



INFINITY THEORY

THE FIFTH DIMENSION SPACE-TIME

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Refers to the paper published in the history of Citation:
AIP Conference Proceedings 1863, 560087 (2017); doi: 10.1063/1.4992770.

View online:

<http://dx.doi.org/10.1063/1.4992770>

View Table of Contents:

<http://aip.scitation.org/toc/apc/1863/1>

Published by the American Institute of Physics journal under the title
“Transformation equations to the fifth dimension”

Abstract

Since the discovery of the Superluminal and other findings, some scientists have begun to believe that there are particles traveling at speed faster than the speed of light. The problem was that the Lorentz Transformation Equation, [1] which deals with only four dimensions was not allowing that. In this paper I insert the fifth dimension to the basis of the Lorentz equation and come out with three equations that explain the state of all matter in all universes before, during and after the speed of light.

The good thing is that the fifth-dimension equations do not contradict or conflict with Lorentz equation and it will turn as Lorentz transformation equation when we substitute the Variable constant $K = 1$.

Also, I will explain how my theory complete the existing theories (Classical physics and Relativity, etc.), This theory can explain the state of the universe in determining its shape, age and diameter, and the states of matter with a new definition that unites all forces and also defines gravity in one law.

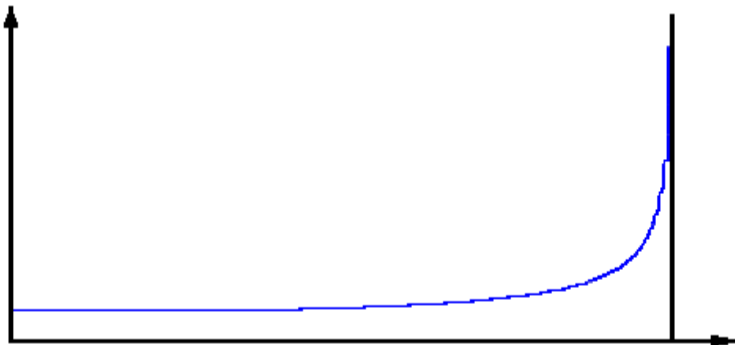


Figure No. 1, Lorentz factor as a function of velocity $u \rightarrow c$

What I didn't like about this form since I was studying in high school, why doesn't the photon go to infinity mass because it has mass and gravity?

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Keywords

Lorentz transformation equations, "Relativity: The Special and General Theory", Isaac Newton, Kluza-Kline, Louis de Broglie, [H. M. Fried](#) & [Y. Gabellini](#), Faster-than-light, Tachyons, Dark-matter, Dark-energy, the Big Bang, Minkowski, Newton's Law of universal Gravitation, Eisenstein's Field Equation (EFE), Friedman Equation Planck evidence, The 'X17' particle, Gravity, Universe.

Introduction

At the end of his book, "Relativity: "The Special and General Theory" [2] Einstein leaves us with this: "The main question for the present is to know if a field theory such as the one which we have considered here can generally lead to some main conclusion. By theory I mean one which describes physical reality (including four-dimension Space-Time) in a completely encompassing way"

In the present paper we are trying to present the theory that Einstein demand.

According to Einstein's special theory of relativity [3], in our real world, particles can never travel faster than light. But new research proposes that faster-than-light particles could answer a lot of questions about the universes as dark matter, dark energy, and the Big Bang (tachyons for example).

In Einstein's relativity special theory, the assumption that gives the speed of light in a vacuum a special status and that light always travels at the same speed regardless of that observer's and sources, requires that the Newtonian concepts [4] of high velocities be modified.

Also, in our theory of Infinity and the Fifth Dimension, requires the assumption that the speed of light is constant but not absolute, and therefore Einstein's concepts must be modified to speeds higher than the speed of light and the new constant now is the speed of what I call it: Al Noor, the very high-speed state of matter which is not detectable by our instruments like what we call dark matter (high energy, high speed). The speed of "AL Noor" is equal to $100 C^2$ (where C is the speed of light).

