the logarithm scale of effective temperature in HRD is a source of big trouble in astrophysics and cosmology as David Gross called it"Curse of Logarithm" [4].

If we see the logarithm scale in close, its intervals mathematically equal each other: 0 to 10 or 1-10, 10-100; 100-1000, 1000-10000 and so on. But these are not same in aspect of physics. For example, 0 to 10°C temperature has not so big difference, but 100-1000°C can burn the ordinary materials and 10000°C to one million does not happen in everyday life, and so on. So, we need to develop another scale, which can abbreviate more strongly everything in HRD.

Supreme Theory of Everything
Everything Formula

Everything is cyclic and cyclic processes are infinite. For this reason, take into consideration of HRD the complete theory of everything includes a convolution function (1), which consists of next examples of formulas:

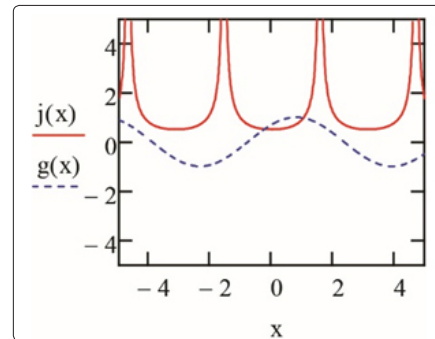$$g(x) = \sin\left(x + \frac{\pi}{4}\right) \qquad j(x) = \frac{1}{2|\cos(x)|}$$

Figure 3: Components of convolution

Since, the Supreme Theory of Everything is described by next formula:

$$f(x) = \frac{a \cdot \sin(x - \theta)}{|\cos(x)|} \qquad (1)$$

Here a indicates a constant (thickness) of media,
θ is the angle of incident ray,
x denotes the refraction angle, and
b is a constant depending applications

We show here only the coefficients of formula in case of light transference in a media. For simplicity and easy understandable we used $a=0.5$, $\theta=\pi/4$ and $b=0$ in this paper.

The Formula (1) can describe all laws of universe written by the sine, cosine functions in form of expression 1/0 or 1/x.
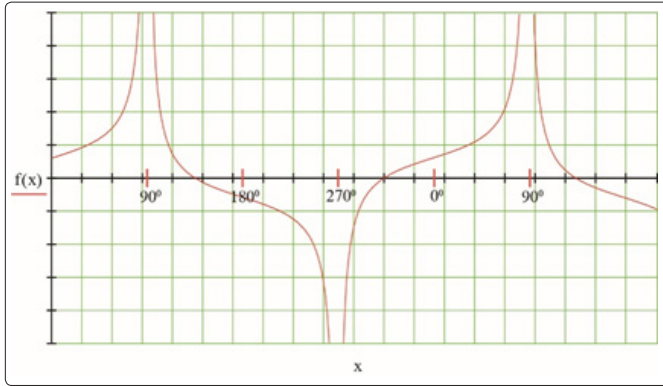

Figure 4: Everything Diagram (ED) of STE, in which shown the traditional HRD by a rectangle (informal scaling)

Everything Formula describes everything by frequency, wavelength, phase, amplitude of waves, without any classic physical variables such as mass, velocity, force and so on.

The Supreme Theory of Everything is simplest theory, which is understandable for everybody. It suggests that everything is only wave. We live in waves and we are also the waves ourselves.

Kip Thorne wrote that simplicity is the touchstone in finding new physical laws [5]. If it's elegant, then it's a rough role of thumb: you're on the right track.

This convolution function includes the wave function, inside of which lurk multitude events.

$$f(x) = \frac{\sin\left(x+\frac{\pi}{4}\right)}{2|\psi|} \quad (2)$$

The wave function is function of mathematics circle. Since, the Supreme Theory of Everything indicates behavior of Quantum Mechanics.

Singularity
STE indicates two large singularities, where the divisor of it equals 0 or limits to 0 shown on Figure 4 [6]. One is the black singularity such as black hole, axis of which lies at O degree Kelvin temperature or absolute zero ($x=\pm3\pi/2=270°0=4.712$) and other is the white singularity such as white hole at $x=\pm\pi/2=\pm90°0=1.57$. Since, the spectral radiation of the bodies is determined by next relation:

$$0 \leq \frac{r_{\lambda,T}}{e_{\lambda,T}} \leq \infty \quad (3)$$

Where $r_{\lambda,T}$ is the emissivity of a body and $e_{\lambda,T}$ denotes absorptivity.

