

Emergence of life from highly excited strings beyond Darwin's theory

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Abstract: We propose a new version of Darwin's theory that connects evolutions of biological system to evolutions of cosmological systems. In this theory, the origin of both systems are closed strings which could shrink to stable zero-dimensional manifolds topologically. Then, these strings join to each other and form highly excited string balls which could shrink to non-stable zero-dimensional manifold. This system decays into open strings which each of them couple to a one-dimensional manifold and by joining all manifolds, an N-dimensional manifold is emerged. Then, this manifold decays to a 4-dimensional universe and a N-4-dimensional manifold which wind around this universe. Next, some closed strings decay into two groups of open strings which one group produces hexagonal and pentagonal manifolds in universe and another creates the same manifolds with opposite quantum charges in extra dimensions. Summing over charges of two groups of open strings should be equal to the charge of closed strings. By joining these manifolds, two types of biological objects are emerged which one is known as DNA in our universe and another is called dark DNA (anti-DNA) in extra dimensions. Quantum charges of atoms, bases and elements of dark DNAs in extra dimensions have opposite signs respect to quantum charges of atoms, bases and elements of DNAs in universe. On the other hand, some other closed strings decay into two groups of open strings and these strings produce two types of DNAs with opposite quantum charges which one type create the life on the planets and another produces a black stringy DNA with high temperature interior the core of planet. Thus, life on the earth can be controlled by the evolutions of strings in extra dimensions and strings interior of the earth's core.

Keywords: Darwin; DNA; Universe; Extra dimensions; String

I.Introduction

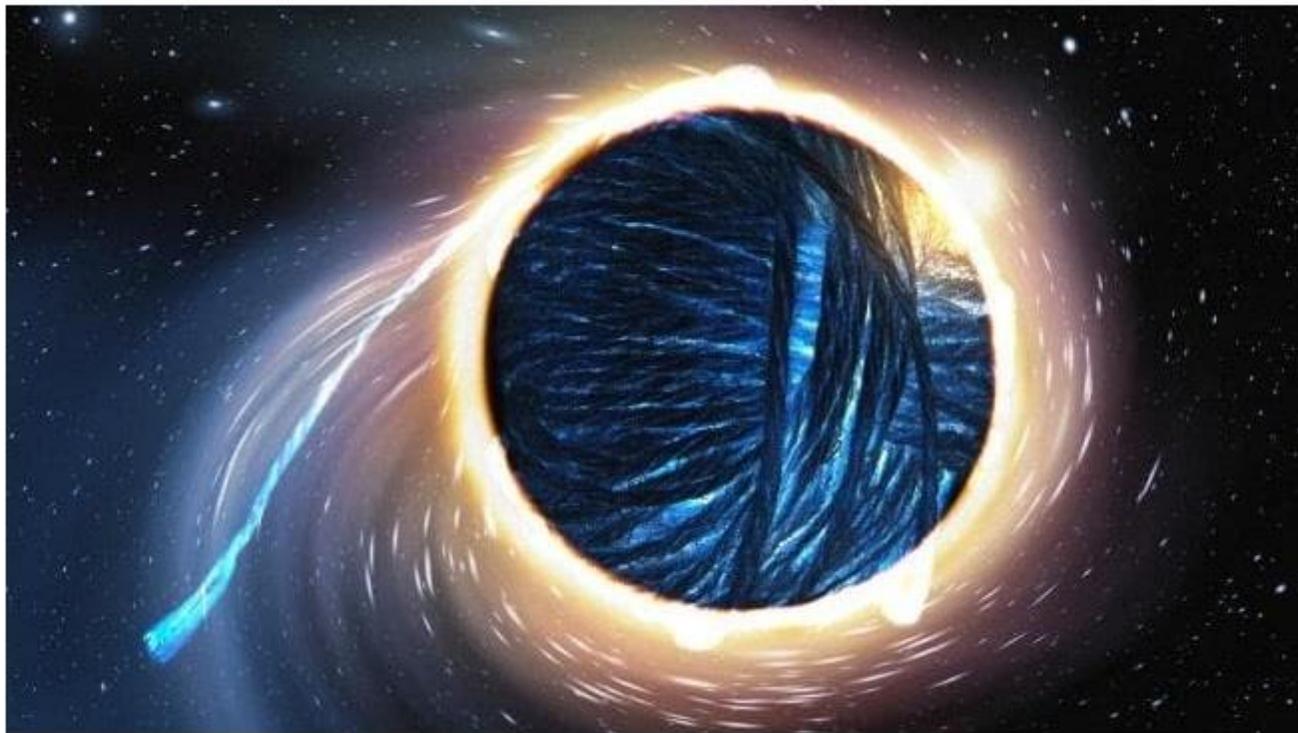
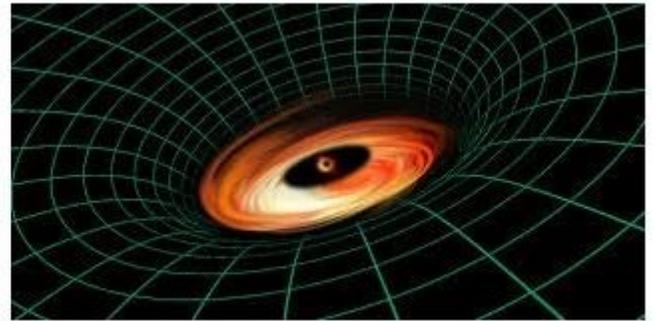
Around 200 years ago, Charles Darwin proposed a model for biological evolutions which shows that all species of organisms are emerged from developing of single celled creatures or organisms that are able to compete, survive, and reproduce [1,2]. Although, this idea is known as a theory which describes the origin of life; however its relation with evolutions of universe is unclear. Some scientists have inspired from Darwin's theory and introduced a Darwinian evolutions of cosmos. In this model, our universe is one of many universes in much larger cosmos (the Multiverse) which is born during evolutions of a black hole. According to this idea, some black holes evolve and transit to some universes with parameters like parameters of our universe [3]. These black holes may be generated from evolving and transitions of some highly excited strings (string balls) [4,5]. In fact, by increasing energy of a string ball, it's number of states grows and reaches to number of states of a black hole. In these conditions, a curved space-time around this string ball is emerged and a black hole is produced [4-6]. The initial string balls may live on $4+n$ -dimensional manifold first and then evolve to 4-dimensional black holes. Next, these black holes become cooler and obtain some parameters of universes. Thus, there are some extra dimensions which may have some effects on 4-dimensional universe [7,8].

