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The Division of the Time into Several Dimensions

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Abstract

The present study focuses on the time and proposes to divise it into a range of dimensions. Indeed according to the principle of the Relativity [1] the time is described as a dimension, to be added to the three dimensions of space. This article proposes to consider the time in a more complex way and to separate it into several dimensions. All these dimensions do not necessarily express themselves simultaneously. In fact this would depend on the complexity of the system studied and of the dynamism of the object studied. It is conjectured that there would be at least one additional time dimension which would be related to the acceleration and the forces, then that there could be at least ten time dimensions. And in fact there could theoretically be an infinity, as long as we can continue to derive the distance by the time. This article proposes the development and some illustrations of this idea in order to try to better understand the complex physical dimension that is the time. Finally a model of the atom is proposed.

Keywords

Time; Acceleration; Multi temporal dimensions; Relativity; Primordial Matrix; Atom; String theory

1. Introduction

The definition of the time is an important subject in fundamental physics. This topic has been studied a few many times. In the first place by Isaac Newton [2] who defined it as absolute and indifferent to movement as part of an immutable container. This definition has since been revised and refined by many researchers starting with Albert Einstein [1]. Several theories have been proposed such as String theory [3], M theory [4] or space-time symmetries [5].

The present study proposes a new point of view: to spread the time into several dimensions. So what we call time would not just be one but a whole range of dimensions, which makes time more complex than the way we usually define it.

This study begins with an analysis of the acceleration and its unity, then develops the principle of the declination of time dimensions. Indeed we will define a model of the atom based on this principle and according to the model The primordial Matrix [6].

1.1 Problematic

According to the principle of the Relativity the time is considered as a dimension [1]. Is there only one time dimension or a whole range?

1.2 Hypothesis

Let's start by studying the acceleration. The acceleration is defined as the ratio between the change of speed of a mobile and the time required to make that change. And the speed corresponds to the ratio of the distance traveled to

the elapsed time. In other words the acceleration literally corresponds to a quantity of distance that depends on a quantity of time that itself depends on a quantity of time. Moreover the acceleration is expressed in m/s^2. This physical value involves squared seconds. This could translate an action along a second time axis.

1.3 Expression of dimensions

If the square of a distance is equivalent to raising a dimension of space, shouldn't it be the same for the time?
- m: 1 space dimension = distance
- m2: 2 space dimensions = area
- m3: 3 space dimensions = volume
- s: 1 time dimension
- s2: 2 temporal dimensions = time surface?

2. Development

The speed of an object is its rectilinear and uniform motion, that is a movement along a spatial axis and a temporal axis which fulfils the conditions of the inertia. The inertia (rectilinear and uniform movement of an object) is in space dimension 1 and time dimension 1.

What breaks the inertia conditions:
- A bend, that is an evolution of the movement according to a 2nd spatial axis.
- An acceleration, that is an evolution of the movement, considered here according to a 2nd time axis.

The acceleration of an object corresponds to its rectilinear but non uniform movement along a spatial axis and it is assumed here according to two temporal axes: the conditions of inertia are not fulfilled. Please, see Figures 1 and 2.

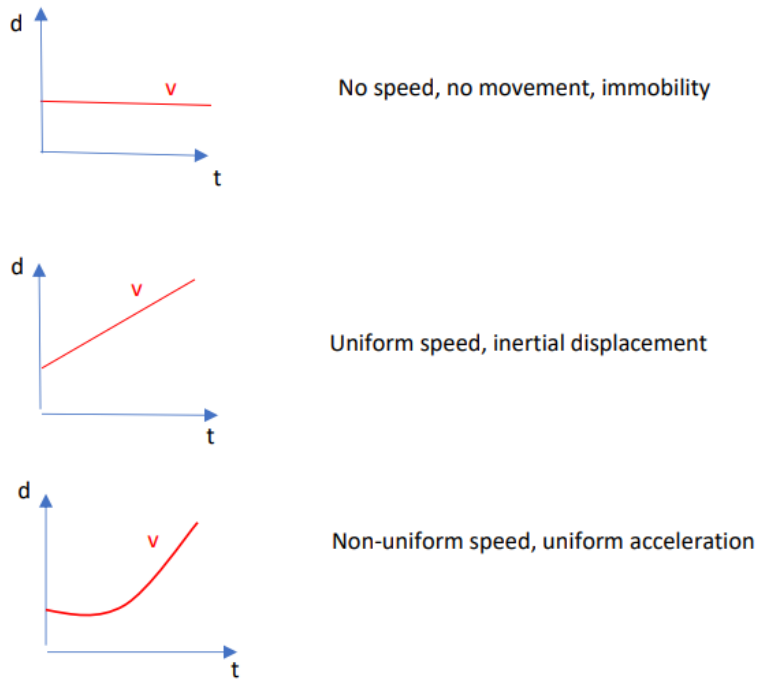

Figure 1. Expression of zero speed, uniform speed and acceleration.