Let us complete the study to explain a new state of physics when the universe is faster than the speed of light and explain all phenomena of the visible universe and other universes.

Without getting into any discussion about the four dimensions, we will attempt to explain the new dimension entitled the fifth dimension by addressing the following questions:

- What is the fifth dimension?
- What is the influence of the fifth dimension on physics?
- Why do we need the fifth dimension?
- Are there other dimensions and do we need more than five?
- How can we prove the existence of the fifth dimension?

The Fifth Dimension

The fifth-dimension theory is not an innovation.

In 1927, Kaluza-Klein, [5] announce his theory of the universe with five dimensions.

The great physicist LOUIS DE BROGLIE, [6] the father of wave and quantum mechanics, took KLEIN's thesis and wrote about it: "KLEIN's memoir did not seem to me immune from criticism, I took over the question and I have come to a form of spreading equation in the five-dimensional universe that seems to me preferable to the form proposed by Mr. KLEIN. Finally, after having had some success, the theory of the universe to five dimensions has been abandoned but perhaps we will come back to this theory."

And there are many scientists try to build theories to solve some unsolved problems in modern physics and cosmology, However I tray here to explain the new theory and to make it more specific and useable especially questions came after Big Bang theory. I think you will share with me that theories that claim to be the theory of everything are not enough.

Some decades before, I said that physicists and their Standard Model of physics are in trouble.

Right now, there are big questions about our universe that current physics can't answer. Despite efforts of a lot of brightest brains, the standard model has no answer to these questions:

- What speed the Big Bang begin?
- What was there before it?!
- Are there other possible universes?
- For that matter, what caused the Big Bang?
- Is there existence and solution for particles is faster than the speed of light?
- Is there a telltale characteristic associated with the death of a universe?

- What caused inflation, the blindingly fast expansion of the universe immediately after the Big Bang?
- What is dark energy? the mysterious energy that appears to be accelerating the expansion of the universe?
- What is dark matter? the invisible substance we can only detect by its gravitational effect on stars and galaxies?
- Why the expansion of the universe is accelerating?
- How to explain the imbalance between matter and antimatter in the universe?
- Can faster-than-light particles explain dark matter, dark energy, and the Big Bang? [7]

As we know in Newton theory, there are three dimensions: X, Y, Z. Minkowski, [8] tell that the fourth dimension is The Time, T. In the Theory of Infinity, the fifth dimension is The Velocity, V. To understand this assumption of the theory, we need to introduce a more inclusive definition of velocity.

- There are three ways of looking at velocity:
- Dependent velocity is a relation between distance and time (classical definition).
- From the fifth dimension's point of view there is an independent velocity which has an absolute value and a constant value. (For example, the speed of sound and the speed of light and others as new constants that Theory of Infinity will propose).
- Velocity can be a dimension because velocity equal distance divide by time and both are dimensions.

With this new understanding of velocity, we can begin to more precisely unravel the construction of the universe in a more complete and comprehensive way.

We must look at velocity as a new value that changes the phenomena of physics.

When speed is seen as an independent variable it creates a new dimension of its own (V) just like the relative time creates its own dimension (T). That is why Velocity is the fifth dimension.

Like the fourth dimension of time T brings us SPACE-TIME and his deformations, the fifth dimension of velocity brings us the change phase of matter.

Einstein demonstrated that the time was relative to the mass, He studied the matter outside classical physics, where the maximum speed is the speed of light. In the fifth-dimension theory the speed of light is constant but not maximum speed. So, In the theory of Infinity, When the matter exceeds the speed of light, the matter undergoes a phase transition.

What is needed is some new kind of consequence of 5Dimension, which will highlight fresh physics Not to be found in 4Dimension.

The Influence of the Fifth Dimension in the Universes

The fifth dimension expands our knowledge and awareness of the universe. We can understand most of the things that "theory of relativity" and other theories that followed cannot explain the new phenomena in physics and understand our physical universe and other universes. Thus, the world passes from the scientific stage to the stage of knowledge and awareness.