Since, now the Hertzsprung-Russel Diagram becomes really the Everything Diagram. When the ratio $\frac{r_{\lambda,T}}{e_{\lambda,T}} = \frac{0}{1} = 0$, it is an absolute black body, which absorbs only energy and cannot emits. If the

$\frac{r_{\lambda,T}}{e_{\lambda,T}} = \frac{1}{0} = \infty$, emissivity becomes 100%, then its absorptivity is 0%, the ratio is infinite.

It means an absolute white body emits with a very high energy. But the ratio fluctuates in interval

$$f(x) = \begin{cases} 0 \ energy \ goes \ to \ infinity = white \ body \ or \ white \ hole \\ 0 < 1 < \infty \ stays \ on \ basic \ state = grey \ bodies \\ \infty \ No \ radiation \ energy = black \ body \ or \ black \ hole \end{cases} \quad (4)$$

Zero energy density or dark energy becomes infinity at black singularity.

New Scale of Everything Diagram on Horizontal Axis
To avoid the disadvantage of traditional HRD we suggest the projection scale of a circle on tangent or horizontal axis. The temperature range condenses only by projection scale of circle (Figure 5 and Figure 6), which is most compressive than logarithm scale used in HRD.

Projection of circle on the horizontal axis as a Zeno-paradox (Figure 6) indicates the scaling of everything diagram and its change is described by next formula:

$$DD_1 = 1 - \cos\beta$$
$$D_2D_1 = \cos\beta - \cos2\beta$$
$$D_3D_2 = \cos2\beta - \cos3\beta \quad (5)$$
$$D_nD_{n-1} = \cos[(n-1)\beta] - \cos(n\beta)$$

Where n denotes the number of degrees on the circle.

Everything formula can scale itself. It is a periodic wave function (ψ) describing by sine and cosine functions. But its monotonic property is described by two large singularities in Everything Formula (1).
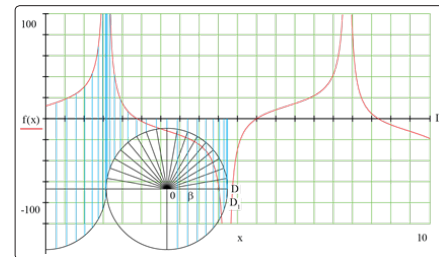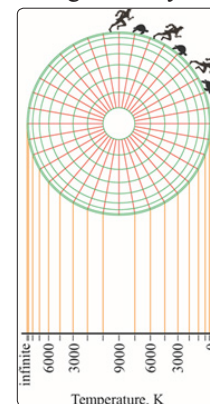

Figure 5: Scaling of Everything Diagram

Figure 6: Zeno-paradox on the perimeter of circle scale, but absolute temperature scale on lower axis respectively

In Figure 6 the footrace of Achilles and the tortoise is shown on the perimeter of circle, but Zeno-paradox projects on the horizontal axis. In lower scale the celestial bodies is indicated with very high temperature over the 60000K and mysteries black bodies and black energy are lower the 3000K temperature to zero.

The circle scale also may show the structure of atom and its energy level (Figure 6). The emitting energy of atom increases inward and absorbing energy decreases outward.
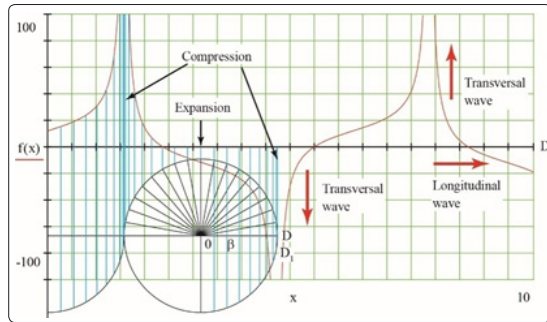

Figure 7: Everything diagram as seismic waves

The seismic waves in macroscopic level look like the wave function in microscopic level.

Sensitivity and Infinite Possibility of Everything Formula
The early universe begins with a Big Bang, which is the end of a big black singularity. For this reason, the beginning and finish of early universe are unnatural.