The conjecture here is that the acceleration could be related to a second time dimension, a fifth dimension in total if we take into account the three dimensions of space. Thus, the time could be composed of several dimensions. A more complex time wich would give new dimensions. This partitioning of time could be linked to the principle of Relativity described by Albert Einstein [1].

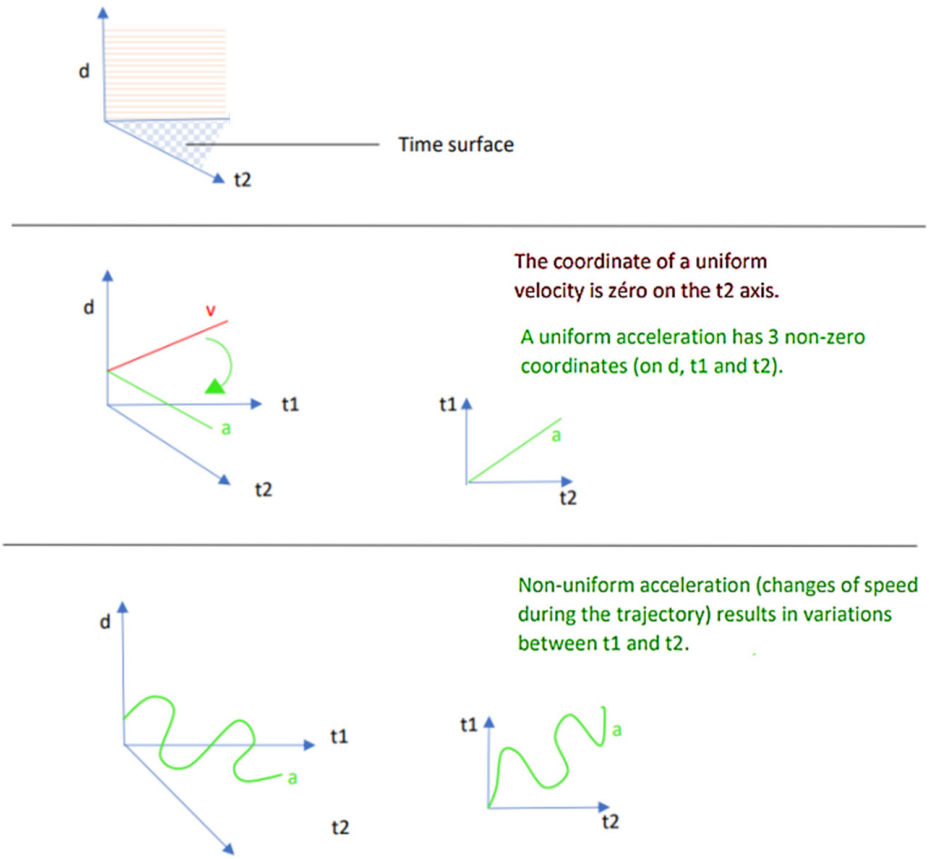

Figure 2. Illustration of the time surface principle.

Now we know that we can derive the distance by the time at least ten times: speed, acceleration, jerk, snap, crackle, pop, lock, drop, shot, put. At least as many time dimensions are considered. Time dimensions are considered here as distortions of space-time, distortions of The primordial Matrix [6].

The higher the degree of dimension, the more complex the deformation. The higher the energy level required, the greater the matrix torsion. The proposed hypothesis is that the rise in dimensions is related to the complexity of the windings of the matrix around the matter, creating more and more complex dynamic objects.

Another hypothesis: the 3 space dimensions could be related to the cold antimatter matrix at rest and the time dimensions could reflect the most dynamic movements and critical states of it. Thus the time dimensions would be related to matter and energy and the space dimensions to antimatter and base matrix.

3. Illustration

How to imagine an object in 4 dimensions, or 5? What could it look like? If we consider the time as the 4th dimension then we must take into consideration what we know about time. How do we perceive it?