Now, the question arises that how we can connect evolutions of biological systems to the evolutions of universe? We response to this question by introducing a new version of Darwin's theory. In this theory, at the beginning time, there are a zero-dimensional string balls. This excited string decays to some open and closed strings. Each of open strings produce one dimension and collecting of them create a 4-dimensional universe and a $N-4$ -dimensional manifold. Closed strings decay into three groups of open strings. One group produces hexagonal and pentagonal bases of DNAs in 4-dimensional universe. Another group produces related bases of dark DNAs in extra dimensions. Third group produces an stringy black DNA interior of the earth's core. Quantum charges of DNAs in universe have opposite signs respect to quantum charges of dark DNAs in extra dimensions and DNAs interior the earth's core. Thus, the origin of both cosmos and life could be strings.

The outline of this paper as follows: In section II, we consider the process of formation of universe and extra dimensions. In section III, we study the process of

emergence of life from strings. In section IV, we consider the process of black stringy DNA interior of earth and calculate it's temperature.

II: New version of Darwinian cosmic model



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Fig1. Black holes and black strings

Before considering evolutions of cosmos in a new Darwinian model, first let us to introduce black holes and string balls. A black hole is a system which absorbs all matters even light and for this reason, couldn't be observed; however it's effects can be seen (See figure 1). If this black hole evaporates, loses it's energy and makes a transition into a string ball. String ball is an excited string which its temperature is near temperature of a black hole. Also, number of microstates of an string ball is closed to number of microstates of a black hole.

Now, we can consider the process of formation of universe in several stages.

1. At the beginning, there are only closed strings which could make a transition into an stable zero-dimensional manifold topologically (See figure 2).
2. Then, closed strings join to each other and build a highly excited strings with shape of a ball and called string ball. This string ball can also make a transition into an un-stable zero-dimensional manifold (See figure 2).
3. Next, string ball and closed strings on zer-dimensional manifold decay to open strings. Each of open strings produce a one-dimensional manifold (See figure 3).
4. After that, open strings join to each other and form an stable N-dimensional manifold (See figure 3).
5. This N-dimensional manifold decays to one 4-dimensional black hole and an N-4 dimensional manifold (See figure 4).
6. 4-dimensional black hole becomes cool and makes a transition to a universe. Also, dimensions of N-4-dimensional manifold plays the role of extra dimensions for it (See figure 4).

