

The law of accelerating universe
The 'Nano Bang'. The 'DNA' of the universe.
God created a 'living, growing' universe

'Breakdown' of the law of conservation of mass-energy.

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Abstract

Mass energy is created or destroyed according to 'the law of accelerating universe'.

The universe didn't start as infinitely dense and infinitely hot space time and mass energy as stated in the Big Bang model. It started as a 'Nano Bang' ('Micro Bang', 'Small Bang'), with infinitely small mass energy and space time and infinitely small rate of expansion. At the beginning the rate of expansion was infinitely small, or zero. So the universe must ACCELERATE to expand. The accelerating expansion of the universe we observe today is just a continuation of the initial accelerating expansion during the 'moment' of the 'Nano Bang' and is not due to an 'initial' cosmic velocity of the 'Big Bang' model. **The universe accelerated/ is accelerating not only in its expansion but also in its mass energy content and time. Time itself is accelerating.** Thus the long standing paradigm of mass energy conservation should be abandoned. **The same force** that caused the accelerating expansion of the universe during the moment of the 'Small Bang' may be causing the accelerating expansion of the universe we observe today. The total energy of the universe is not zero! It is positive! We are already observing the accelerating expansion of the universe. The law of conservation of mass energy applies only 'horizontally' and not 'vertically'. This means that the law of conservation of mass energy only applies at a specific point in time of the universe. Mass energy *at a specific time* is conserved and cannot be created or destroyed arbitrarily within a short period of time. Mass energy is created or destroyed according to a certain law of creation and destruction of mass energy: **the LAW OF ACCELERATING UNIVERSE or the LAW OF CREATION.**

Therefore, the *accelerating* expansion of the universe indicates that the universe came into existence out of nothing, **'accelerating' continuously from nothing to something.**

The universe may not be considered simply as mass energy and space time. We may understand it better as a 'biological' entity. Just as a living organism is not considered as simply mass energy and space time, the same may apply to the universe. **So the universe**

should have a 'DNA', which contains all the information about the structure of the universe at any point in time. At the beginning of the universe, **the 'seed' of the universe** came into existence out of nothing and this seed had its DNA. **Thus, birth, growth and death should also be nature of the universe just as these are the nature of living organisms.**

Introduction

According to the Big Bang model and inflation theories the universe started as a very small space time with infinitely dense mass energy, with infinitely high temperature and with cosmic rate of expansion. A scalar field known as the 'inflaton' overcame the huge gravitational force from collapsing the small universe back into nothingness and gave it a huge outward push. According to these theories a singularity existed in the beginning.

The formulation of the Big Bang model was a huge success in the study of the origin of the universe in that it disclosed that the universe started much much smaller than its present size. The key to the discovery of the Big Bang model was the observation that the universe was/is expanding.

However, new observations show the acceleration of the expansion of the universe. And the theory of inflation which was meant to resolve some observations inconsistent with the Big Bang model is resulting in other problems and is finally ending up in a highly speculative propositions that there are other universes and that the universe is much larger than we conceive.

Despite its great success the Big Bang model has fundamental problems. Its great success was that it revealed that the universe started in/as a very small space time (But huge mass energy). However, the Big Bang model and the theory of quantum fluctuations imply a universe that just popped out in a '*discontinuous*' way. And the most fundamental assumption behind the Big Bang model was **the long standing scientific paradigm of the conservation of mass-energy!** The theory presented in this paper shifts this paradigm to a new one: non conservation of mass- energy according to 'the law of accelerating universe'.

This paper presents another great paradigm shift: To see the universe as a '**living, organic, growing**' universe. **The expansion of the universe is interpreted as *growth*.**

This paper attempts to answer the following questions:

1. What is the real underlying nature of the universe?
2. Why is the expansion of the universe ***accelerating***? Or what is the significance of this *acceleration*?
3. How did the universe start? What gave the universe an 'initial' outward push?

4. How to explain the observations which are inconsistent with the theory of Big Bang and general relativity: the flatness problem, the uniformity and isotropic nature of the universe?
5. What existed before the 'Small Bang'?

Discussions

There was no 'Big Bang'

The universe didn't start as an infinitely dense, infinitely hot mass energy and space time with a cosmic rate of expansion. This causes a huge discontinuity not acceptable in the scientific method. The Big Bang model implies that there was nothing before it but huge mass energy after it. This is a huge discontinuity. The Big Bang model also doesn't explain the accelerating expansion of the universe and the observed flatness of space time, the uniformity and isotropic nature of the universe. The inflation theory apparently solved these problems, but is finally ending up in a highly speculative propositions as multiple universes and other problems.

There was a 'Micro Bang'

The universe started as an infinitely small space time, infinitely small mass energy, with infinitely small rate of expansion and ultimately out of nothing.

The same force that caused the accelerating expansion of the universe at the 'moment' of the 'Micro Bang' is causing the acceleration in the expansion of the universe today, as seen in observations! At the beginning the rate of expansion was infinitely small. So the universe MUST ACCELERATE to expand. And the acceleration we observe today is simply a continuation of the acceleration at the 'moment' of the 'Micro Bang'.

Therefore, the accelerating expansion of the universe we observe today shows that the universe came in to existence out of nothing, 'accelerating' from nothing to something.