In general, we perceive the action of time when something has happened, when the object studied has undergone some transformation which can also be a movement. Consider a given time interval a 4-dimensional object would be a priori all the states in which this object can be found within that given time interval.

Now let's think about the additional time dimensions. One could assume that the 4th dimension (= time dimension of degree 1) refers to simple transformations and movements which require only uniform velocities. The 5th

dimension (= time dimension of degree 2) would then include accelerations, the 6th dimension (= time dimension of degree 3) would take into account jerk, etc.

4. Example of the Atom

What is a dynamic object in (n) temporal dimensions? This is based on the principle of The primordial Matrix [6]. At rest the matrix has only 3 dimensions of space. A deformation of the matrix leads to an additional dimension of time.

Then an object with (n) temporal dimensions would correspond to (n) quantum windings of the primordial matrix, windings more and more complex while the number of temporal dimensions increases. You will find below a model of an atom following this principle.

4.1 Nucleons and nuclear forces

In the model The primordial Matrix [6] the configuration proposed to describe the pre-Big Bang Universe includes supertorsions, a compaction of the positron matrix.

According to the General Relativity [1] the deformation of the space-time is a deformation along a time dimension. However, the paper presented here postulates that - compared to its state of rest in 3 spatial dimensions - any deformation of the matrix involves additional dimensions which are dimensions of time. The more complex the deformation of the matrix, the higher the number of temporal dimensions.

Indeed the pre-Big Bang state according to the model The primordial Matrix corresponds in theory to some compactions of the Universe, the torsions of the positron matrix corresponding to dark matter, and would involve a high number of temporal dimensions. One can think of the Calabi-Yau spaces [7] and the superstring theory [8].

Here we are talking about the antimatter matrix. What about an increase in density at the level of matter? A quite different principle could logically apply to the nucleus of atoms. One can think of the Kaluza Klein theory with 5 dimensions [9]. Here the time dimension should be on degree 2, corresponding to the acceleration and the nuclear forces.

It is conjectured that any elementary particle of matter, such as a quark, must be surrounded by a surface, an antimatter membrane. So when matter densifies from the point of view of matter, the particles come closer together and bind by nuclear forces. From the point of view of antimatter, some bubbles form in the matrix and come closer together while antimatter membranes separate these bubbles.

Therefore the nucleus of atoms can be correlated to a super torsion of the primordial matrix (= antimatter) around glued bubbles (= particles of matter). Nucleons (= protons and neutrons) would be a complexification between several torsions. Each torsion corresponding to the membrane around a quark. These supertorsions would correspond to the strong interaction force that holds quarks inside nucleons.

Going further we envisage hyper-windings between nucleons that maintain the cohesion of the atomic nucleus and correspond to the weak nuclear interaction.

4.2 Electron cloud of atoms and chemical reactions

The electronic cloud may not be made up of electrons that are permanently electrons. With the model The primordial Matrix [6] it would be more logical to deal with spin inversions and passages between electron and positron, even photons.

Moreover the quantum squares describing the orbitals of the electrons in chemistry have 1 or 2 electrons. If they are 2, their spin are opposite. For a given particle of matter its associated antimatter particle has an opposite spin. This suggests that a complete quantum square would contain 1 electron and 1 positron, potentially a photon, an electromagnetic wave.

We can then imagine electromagnetic currents around the nucleus. The heavier and more complex the atom, the wider the current around it. The closer one is to the atom, the more the current must be dynamic and linked to the nucleus. One can imagine a critical state of the primordial matrix: a fusion or pseudo-fusion (soft material), which involves ruptures of the basic structure of the matrix, generating somes holes and therefore electromagnetic waves. The further away from the nucleus, the lower the current should be, with less dynamic and more volatile deformations, less bound to the nucleus, a cooler, more stable matrix.

The outer electronic layers that react in chemistry would be the electrons away from the nucleus, alone in their quantum square. The binding doublets could form a photon, more stable in the ambient antimatter medium.

5. Conclusion

To sum up this study the fact that there is a physical quantity: the acceleration involving squared seconds or a squared unit of time, suggests a complexification of the time. This one that we usually perceive as a single dimension could be more complex. Indeed it is theoretically conjectured here that the time could be decomposable into several dimensions. In each case we mathematically derive distance by time it would add an additional temporal dimension to the system.

Moreover, this model associated to the principle of The Primordial Matrix [6] permit to define a new atomic model.

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