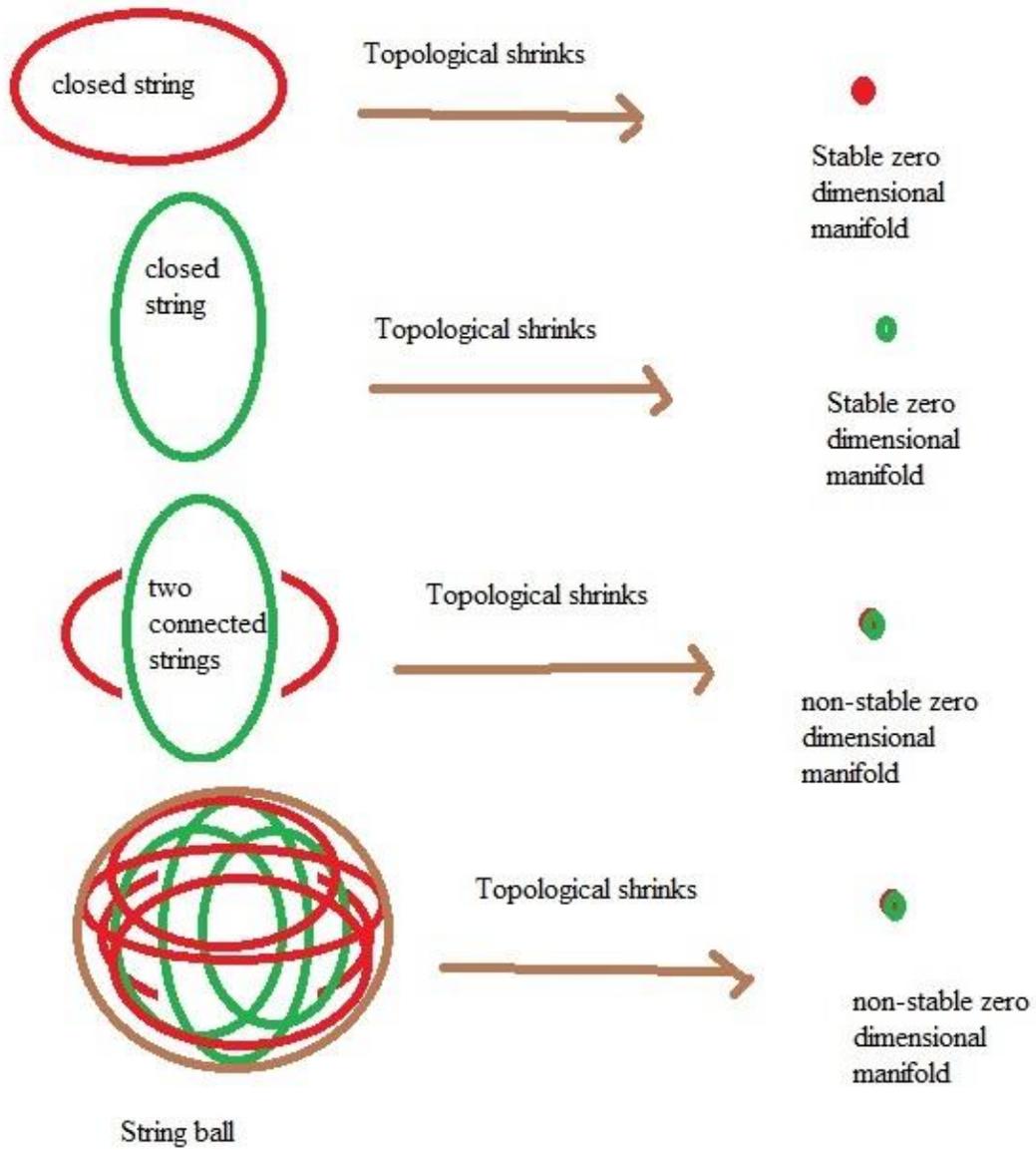


Fig.2. closed strings and string balls shrink to zero-dimensional manifold topologically