The ψ wave function in Supreme Theory of Everything is very sensitive in time evolution. The whole universe and everything are not a random fluctuation. Because $g(x)$ and $j(x)$ functions in Everything Formula exist a combined influences same to a logarithmic ruler on the final results. The degree of sensitivity of outcome is very large and we can determine the impact of a variable under sensitivity analysis and make a catalogue for it (Figure 8). Some interval of everything formula may indicate weirds as socio-economic phenomena, climate fluctuation in different time-scale (Figure 8, Figure 9 and Figure10), and so on. It is also to seek to identify important connections between observations, model inputs, and predictions or forecasts, leading to the development of better models.
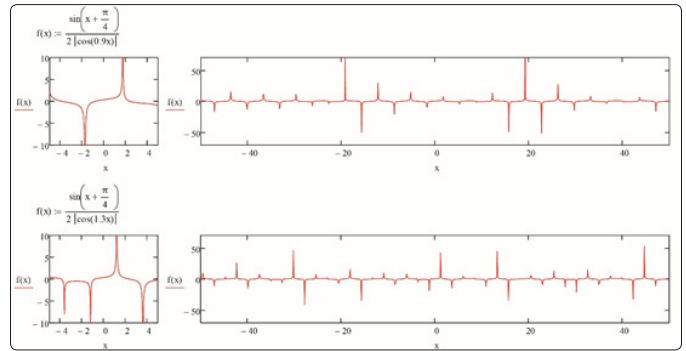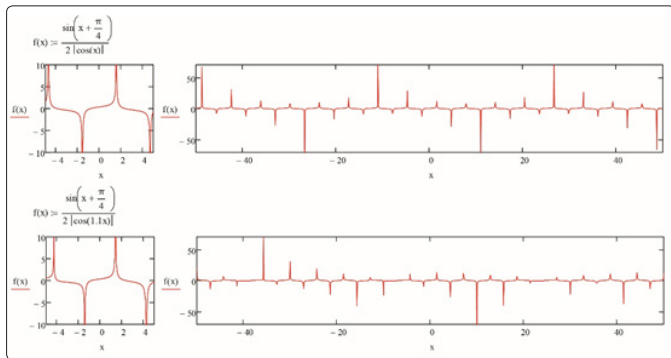

Figure 8: Sensitivity of Everything Formula as logarithm ruler
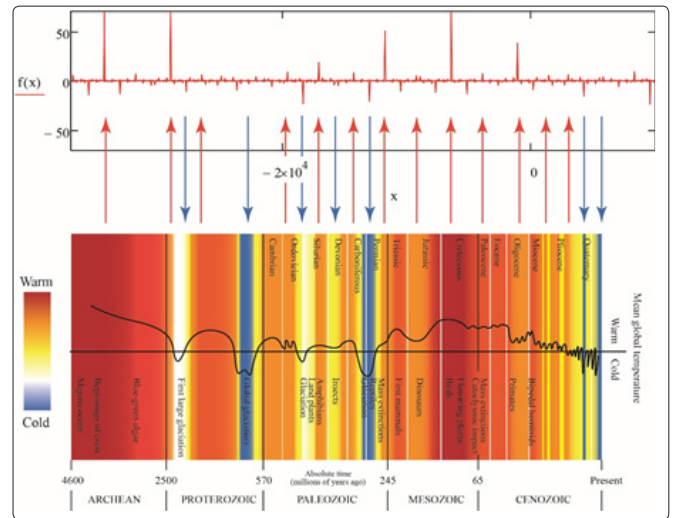

Figure 9: Climate change in Earth'shistory: above, by STE and lower, climate history

The accuracy of relation between calculation by STE and climate fluctuation in Earth's history is 60-65 percent.
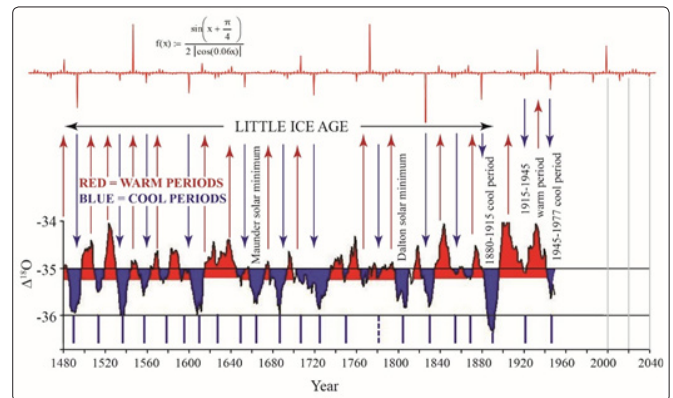

Figure 10: Climate fluctuation of last 500 ys a) by Supreme Theory of Everything (1) And b) Greenland ice core data

The accuracy of relation between calculation by STE and Greenland Ice data is 80-85 percent. So, we can read 2020-2030 will hot years, then 2030-2040 follow normal years.