Do we need The Fifth Dimension?

YES, we need the fifth dimension to explain the Metaphysics by way of physics and to explain some puzzling questions scientists currently look for like: building and shape of the universe, attraction, space, time, black holes, the field, age of universe, diameter of universe, The amount of expansion of the universe in a second, dark matter and dark energy etc.

Are there other dimensions and do we need more than five?

In physics according to mathematical equations there are (n) dimensions. For now, we only need five dimensions to explain the mysteries of the universe. In the future you may need other dimensions depending on the nature of the problems that will appear. As the fifth dimension is "Velocity", the sixth will certainly be "Acceleration"!

The Fifth-Dimension proof

See details about Transformation Equations here:

<http://aip.scitation.org/toc/apc/1863/1>

According to the foundations established by Lorentz, the equation of the shape of the fourth dimension as shown in equation (1)

$$\frac{dT}{dt} = \sqrt{1 - \frac{v^2}{C^2}} \quad (1)$$

Where v speed of particle, C speed of light, T is fourth dimension and t is time.

This is applied assuming that the fastest speed will be the speed of light. The quantity under the square root in equation (1) is positive when v is less than C .

Einstein proves that the speed of light is the same in the vacuum for all observers independent of the speed of the observer or light source, if the observer will never move at the speed of light.

But we can explain what will happened when the observer ride with the speed of light or with faster than the speed of light.

According to the fifth dimension and with the same basic in Lorenz transformation equation to proof the Fifth Dimension and adding my assumption to the fifth dimension = iNV ,

an imaginary term where:

$$i^2 = -1, N \text{ is time and } V \text{ is velocity as the Fifth Dimension.}$$

We have three cases to study (see document):

- In the case where the compensation of the fifth dimension is by a real value and the distance is a real value or the compensation of the fifth dimension is by imaginary value and the distance is imaginary value too, the equation of transformation then becomes:

The speed of light = the speed of particle, (The Photon)

$$\bullet \quad C = v \quad (2)$$

- In the case where the compensation of the fifth dimension is by a real value and the distance is imaginary, the equation of transformation then becomes:

$$\bullet \quad \frac{dV}{dt} = K \sqrt{1 - \frac{v^2}{C^2}} \quad (3)$$

When $K=1$ it became Lorentz transformation equation, mean no conflict with basis of relativity, then the four-dimension space time became special case in general theory of 5th dimension.

- In the case where the compensation of the fifth dimension is by an imaginary value and the distance is real, the equation of transformation then becomes:

$$\frac{dV}{dt} = K \sqrt{\frac{v^2}{c^2} - 1} \quad (4)$$

Equation (4) is positive when v is greater than C . This is allied to the philosophy that supposes that there are greater speeds than the speed of light.

As the speed of sound is the threshold of classical speeds, the speed $AL\ Fasl = C/\sqrt{2}$ is the threshold of higher speeds, this does not mean that the other theories are erroneous but that each theory is valid under a certain speed but has trouble with speeds over this one:

We can equally say that Newton's laws can be verified in the domain where classic speed are under the speed of sound and Euclidean space can be found.

The laws of relativity can be verified when speed is between the speed of sound, and the speed of $AL\ Fasl = C/\sqrt{2}$ in a non- Euclidean (Jawesian) space.

If possible, the existence of faster speeds than the speed of light. The right idea in this situation is to consider Newtonian's theory relativity theory are special cases inside the general case as the Fifth-Dimension theory as the next diagram showing. See the diagram below.