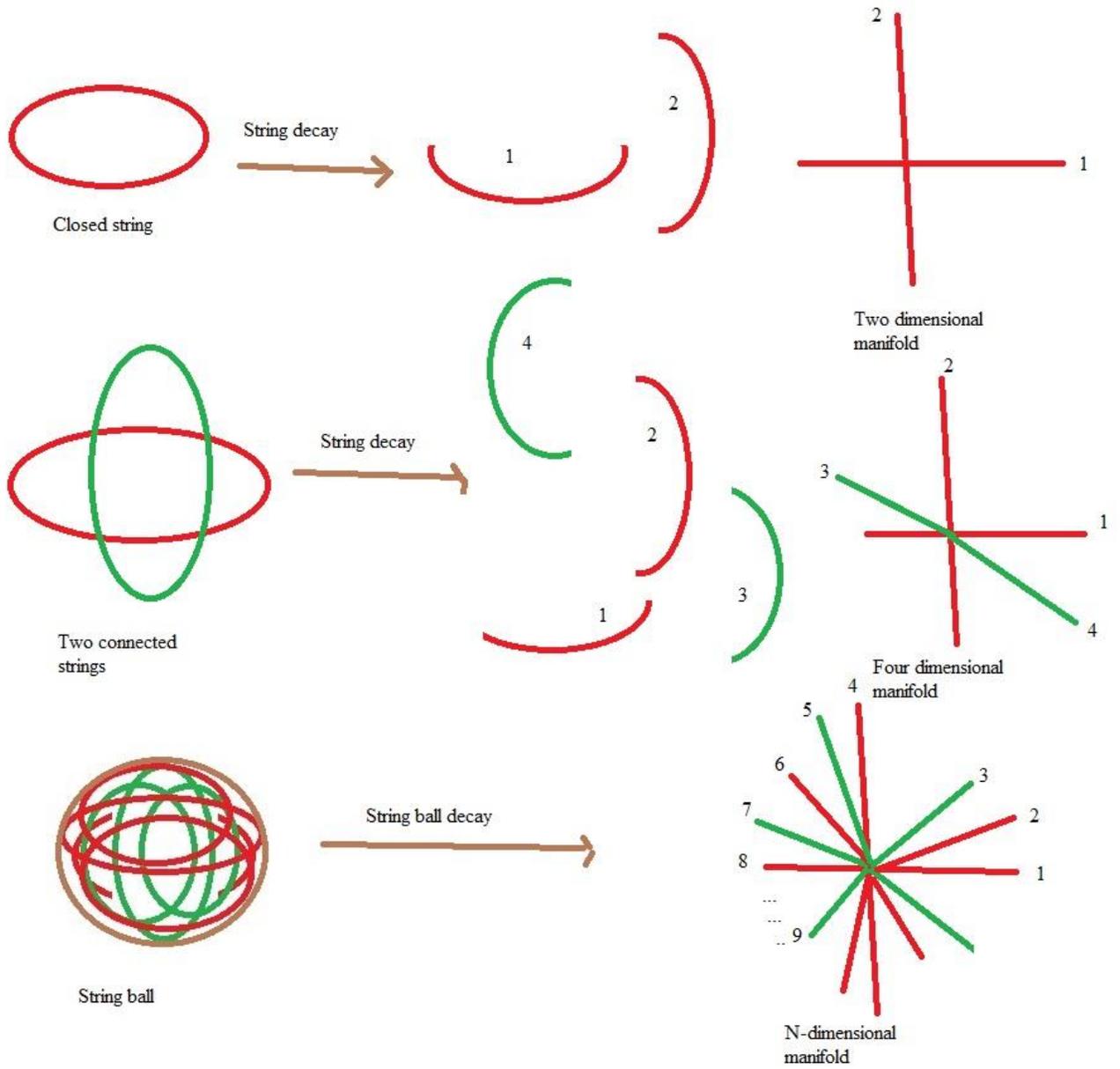


Fig3. Emergence of dimensions from decaying strings

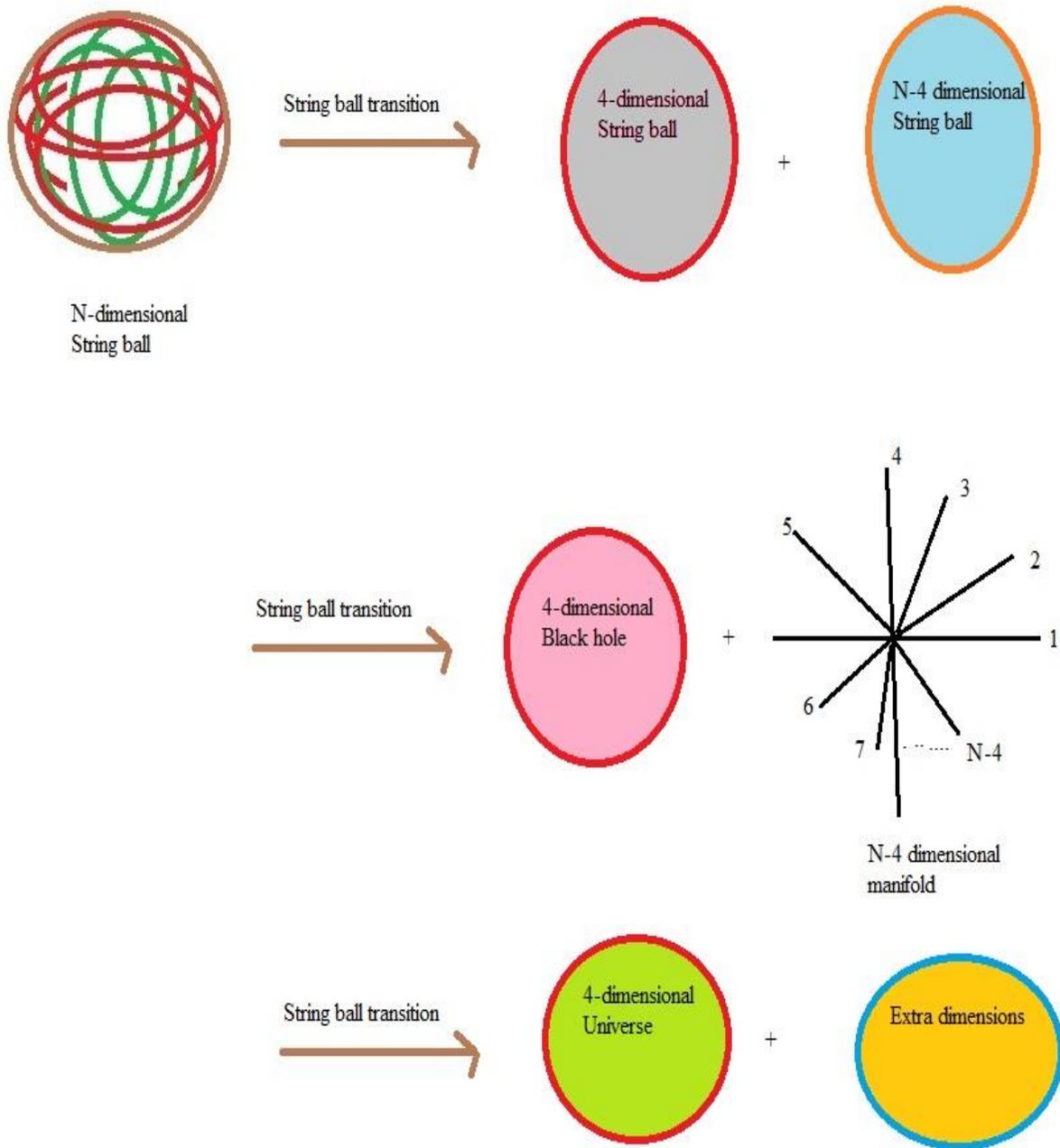


Fig.4. The process of formation of universe and extra dimensions

III. Emergence of life from strings in new version of Darwin's theory

In this section, we show that life is emerged from evolutions of strings and their transitions to hexagonal and pentagonal manifolds of DNAs. To show this, in figure 5, we assume that there is one hexagonal manifold in universe and one anti-hexagonal manifold with opposite quantum charges in extra dimensions. The hexagonal manifold is formed from atoms and electrons, while; anti-hexagonal manifold is built from anti-atoms and positrons. Anti-atoms have constructed from anti-protons with negative charges and positrons which move around them. These objects are known as anti-matter and couldn't be observed in our universe. However, there is a probability that these anti-matters live in extra dimensions. We take a vertex from each manifold which is constructed from joining one atoms or anti-atom with two open strings. We connect these systems to each other by connecting their strings from sides with opposite signs. We observe that their topology could change and make a transition to topology of closed strings. Thus, by connecting each vertex of one hexagonal manifold with a vertex of one anti-hexagonal manifold in extra dimensions, a closed string is emerged. This means that by connecting 6 vertexes of a hexagonal manifold with vertexes of an anti-hexagonal manifolds in extra dimensions, six closed strings are emerged. Also, that by connecting 5 vertexes of a pentagonal manifold with vertexes of one anti-pentagonal manifolds in extra dimensions, five closed strings are emerged (See figure 5). On the other hand, as figure 6 shows: a bases of a DNA have been constructed from hexagonal and pentagonal manifolds. Also, a base of a dark DNA in extra dimensions have been built from anti-hexagonal and anti-pentagonal manifolds. Thus, by connecting manifolds of bases of a DNA in 4-dimensional universe with manifolds of some dark DNAs in extra dimensions, some closed strings are emerged. This means that imaging of life in 4-dimensional universe on the life in extra dimensions, produces some closed strings which may evolve and make a transition to zero-dimensional points (See figure 6). This shows that life in 4-dimensional manifold is completely related to life in extra dimensions.