Two comparisons are only visible rough images Figure 9 and Figure 10. But the climate fluctuation in Little Ice Age is more precise than

in early climate history of the Earth.

Everything Duality

Same like white and black singularities of STE everything has duality. We can list: White-black, real-complex, death-born, breath in (as born)-breath out (as death), happiness-suffering, success-failure, come-go, find-lose, rich-poor, warm-cold, old-young, south-north, clever-stupid, liberal-helluo, long-short, positive-negative, and so on. These dualities are inseparable as north pole-south pole of a magnet. For example, everybody has proper circle of life describing by Everything Formula. Supreme Theory of Everything shows this kind of conjugate by two singularities in a full circle.

Negative event exchanges by positive, but as soon as comes back the negative one, and so on. There are all observable and unobservable possibilities in the wave function and everything formula, as said Sean Carroll, reality is a combination of all the observable possibilities, combined into a single wave function.

The spectrum of Everything Function depends on the selections of interval, coefficients of formula for determinations of all the phenomena of nature, geography and socio-economics, biology including human life, religion, culture and consciousness.

Reconciling of andElectroweakForce withStrong Force

Sean Carroll said that strong force is confined and force-carrying gluons interact with themselves, not letting them ever escape to the outside. It is like a closed shutter. Weak force is absorbed and force-carrying W/Z bosons interact with a Higgs field that pervades empty space. It like an obscuring fog.

It looks like to Everything Function (Figure 11) and is also same in case of the Earth or other planets. Earth's gravity is very large in its center, but weak outside into interplanetary space.Earth's surface is an inflection.
The strong and low energy interactions of nuclei are shown in Everything Formula (1).

$$f(x) = \begin{cases} 0 & \text{go to infinity} = \text{internal or strong interactions} \\ 1 & \text{stays on basic state} = \text{inflection point} \\ \infty & \text{go to 0} = \text{external or weak interactions} \end{cases} \quad (6)$$
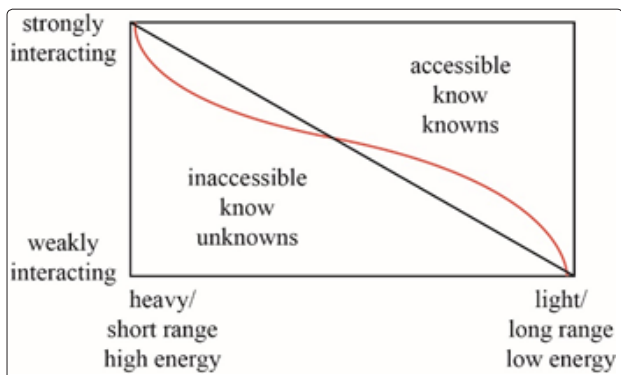

Figure 11: The strong and low energy interactions of nuclei (Following Sean Carroll's illustration)

The inflection point indicates the surface of a glove or of two different media. For example, from Earth's surface (inflection surface) downward (to Earth's center) effect strong interaction and upward (from Earth's surface to interstellar space) weak interaction to interplanetary and interstellar space objects. The Earth's surface (2D) separates earth's structure into the internal mass (3D) and external forces (3D or xD).
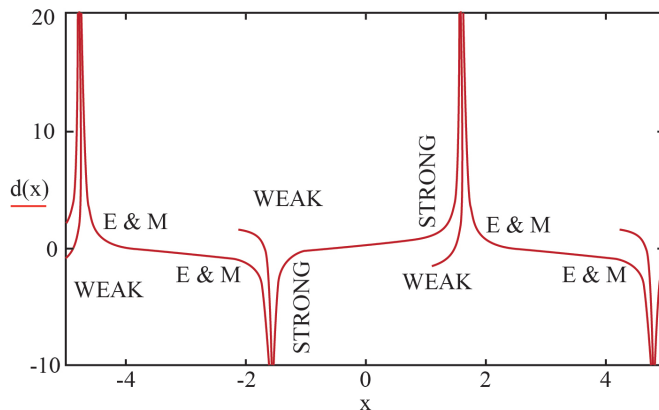

Figure 12: Reconciling of strong and weak forces with electromagnetic force

The singularity looks like David Gross's speech"The bottleneck in particle physicsis in experimental-not theoretical".

