Space-time, Dark matter and Dark energy

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ABSTRACT

According to the theory of classical physics, objects exert force on each other, but this theory never says anything about what this force is, why do two objects attract each other? According to the theory of relativity, gravity is not basically defined as a force, but it is the result of the curvature of space-time. This theory, which is used for large-scale objects, seems to be deficient for medium-scale and micro-scale objects.

In this article, we discuss a new definition of space-time and gravity, and by combining two theories of relativity and classical physics, we arrive at new formulas, and from there, by analyzing these formulas and also mathematical analysis, we will present a new definition of space-time and gravity, and even dark matter and dark energy.

   This research leads to a new theory and since it is associated with the analysis of the relevant formulas, it will be called analytical theory.

This theory should be able to solve many astronomical topics such as; justify gravity, black holes, dark matter, dark energy, lens effect, the reason for the accelerated movement of objects in gravitational fields, etc. And we will deal with these issues as much as possible in this article and we will complete it in future articles.
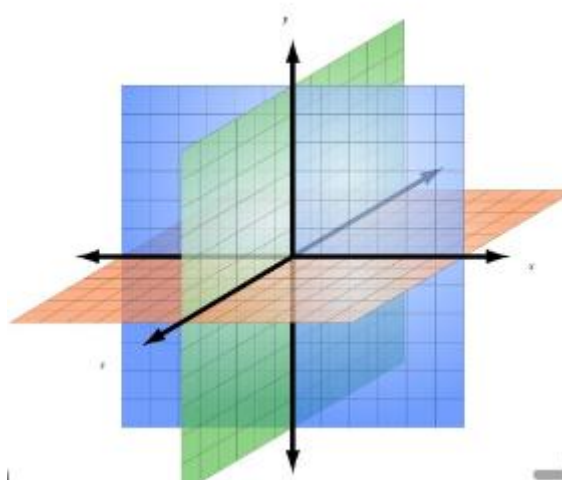
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INTRODUCTION

Every mathematical expression has a physical equation in nature and every physical phenomenon in nature has a mathematical equivalent. With this thinking, physical phenomena can be physically analyzed, conceptualized, and then come to the appropriate theory. Finally, in order to ensure the accuracy of the research path and the findings, mathematical analysis is used. Although, in recording the results of the research, first the mathematical analysis is done, then the physical analysis and finally the theory is recorded.

MAIN TEXT:

Consider the three-dimensional coordinate axes, the positive directions according to the counterclockwise convention of the three fingers of the left hand will be x, y, z, respectively, and their opposite direction will be -x, -y, -z-. Note that the positive and negative directions of the axes are conventional.

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The axis of numbers in which positive real numbers, continue from zero to the right to infinity. according to the convention, and negative numbers continue from zero to the left to negative infinity.

Number axis in points such as one third and one sixth and many other points such as Numbers with infinite decimals and repeating decimals, etc., do not show a specific position on the number axis [1]. At these points, the axis of numbers is interrupted and they approach a limit number from both sides, so the axis of numbers is not a continuous line.

The dimensions of the space on the coordinates axes are also interrupted at these points, and on the x, y, z axes they form the units that form the cells that make up the texture of the space, and this means that the space is quantum and its texture consists of Units and cells are formed.

With a 180degrees rotation and against the direction of positive real numbers, we will have negative real numbers (-1, -2 and ...).

Imagine that the negative semi-axis of numbers is a ruler and a measuring scale. If we have a ruler of unit length and pull it on the negative semi-axis, its length will go from -1 to -2, and then it will be observed Elongation decreases from -1 to -2 due to stretching.

Our baryonic universe is flowing on a bed of space-time.

Now let's analysis the dimensions of space-time:

The baryonic world has three positive dimensions of space, which correspond one to one, to the positive part of the coordinate axis (x, y, z). And it forms the skeleton of the contents of the baryonic universe.

In the mathematical analysis, it was observed that the axis of numbers continues from zero to positive infinity and from the other side to negative infinity. In the Cartesian coordinate axes, the three axes x, y, z, continue towards the positive infinity and from another direction from the Coordinate origin of the mentioned three axes to the negative infinity.

It is also seen in the dimensions of space that the three dimensions x, y, z, form the three dimensions of space, and with the dimension of time we reach the four dimensions of space-time. Note that for ease of understanding and related mathematical calculations, we consider the directions to be conventionally positive directions of three dimensions of space-time. For example, we may use the left hand rotation rule to determine the positive directions of x, y, z dimensions. Be careful that these directions are conventional and in practice these dimensions can be expanded in any direction.

Now this question arises, so what will happen to the negative direction of the triple axes of the space dimensions?