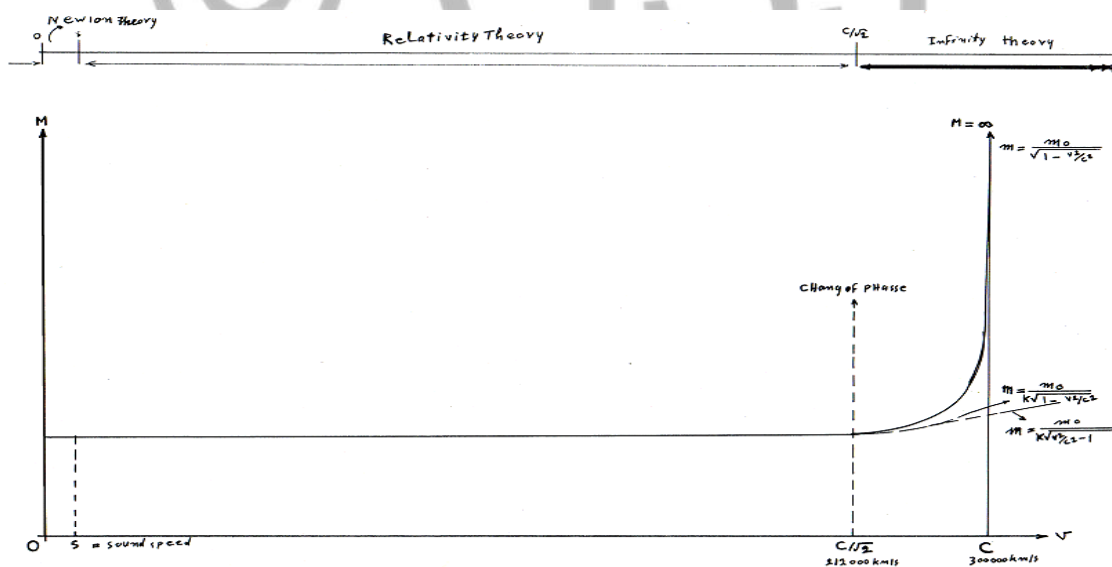


Figure No. 2, Fifth dimension theory (Infinity Theory) factor as a function of velocity.

I am not here to oppose certain scientists, but to bridge the gap in existing theories, which are intensified for scrutiny until we arrive at a more general theory explaining the states of the universe from the first subatomic matter and even the biggest body in the universe.

Hypothesis of Infinity Theory and the Fifth Dimension

As seen above, the theory of Infinity introduces some new concepts:

- The fifth dimension is Velocity (V), and we must rely on the fifth-dimension transformation equations from now and in the future.
- All materials in universe, all cases of matter mean in absolute definition (any oscillation is mass), then we can unify the law of great power and the weak power in one law, then there is no emptiness in space.
- Infinity theory expand its field to speeds faster than speed of light and complete standard physics theories (Newtonian, Relativity, ...etc.). The speed of light is constant, not absolute and the speed of (Al Noor) = $100 C^2$ is the new absolute constant in the universes and we can overtake or cross the speed of light by change phase of matter. Particles that have a speed faster than the speed of light form the invisible part of the universe (what we call dark matter and dark Energy).
- Gravitation in the universe finally is explained by gravity law of Newton and Einstein together depends on the case. All materials in universe all cases of matter they are going by gravitation to the center of universe except if there is other bigger force attraction field in other direction.

A proposal for unification:

Here, I would like to echo my new proposal.



9] s Law of Universal Gravitation 'Newton]

$F = G \frac{m_1 m_2}{r^2}$	(5)
-----------------------------	-----

Where, M1 is the first mass
 M 2is the second mass
 r is the distance between M 1and M2

$G = \frac{F}{m_1 m_2} r^2$	(6)
-----------------------------	-----

Einstein's Law of Gravity [10]

Which explains gravity as a distortion of space (or more precisely, space-time) caused by the presence of matter or energy. A massive object generates a gravitational field by warping the geometry of the surrounding space-time. Einstein's field equation is generally written in the following

$R_{\mu\nu} - \frac{1}{2} R g_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}$	(7)
--	-----

Where:

$G_{\mu\nu}$ is Einstein tensor

$R_{\mu\nu}$ is the Ricc tensor

R is the scalar curvature and is the signature (+, -, -, -)