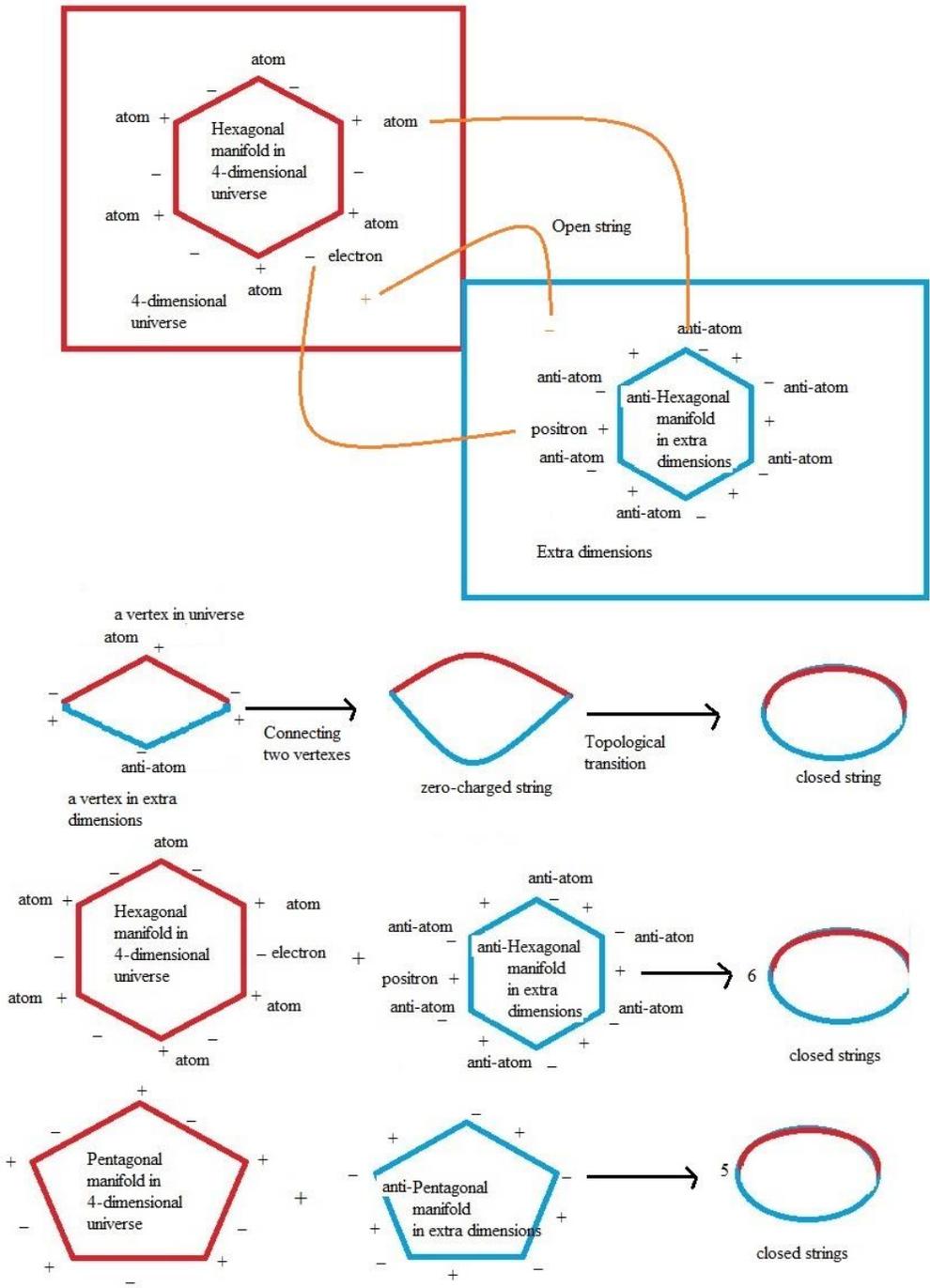


Fig 5. Emergence of closed strings by joining manifolds in universe and anti-manifolds in extra dimensions.

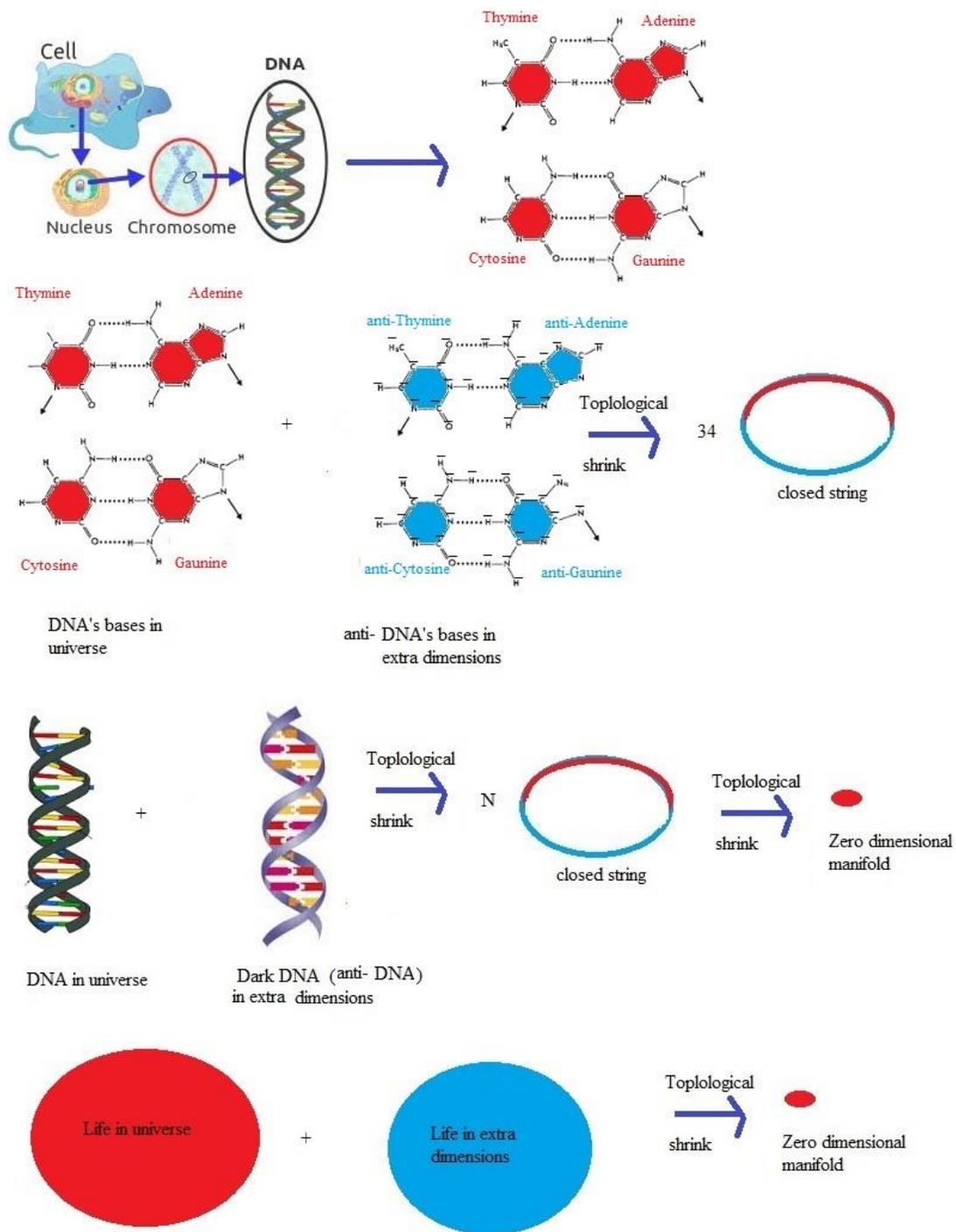


Fig 6. Connection between life in universe, life in extra dimensions and closed strings.

