June 2016

Vol 3, No 6 (2016)

Sai Om Journal of Science, Engineering & Technology: A Peer Reviewed National Journal (Online ISSN 2347-7547)

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Published by: Sai Om Publications

Sai Om Journal of Science, Engineering & Technology

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TO STUDY THE EFFECTS OF SPACE/TIME ANOMALIES SPECIFICALLY WITH RESPECT TO SPACE/TIME TRAVEL (PAST, PRESENT AND FUTURE) AND THE IMPACT OF 'N' DIMENSIONAL SPACE ON SPACE/TIME AND MATTER

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ABSTRACT

The main purpose of this to adequately explain space expansion/contraction using 'n' dimensional co-ordinates and space also to determine how the region of the higher dimensions namely, 4 th, 5 th, 6 th .. n th dimension can be discovered in 3 dimensions. Similarly, adequately explain time expansion /contraction. Using the above, explain space/time travel with respect to different frames of reference including a normal frame of reference. Explain the applications of above space/time expansion /contraction in space/time travel and in the discovery of new chemicals, materials, pharmaceutical drugs and their properties. Explain the application of space/time expansion/contraction in medicine and living organisms.

Keywords: Space; Time; Matter; Expansion; Contraction; Imaging; N dimensions

OBJECTIVES

1. To adequately explain space expansion/contraction using 'n' dimensional co-ordinates and space
2. To determine how the region of the higher dimensions namely, 4 th, 5 th, 6 th .. n th dimension can be discovered in 3 dimensions

BACKGROUND

It is a known fact that the human eye can perceive or see only 3 dimensional objects in space, higher than 3 dimensions such as the 4 th dimension, 5 th dimension .. etc. and other higher dimensions cannot be seen or observed by the human eye though higher dimensions do exist (for Proof of existence of higher dimensions using Pythagoras Theorem see Appendix A). If we use the human eye to perceive higher than 3 dimensions in a 3 dimensional co-ordinate system then we will find that higher dimensions such as 4^{th}, 5^{th} … etc. are a function of the first 3 dimensions i.e. e.g.,

x4 = function of x1, x2 and x3 = f (x1, x2, x3)

Similarly for x5, x6, ….. etc.

Now from our earlier papers published by the same above author (Hatim Kanpurwala) (see – "A method to determine co-ordinates of planetary objects/stars and other objects in the sky/space in 3-dimensional Euclidean space with respect to the Centre of the Universe"[1] we know that,

$$(D11)^2 = (x11-y11)^2 + (x21-y21)^2 + (x31-y31)^2 + (x41-y41)^2 + \ldots (xn1-yn1)^2$$

……1)

Where,

Px1(x11, x21, x31, x41,….,xn1) is the co-ordinate of the heavenly object x1 in the sky or space,

Py1(y11, y21, y31, y41,….,yn1) is the co-ordinate of the sensor y1 on earth and

D11 is the distance between x1 and y1 in a n-dimensional space co-ordinate system.

Let us denote D11n as the "normal" distance in 3 dimensional space, where

$(D11n)^2 = (x11-y11)^2+(x21-y21)^2+(x31-y31)^2$

Now clearly, we can see that for real numbers,

D11 > D11n

⇨ That space can "expand" in n dimensional space compared to "normal" 3 dimensional space.

Now let try to prove that space can "contract" in n dimensional space.

For the time being let us assume that the higher dimensions i.e. 4^{th}, 5^{th}, … etc. are complex numbers, also let us assume that the real component of these higher dimensions are equal to the corresponding real component for the sensor co-ordinates e.g.

x41 = x41r + i(x41i)

x51 = x51r + i(x51i) …..

xn1 = xn1r + i(xn1i)

and

y41 = y41r + i(y41i)

y51 = y51r + i(y51i) …..

yn1 = yn1r + i(yn1i)

where,

x41r is the real component, (x41i) is the imaginary component and so on and so forth for x51, .. xn1 etc.

Similarly, for y41, … yn1

Also as we have presumed that corresponding real components of higher dimensions

are equal, hence

x41r = y41r …….

xn1=yn1r

Substituting above values in equation 1) we get,

$(D11c)^2 = (x11-y11)^2 + (x21-y21)^2 + (x31-y31)^2 - (x41i-y41i)^2 - ….. - (xn1i-yn1i)^2$

Where,

D11c is the distance between x1 and y1 assuming complex co-ordinates for higher Dimensions (4^{th} and above). We can clearly see that, because of the negative signs in the higher dimensions component { $-(x41i-y41i)^2 - ….. - (xn1i-yn1i)^2$ }

D11c < D11n

⇨ That space "contracts".