In Figure 12 we also see the electromagnetic force generates from the ordinary matter in HRD. The electroweak force and strong forces produce the gravity by singularity and entanglement.

Evolution of the Universe

Based on the Supreme Theory of Everything we can draw the evolution of the universe and its time evolution shown in Figure 12 from which we conclude that the universe begins by Big Bang and then through the normal expansion to Big Chill, after that collapses to Big Crunch or only Crunch, which becomes a new Big Bang and so on [7].
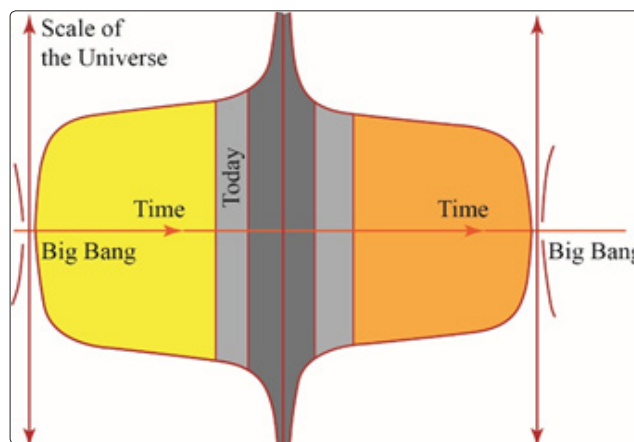

Figure 13: The time evolution of the universe

We can see from Figure 13 the expansion of the universe nowadays is speeding up, but not forever. After expanding of universe, the big crunch follows and then again Big Bang.

Parallel Universes

Now we have a general idea about the parallel universes. Every singularity has different mass, size, length. The singularity can transform xD to 2D and 2D to 0. Some singularity develops to wormhole and connects another wormhole of parallel universe. Another singularity cannot transform to the wormhole. It means that a singularity looks forward a partner by entanglement. So, the parallel universes may exist by next versions shown in Figure 14.
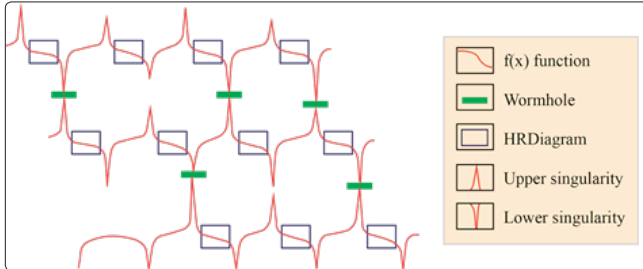

Figure 14: Parallel universes connecting between upper-lower or white-black singularities

If the singularity cannot find another singularity with connect by wormhole, a new baby universe has possible to be born. In this case the background of singularity will be entangled baby universe. Another possible connection between white-white and black-black singularities of parallel universes (Figure 15)
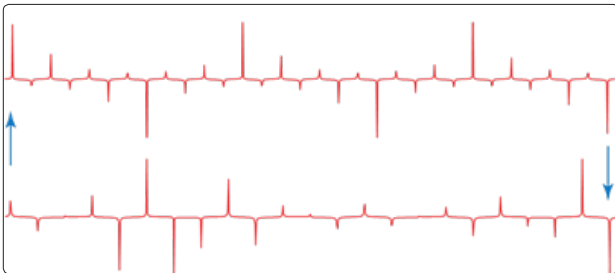

F**igure 15:** Possible white-white and black-black connections of parallel universe shown by blue arrow

Finally, based on over all the results I would like to call this theory as Supreme Theory of Everything (STE).

Conclusion

1. Everything theory is described by next formula:

$$f(x) = \frac{a \cdot \sin(x - \theta)}{|\cos(x)|} + b$$

2. Everything Formula is periodic, monotonic and very sensitive in time evolution.
3. The circle scale is more optimal than logarithm scale for determination of the extreme events of nature.
4. Unification of the electroweak and strong forces becomes gravity by impact of singularity.
5. Some singularities of STE develops to wormhole and connect other wormhole. Another can transform the wormhole or cannot. It means that a singularity looks forward a partner universe by entanglement. So, the parallel universes are there.
6. Universe begins to form by Big Bang and then expands to Big Chill, after that collapses to Big Crunch or only Crunch, which produces a new Big Bang.

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