This is while in the current science of physics for the baryonic world, only 3 dimensions of space are imagined, which form the skeleton of the baryonic world. With the similarity that can be observed between the characteristics of the negative part of the Cartesian coordinate axes or the number axis and the dimensions of space, we can reach interesting results, and that is that *space corresponds to the negative dimension of the coordinate axis*, that is, it reveals other dimensions of the universe and those dimensions The negative is space.

It seems that the space is composed of three negative dimensions, which itself is the origin of the positive three dimensions of the baryonic world, and in addition, it is like an eschel and the scale of the formation of the positive three dimensions (baryonic world), in other words, the positive dimensions of space-time. Without the negative dimensions of space, which will be called the second three dimensions of space-time from now on, it cannot be formed because the world loses its presence.

Secondly, these are the second three dimensions of the universe that determine the *dimensions* and *size of the objects* and even the particles that make up the first three dimensions.

In the mathematical analysis, we also saw that if, for example, If we pull the rubber band on the negative coordinate axes, its length decreases from -1 to, for example, negative 2. This also happens in reality.

If you pull the dimensions of space (the second three dimensions) in the first three dimensions, we will have the contraction of the length (in the same direction) and of course due to the interweaving of space and time, with the expansion of the length of the space (the second three dimensions of the space), the expansion of time will also occur.

In a separate article, we will discuss the mathematical analysis of *time dilation*.
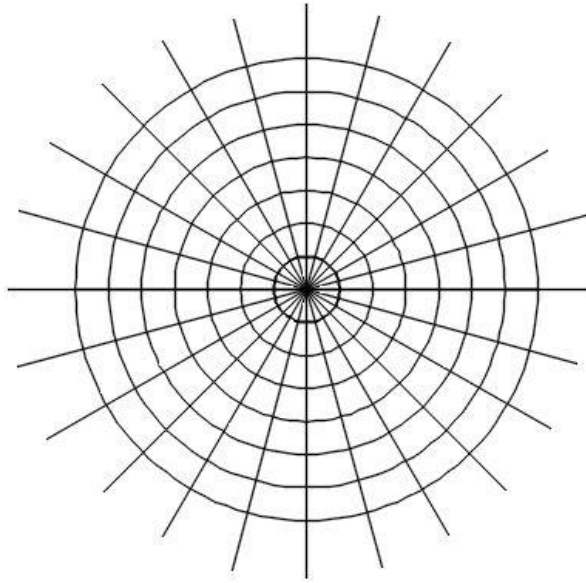
gravity:

According to the theory of classical physics, gravity is the force that two masses exert on each other, but this theory never says anything about what this force is. (Why do two masses attract each other?).

According to the theory of relativity, gravity is not fundamentally defined as a force, but rather a result of the curvature of space-time. This theory, which is used for large-scale objects, seems to be deficient for medium-scale and micro-scale objects. If the first three dimensions of space constitute the ossification of the contents of the baryonic universe, we should be able to have a theory combining classical and relativity physics.

It seems that the presence of energy and matter causes a change in the shape and dimensions of space so that energy and matter tend to be pushed towards a point that we call the singularity point and they are compressed towards it. This singularity, which is conceivable for any collection of energy or matter, is the point where space tries to compress matter and energy into it. Space exerts a force on mass or energy to concentrate it at a singularity point, so, this force is expected to be calculable.

The presence of mass (or energy equivalent to mass) causes a change in the Texture of space-time and stores potential energy in it, which eventually enters any mass in the gravitational field and pushes it towards the singularity point.

The mass-equivalent energy that changes the texture of space is equal to $E=m_1 C^2$

And the stored potential energy in the deformed tissue (according to the classical theory) will be equal to: $E=m.g.x$ where x is the radius of the gravity field (distance from the singularity point) in the second three dimensions of the space where the mass *m* is present in its bed.

$$E=m\left(G\frac{m}{x^2}\right)x$$

From equality, we will have two recent relations:

$$m_1 C^2 = m\left(G\frac{m}{x^2}\right)x \implies X C^2 = \left(\frac{m^2}{m1}\right)G \qquad , \qquad M=\frac{m^2}{m_1}$$

(M is the equivalent mass of the system)

$$\alpha=\left(\frac{c^2}{G}\right) \qquad \alpha \text{ is constant value and G is the global constant of gravity}$$

As a result, we will have: $\qquad g\, x = c^2 \qquad$ and $\qquad M=\alpha\, x$

Analysis of the above formulas:

1- The formula $m = \alpha\, x$ clearly speaks of the equivalence of M and x, in other words, M and x are of the same type, and since energy and mass are equivalent, it can be concluded that the dimension and energy are also the same. The dimensions of space are also of energy and the result of energy.