Similarly, in our earlier papers by the same author (Hatim Kanpurwala) (see References 2, 3 and 4) we have demonstrated that there can be space/time anomaly and/or space/time "expansion" or "contraction" using the equation given below –

$$c = s/t = \Delta s/\Delta t$$

where c = velocity or speed of light or any signal in space

s = distance travelled in time 't'

Δs = delta change in the distance travelled with respect to distance 'd'

Δt = this is the delta change in time with respect to time 't' for a change in distance Δs

The reason for the importance given to 'n' dimensional space is that it can adequately explain "expansion" /" contraction" of space using the higher dimensional "inflection points" or "dimensions", namely the 4^{th} dimension, the 5^{th} dimension and so and so forth till the nth dimension. Also it can be used to explain space/time travel as we shall see in the following sections (see section "Observations" and section "Applications" following this section)

From the above discussion we have concluded that there can be space/time expansion/contraction and also we have concluded that the human eye cannot perceive higher dimensions in a 3 dimensional co-ordinate system. In our earlier papers (see References 5, 6 on "N dimensional Eye" and "N Dimensional Eye – Addendum") we have mentioned that "Clustering" may enable us to determine the higher dimensions, namely the 4^{th}, the 5^{th} … and the nth dimension – let us see how.

Let us assume that there are Pm points for an object in 'n' dimensional space. We can determine the co-ordinates of the Pm points in 'n' dimensional space (see Reference 1).

Let the points be as follows –

P1(x11, x12, x13, x14, …..x1n) for point P1

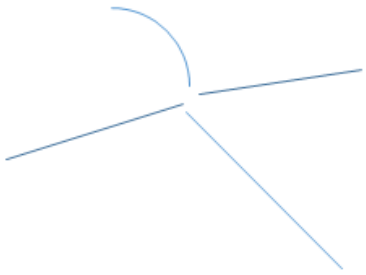
P2(x21, x22, x23, x24,……x2n) for point P2……

Pm(xm1, xm2, xm3, xm4, ….xmn) for point Pm

Now let us assume for the time being that the 4^{th} dimension is equal in all the points Pm, and let us say there are 4 clusters (as shown below) and they "seem" to intersect at point X and also amongst the clusters or Points Pm there are very few outlier or boundary points. Hence,

x14 = x24 = x34 = x44 = …. = xm4

As we can see there is one cluster which is a curved line and 3 straight line clusters with different slopes, all 4 clusters "seem" to intersect at a single point which is the whereabouts of the 4^{th} dimension in 3 dimensional space (see diagram below)



Similarly, we can determine the whereabouts of the 5 th, 6 th and other higher dimensional points in 3 dimensional space using this Clustering technique. The reason for determining the whereabouts of the higher dimensions, namely the 4 th, 5 th, 6 th …. n th dimension in 3 dimensions is we can then know or determine the location of these "inflection points" in 3 dimensional space which can be seen or

perceived by human eyes. Once these 'n' dimensional "inflection points" are determined then we can determine the gateways to space expansion/contraction for space/time travel.

OBSERVATIONS

Now let us take on a case by case basis to explain space/time travel in lieu of space/time expansion/contraction and above discussion. For explanation of below cases we assume that, AB is the "normal" distance travelled in normal time Tn. Also we assume that speed or velocity the user/object/signal or light is travelling is constant.

A ———— B

Time taken to travel AB is Tn

Case a) Let space expand and the time taken to travel through expanded space be a constant or equal to T1=Tn.

Here AB shifts to AB' where AB' is greater than AB. But as time taken to travel AB' is T1 = Tn, it implies that we have travelled a greater distance in the same time or in other words we have travelled in the "future" with respect to the normal frame of reference

Case b) Let space contract and the time taken to travel through contracted space be a constant or equal to T1=Tn.

Here AB shifts to AB' where AB' is lesser than AB. But as time taken to travel AB' is T1 = Tn, it implies that we have travelled a smaller distance in the same time or in other words we are travelling in the "past" with respect to the normal frame of reference

Case c) Let space be a constant or equal to AB and the time taken to travel through this space be equal to T1 where T1 > Tn (in other words time has expanded)

Here AB is a constant but as time taken to travel AB is T1 > Tn, it implies that we are travelling in the "past" with respect to the normal frame of reference

Case d) Let space be a constant or equal to AB and the time taken to travel through this space be equal to T1 where T1 < Tn (in other words time has contracted)

Here AB is a constant but as time taken to travel AB is T1 < Tn, it implies that we are travelling in the "future" with respect to the normal frame of reference

Case e) Let space expand and the time taken to travel through expanded space be equal to T1 < Tn (or time has contracted in addition to space expansion)

Here AB shifts to AB' where AB' is greater than AB. Also as time taken to travel AB' is T1 < Tn, it implies that we have travelled a greater distance in a lesser time or in other words we have travelled in the "future" with respect to the normal frame of reference.