$g_{\mu\nu}$ is the metric tensor

Λ is the cosmological constant

$T_{\mu\nu}$ is the Energy – Momentum tensor

G, the gravitational constant = $6.67430(15) \times 10^{-11} \text{ m}^3 \cdot \text{kg}^{-1} \cdot \text{s}^{-2}$

c the celerity constant, equal to the speed of light in a vacuum (exactly 299 792 458 m/s)

The Einstein field equation is understood as an equation for knowing the metric tensor $g_{\mu\nu}$, given a material and energy distribution expressed in the form of an energy-momentum tensor.

The cosmological constant Λ , was introduced by Einstein to allow static solutions to the cosmological model derived from the Einstein equation. Subsequently, he described this introduction as "the biggest mistake of his life".

By defining the Einstein's tensor like this:

$R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} = G_{\mu\nu}$	(8)
--	-----

And if we consider that $\Lambda = 0$ (which Einstein finally admitted, but which is controversial today), it is possible to write this relation more compactly:

$G_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}$	(9)
--	-----

The left-hand side represents the curvature of space-time as determined by the metric, and the right-hand expression represents the mass-energy content of space-time. This equation can then be interpreted as a set of equations describing how the curvature of space-time is related to the mass / energy content of the universe.

These equations, as well as the geodesic equation, form the core of the mathematical formulation of general relativity.

We can deduce this equation which show the Gravitational constant:

$G = G_{\mu\nu} \frac{c^4}{8\pi T_{\mu\nu}}$	(10)
--	------

Helmy's Law of General Gravity

express G the Gravitational Constant which is constant in space-time To unify the laws of gravity, we can

$$G = \frac{F}{m_1 m_2} r^2 \text{ and } G = \frac{G_{\mu\nu} c^4}{8\pi T_{\mu\nu}}$$

$$\therefore \frac{F}{m_1 m_2} r^2 = \frac{G_{\mu\nu} c^4}{8\pi T_{\mu\nu}}$$

$\therefore F = \frac{G_{\mu\nu} c^4 m_1 m_2}{8\pi T_{\mu\nu} r^2}$	(11)
---	------

Infinity Theory, Cosmology and Universe Model:

I wonder how many models of the universe have been mentioned during the history of physics and cosmology or under study, especially the comic battle between those who believe in the creation of the universe and those who say it came from nowhere and made himself, and all those who support them to prove the universe that fits his philosophy and convictions, and I am trying here to put the model Final.

I would consider **Friedman's equation, [11]** as a model of the universe, especially the spherical universe and the average density of matter in universe space is equal in all parts, which is greater than zero. The entire spherical rotation of the universe contains several universes as seven univrse in the same field and separates them from each other according to frequency (mass, energy and speed). Dark matter is the essence of hidden universes whose speeds are greater than the speed of light, and each universe has its mass and constant velocity. The universe expands into which everything revolves around itself or around the other influenced by the force of gravity.

Time began with the Big Bang to determine the beginning and end of any oscillation in the universe linked to a specific time. The expanding of universe correlated in the time, Time is the wisdom of content control, the ball is the most complete form in space relative to the Gothic school, and it is also a very important concept in the modern understanding of non- Euclidean (Jawesian) space.

For Theory of Infinity, the spherical model is the most suitable model for understanding the evolution of observable and unobservable universes since the first moments of the Big Bang:

$$(\Omega_0 > 1, \kappa = 1)$$

$$H^2 = \frac{8\pi G\rho}{3c^2} - \frac{k}{R^2}$$

where ρ = density
 k = curvature parameter

G = gravitation constant
 R = dimensionless time-dependent scale parameter
 H = Hubble parameter

(12)

$$H^2 = \frac{8\pi G\rho}{3c^2} - \frac{k}{R^2}$$

where ρ = density
 k = curvature parameter

G = gravitation constant
 R = dimensionless time-dependent scale parameter
 H = Hubble parameter

New researches consolidate this idea of a spherical or closed universe.