2- The dimensions of the texture of space are symmetrical in the natural state and will be in the form of a spherical shell, which is also quantized according to the aforementioned cases, and stretching in one direction causes the force and acceleration of the mass in the same direction and towards the singularity point.

The flow of energy or its equivalent mass is on the surface of the tissue sphere. And inside the spherical shell is dimensionless. The absence of dimension inside the spherical shell means that if the mass and energy have a dimension smaller than the value of the minimum dimension of space (space quantum), the movement in it will be instantaneous.

But since the dimensions of matter and energy packages are defined by the quantum dimensions of space, the dimensions of matter cannot be smaller than the quantum dimensions of space, and probably at least the dimension of space is equal to the Planck length.

If the quantum of the spherical shell of space is stretched in one direction, for example, by the size of dx, the mass and energy in that direction can have an instantaneous displacement by the size of *dx*.

3-The value of g is the closer to the center of the singularity point, which means that the dimension of space near the singularity point has more elongation, and the further away from it, the amount of space elongation will be less, this causes the body that is under the singularity force to move towards the singularity point. move and because the amount of lateral elongation increases as we move towards the singularity point, the instantaneous displacement towards the singularity point also increases and causes the mass to accelerate, and the movement of the mass towards the singularity point will be an accelerated movement.

4-The Formula M=α x indicates that the presence of *M* will cause the stretching of the space dimension, and conversely, the stretching of the space dimension will cause the mass of *M*. Therefore, if for any reason the stretching of the dimension of space happens, this will cause the creation of mass in the dimension of the space under stretching.

This means that the space itself has a hidden mass, which is probably the same dark matter, that is, the presence of large objects such as planets and stars and, accordingly, galaxies causes the stretching of the dimensions of the space, which is also of energy, and in the range of Radius affected by the gravitational force. a mass appears that forms the same dark matter and it seems that dark energy is the same energy that forms space.

Each particle (mass) and energy has its own singularity point, and the objects next to each other will have a resultant singularity point, so that all the objects are pushed towards that singularity point or may go around it.

Depending on the mass of the objects, the singularity point may be somewhere inside one of the objects, such as the solar system, which is inside the sun and close to the center of the sun due to the huge mass of the sun compared to the planets that revolve around it.
Or it may be somewhere outside of the objects, planets and stars, in which case the planets and stars revolve around that singularity.

If the mass of the planets and stars that revolve around the singularity point is very, very large, and it may cause a very, very large stretching of the dimensions of space, then that singularity point will have the third type of stretching (stretching in three dimensions), which is called the swollen phenomenon, all three dimensions of the object are contracted in the first three dimensions and the object falls into the three-dimensional bubble of the space dimension and creates the black hole phenomenon. In the swollen phenomenon, *X* in the related formula that was mentioned earlier is to the power of 3, and the gravity in it increases tremendously and turns into a black hole.

In the swollen phenomenon, which is the expansion of the dimensions of the space, in three dimensions, we will have the stretching of the space dimension of the *second type* (stretching in two dimensions). In other words, the space tissue pulls other cells that are woven into it on its surface and causes the second type of stretching (surface stretching). Outside the cell bubble, we will see cells stretched in two

dimensions. The *second type* of drag (*superficial*) will cause objects to move around and around the entangled cell at a very high speed due to its high stretch (for example, in black holes).

First: It will cause the movement of the objects upon entering the accumulative cell and around it. In this situation, it is expected to even cause the cell or black hole to rotate around itself.

Secondly, the body that approaches the black hole, not because of the very strong gravity of the black hole, but because of the two-dimensional stretching of the texture of the space around the black hole   They undergo length contraction in two dimensions (the same term as becoming spaghetti).

The rotation of the stars and planets of the galaxies often have such conditions, and their singularity turns into giant holes, and often the center of the rotation of the galaxies has such condition.

Stretching of the texture of space (second three dimensions of space) while causing the expansion of space, also causes the contraction of length and expansion of time.

Gravity is the result of applying the potential force (the result of the effect of mass (the first three dimensions) on space) on objects that tries to concentrate them in a singularity point, which is due to the stretching of the texture of space due to the presence of energy in the 6 dimensions of space and confusion. It is intertwined with our time dimension.

The singularity point for objects, if it is the result of very massive objects, it may lead to the creation of a black hole in the heart of celestial objects or in a point outside them, which is generally the center of rotation of stars and galaxies around it due to the great force of its singularity. . Sometimes the orbit of planets or stars may be an ellipse, in which case the two foci of the ellipse are singular points and are the source of gravity.

REFERENCES:

1-Book of mixed numbers by Dr. Walter Lederman