IV: Stringy anti-DNA interior of earth's core and other planets

Until now, we have found that imaging material of life in four dimensional universe on the material of life in extra dimensions, produce some closed strings. However, this isnt all story. As figure 7 shows: some closed strings may decay to two groups of open strings. A group produces DNAs on the earth and another group produces an anti-DNA-like structure interior of the earth's core. This anti-DNA is formed from joining anti-matters like anti-atoms, anti-protons and positrons. These anti-matters are covered by matters interior of core and their effects have been hidden. This stringy anti-DNA is a long object which is compacted interior of the earth's core. This compactification leads to the emergence of a horizon like the horizon of black holes. For this reason, this structure called black stringy anti-DNA. Maybe this question arises that what is the relation between this stringy anti-DNA and high temperature of core? To response this question, following results of [4-6] for string balls, we use of below equation for a highly excited stringy anti-DNA:

$$T_{\text{black stringy anti-DNA}} = \frac{[g_{\text{coupling}}^{-2} (g_{\text{coupling}}^2 M_{\text{black stringy anti-DNA}})^{(N-2)/(N-3)-1}]}{[M_{\text{DNA}}]^{(N-2)/(N-3)-1}}$$

With

$$g_{\text{coupling}} = \sqrt{2\pi (l_{\text{black stringy anti-DNA}} / l_{\text{DNA}})}$$

And

$$M_{\text{black stringy anti-DNA}} = F(g_{\text{coupling}}, M_{\text{DNA}}, l_{\text{black stringy anti-DNA}}, l_{\text{DNA}})$$

Where $T_{\text{black stringy anti-DNA}}$ is temperature of black stringy anti-DNA interior of core, g_{coupling} is the coupling parameter in similarity with coupling of strings, $l_{\text{black stringy anti-DNA}}$ is the length of black stringy DNA, l_{DNA} is the length of a DNA, $M_{\text{black stringy anti-DNA}}$ is mass of black stringy DNA, F is a function of coupling parameter, DNA's mass, length of black stringy anti-DNA and M_{DNA} is mass of DNA. In figure 8, we draw temperature of stringy anti-DNA interior of core in terms of it's size. It is clear that for $N=11$, by growing length of black stringy anti-DNA, temperature grows and tends to 6200 K for a size around 10^9 times of radius of core.