Case f) Let space contract and the time taken to travel through contracted space be equal to T1 > Tn (or time has expanded in addition to space contraction)

Here AB shifts to AB' where AB' is lesser than AB. Also as time taken to travel AB' is T1 > Tn, it implies that we have travelled a lesser distance in a greater time or in other words we have travelled in the "past" with respect to the normal frame of reference.

Case g) Let space contract and the time taken to travel through contracted space be equal to T1 < Tn (or time has contracted in addition to space contraction)

Here AB shifts to AB' where AB' is lesser than AB. Also as time taken to travel AB' is T1 < Tn, it implies that we have travelled a lesser distance in a lesser time, hence whether we have travelled in the "future" or "past" or "present" depends on the following ratios –

If (AB'/T1)/(AB/Tn) > 1 => we are travelling in the future

If (AB'/T1)/(AB/Tn) = 1 => we are travelling in the present

If (AB'/T1)/(AB/Tn) < 1 => we are travelling in the past

Case h) Let space expand and the time taken to travel through expanded space be equal to T1 > Tn (or time has expanded in addition to space expansion)

Here AB shifts to AB' where AB' is greater than AB. Also as time taken to travel AB' is T1 > Tn, it implies that we have travelled a greater distance in a greater time, hence whether we have travelled in the "future" or "past" or "present" depends on the following ratios –

If (AB'/T1)/(AB/Tn) > 1 => we are travelling in the future

If (AB'/T1)/(AB/Tn) = 1 => we are travelling in the present

If (AB'/T1)/(AB/Tn) < 1 => we are travelling in the past

APPLICATIONS

a) Here we shall try to explain space/time travel in lieu of above space/time expansion/contraction and 'n' dimensional space.

Let us say e.g. we have the Earth (E) and Moon (M) at a fixed distance between them and let us say normally it takes time Tn to travel from E to M. If M in 'n' dimensional space expands to a point M' where the distance between M and M' is large, then we can traverse a large distance in space in the same time it takes to travel to the Moon (M).

Also let us say if there is a very distant object D and the space between Earth (E) and D contracts to D' where D' is close to the Moon (M). Now it becomes possible to get close to the object D' which is close to the Moon in about the same time it takes to travel to the Moon from Earth (but a word of caution here, though we may reach the object D or D' in the limits only i.e. we may reach only in its orbit or D's atmosphere or somewhere close by to D but never on D as the amount of time taken to traverse from M to D' might be infinite or very large).

Hence it might be possible to traverse large expanses of space in a very short time, possibly even from one end of the Universe to the other.

b) Also as we have demonstrated that to travel very small distances might take a very large or infinite time – this might be used to explain the theory of "Black Holes" where beyond a particular horizon light travels at a very "slow" pace

The Bermuda Triangle (a geographic region between the US east coast and the West Indies) might be a suitable "Test Bed" for checking our above hypotheses on space/time expansion/contraction and 'n' dimensional space as I firmly "believe" and "think" experiments in this region using suitable drones might verify/validate our above hypothesis

(N.B. The Bermuda Triangle is a region where vessels/ships and aircraft have known to have disappeared without trace and it is widely believed that this region does not obey the "normal" laws of physics/mathematics)

Researcher believes that the microcosm is a mirror image of the macrocosm. Hence what holds true in the macrocosm also holds true in the microcosm and the reverse is also true. Hence I believe that the above hypothesis if proved in either the macrocosm or microcosm would be reversible in nature in both the macro and micro cosmos.

Also the hypotheses regarding the discovering of the higher dimensions 4 th, 5 th, … n th dimension in 3 dimensional space and the associated space/time anomalies might lead to the discovery of newer chemicals, materials, pharmaceutical drugs, newer matter and better understanding of their properties; again leading to newer pharmaceutical drugs, chemicals and newer materials.

Also the hypotheses regarding the discovering of the higher dimensions 4 th, 5 th, … n th dimension in 3 dimensional space and space/time anomalies might lead to a better understanding of living organisms/cells and its properties.

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