The researchers are basing themselves on new data from the Planck astronomical telescope, an apparatus aiming to observe the universe in its smallest corners and thus to explore its past. See more details in this document: Planck evidence for a closed Universe and a possible crisis for cosmology

<https://www.nature.com/articles/s41550-019-0906-9> [12]

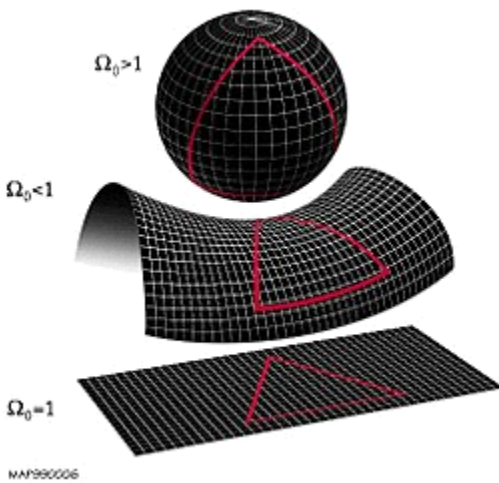


Figure No. 3, Shape of the universe, in 3 cases depends on density in the universe.

Consequences and novel effects:

Infinity theory is a general theory for simple reasons: It is built on five dimensions and can handle more speed faster than light, a unified law of great powers and weak powers, and one law of gravity as well.

Infinity theory considers particles with speed faster than light and define a new constant as speed of AL NOOR = $100c^2$. which I get it from good source and using try and error.

These particles, which have speeds over the speed of light and are not detectable by our instruments form the hidden part of our universe: dark matter which is hypothetical matter that does not interact with the electromagnetic force, but whose presence can be inferred from gravitational effects on visible matter. According to present observations of structures larger than galaxies, as well as Big Bang cosmology, dark matter and dark energy account for most of the mass in the observable universe.

Perhaps one of the most surprising discoveries of the 20th century was that the ordinary (or baryonic) matter which forms our visible universe makes up less than 14,3 % of the mass of the [universes](#).

The rest of the universe appears to be made of a mysterious, invisible substance called dark matter and a force that repels gravity known as dark energy.

In the colliders, researchers are tracking down what could be particles associated with dark matter and dark energy. which will challenge and complement the standard model of physics [13].

<https://bigthink.com/surprising-science/fifth-force-nature?rebellitem=4#rebellitem4>

<https://www.eso.org/public/videos/potu/>

Here is some point to proof that my new constant as Al Noor is correct because I have been using this constant with try and error to get such result as this:

The diameter of the universe = 5.7×10^{26} m.

The age of universe = 15.8 billion years.

The universes expanding is 70 km/sec

I did calculating the age and diameter of universe and expanding of universes before 1992 as it is mentioned in my book, (The Infinity Theory and the Fifth dimension, 100 question without answer),[14].

Conclusion

Our newly born theory says that speed is the Fifth Dimension, the Velocity of light is constant, but not absolute, and that universes have a new absolute velocity, and the Big Bang began with the speed that I suggest as Al Noor = $100 C^2$ spread across all universes, carrying all the components and replacing the Ether. It is the new absolute constant of universes, so we can explain metaphysics in the physical way and get an easy answer to questions in modern physics and cosmology.

I believe it is time now to give place to the theory of infinity for fifth dimension space-time.

For examples from the:

- Equation No, (1) Lorentz can solve all the problems of particles in speed less than speed of (Al-Fassl) = $\frac{c}{\sqrt{2}} = 212132$ km/sec (where C, speed of light).
- Equation No, (2) we can solve the problems of particles move in speed of C.
- Equation No, (3) we can solve the problems of particles in speed under C.
- Equation No, (4) we can solve the problems of particles in speed up than C.
- Equation No, (11) solves the problem of gravity between objects in all cases of matter and speeds.

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