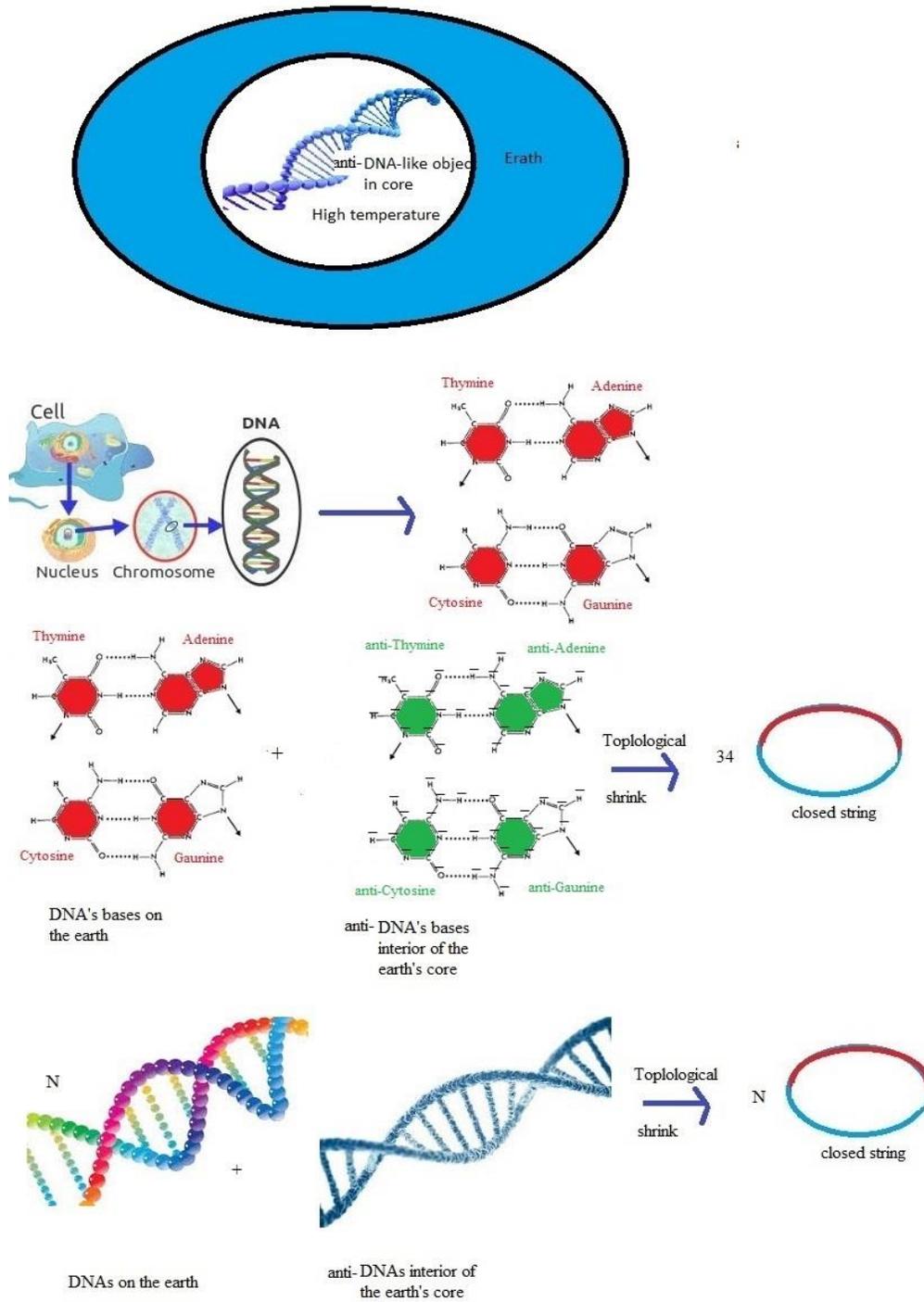


Fig7. Connection between life on the earth, black DNA interior of earth's core and closed strings

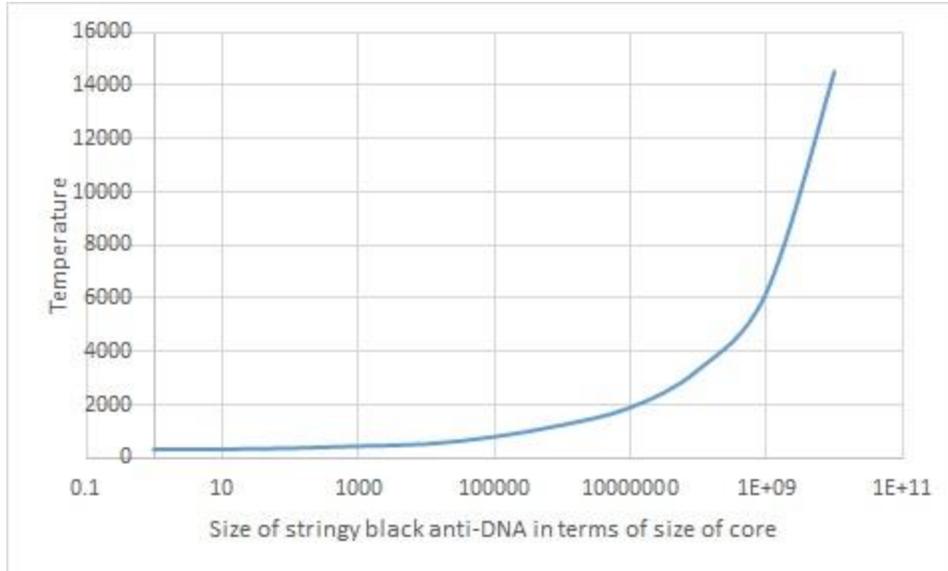


Fig 8. Dependency of temperature of the earth core on the size of string DNA interior of earth

Conclusions:

In this research, we have introduced a new version of Darwin's theory which describes all evolutions of universe from initial string balls to emergence of life. In this theory, at the beginning, we have some closed strings which live on zero-dimensional manifolds. These strings join to each other and build an string ball on a zero-dimensional manifold. This string ball is un-stable and decays into open strings which each string produces a new dimension. Consequently, by joining all open strings and their related dimensions, an N-dimensional manifold is emerged. This manifold is un-stable and decays into a 4-dimensional black hole and a N-4 dimensional manifold. Black hole is cooled and makes a transition into our universe. Some closed strings decay into open strings. These strings divide into two groups which one group creates hexagonal and pentagonal manifolds of DNAs in 4-dimensional universe and another group produces related anti-manifolds of dark DNAs in extra dimensions. Quantum charges of dark DNAs have opposite signs respect to quantum charges of DNAs in universe. Summing over charges of DNAs and dark DNAs should be zero in agreement with zero charge of closed strings. In addition, closed strings could decay into two groups of open strings, which one group produces DNAs on the earth and another group creates a black stringy anti-DNA interior of the core of planets like the earth. Quantum charge of this black

stringy anti-DNA have opposite signs respect to charges of DNAs on the earth. Thus, the origin of life could be closed strings. Also, parameters of life on the earth depends on the parameters of dark DNAs in extra dimensions and black stringy anti-DNA interior of the earth's core.

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