According to the Big Bang model the expansion of the universe we observe today is a result of the initial velocity at the moment of the Big Bang. But this is not the case according to the theory presented in this paper. The expansion of the universe we see today is not a result of an 'initial' velocity at the 'moment' of a Big Bang. Suppose it was possible to halt down the expansion of the universe with some external intervention, by applying a huge cosmic pressure. And suppose, after the expansion of the universe has been stopped, the cosmic pressure was removed. What does the Big Bang model predict? The Big Bang model predicts that the universe would start collapsing due to the force of gravitation. But according to the theory presented in this paper the universe would start and continue expanding with acceleration again! **The universe accelerates/ accelerated not only in its expansion BUT ALSO IN ITS MASS ENERGY CONTENT!**

What is the force that caused and is causing the expansion of the universe?

This paper is limited to the assumption that there *is/was* a force/field but doesn't explain the nature of this force. The same field that is causing the accelerating expansion of the universe today caused the accelerating expansion during the 'initial moment' of the 'Micro Bang'. Accelerating expansion is the inherent law/nature of the universe and not a result of an initial velocity at a moment of a 'Big Bang'.

The total energy of the universe is not zero! It is positive!

We are already observing the accelerating expansion of the universe. Perhaps the negative energy of gravity is much much smaller than the positive energies of mass, kinetic energy and radiation in the universe.

Does the law of conservation of mass energy not apply anymore?

The law of conservation of mass energy applies at a specific time in the universe. This means that mass-energy is neither created nor destroyed *at that specific time*. That means mass-energy is not conserved 'vertically' but conserved 'horizontally'. This means that mass energy *at a specific time* is conserved and cannot be created or destroyed arbitrarily within a short period of time. Mass energy is created or destroyed **according to a certain law of creation and destruction of mass energy. And this law is the law of accelerating universe.**

What are other implications of this new theory?

The 'Micro Bang' theory has implications on quantum mechanics. It implies a 'modulation' of quantum quantities. This means that, for example, the charge and mass of the electron is continually increasing because the mass energy of the universe is also increasing. It may also affect other quantum quantities as the universe accelerates. (This concept requires further development).

What existed before the 'Small Bang' ?

One of the problems created by the Big Bang model is that it invokes a question : 'What existed before the Big Bang?'. This is because it implies coming into existence of something of huge mass energy, huge density, huge temperature out of nothing in a hugely '*discontinuous*' way. There is no such huge discontinuity in the 'Small Bang' model. The universe *continuously* vanishes into nothingness as we go back in time. Therefore, nothing existed before the 'Small Bang'.

Well, what started the continuous evolution of the universe?

God started the evolution of the universe from infinitely small state or from nothing. The 'initial seed' of the universe came into existence out of nothing by creation by God.

But it was not only a 'small bang', it was a 'living' seed of the universe, with 'DNA', at the beginning

The laws of Biology and the laws of Physics

Perhaps the big picture of the universe can be understood if we see it as a 'biological' entity. One wouldn't say :

'the dinosaur started life as a very dense, high temperature, with initial rate of expansion and cooling down to finally form its organs, according to the laws of physics and cosmology'.

Life starts as a microscopic 'seed' which contains all the information through the DNA. Even though all information is contained in the initial 'seed' of life, life at this stage is formless.

The big picture of the universe may not be understood by the laws of physics and cosmology alone. The laws of Biology (their analogous) may be applied to study/explain the universe.

The universe might not be considered simply as mass energy and space time. We best understand it as a 'biological' entity. Just as a living organism should not be considered as simply mass energy and space time (because living organisms have, at least, consciousness and DNA), so should the universe. **So the universe should have a 'DNA', which contains all the information about the its structure.** At the beginning of the universe, **the 'seed' of the universe** came into existence out of nothing and this seed had its DNA, which contained all information about the structure of the universe we see today.

The development of the universe is analogous with the development of life. An embryo, even if initially formless, contains all information in its DNA. As the embryo develops each organ gradually forms to make a complete living organism. With this interpretation, the information about the earth, the sun, the galaxies and everything we see in the universe today was initially contained in the 'DNA' of the initial 'seed' and everything in the universe was formed according to that information.

So the universe we observe today maynot be completely understood simply through the laws we know in physics/science; the structure of the universe was **predetermined** by the information contained in its 'DNA' when it just came into existence and small in size.

Why does the Microwave Background Radiation (MBR) exist? Why is the universe largely flat despite the predictions of General Relativity and Big Bang? Why is the universe isotropic and uniform?

If we consider the universe as a 'biological' entity then all information about its structure is contained in its 'DNA'. So to ask why the universe looks as we see/observe it is to ask why the dinosaur had the biological structure it had. The structure of the universe is predetermined by its 'DNA'. To ask why the universe has MBR and why the MBR is uniform and isotropic is just like asking why our body temperature is 37°C and uniform. There is no

fundamental explanation to why our body temperature is 37°C. Our final answer is : our DNA ultimately determines our body temperature. We wouldn't say: 'Our body temperature is uniform because our initial rate of expansion was so small that there was enough time for equilibrium'.

Another approach, other than the 'DNA' explanation, is to use the 'Small Bang' model. The rate of expansion of the universe was very small at the beginning so that the universe would be uniform and isotropic. And so on.

Conclusion

The purpose of this paper is to present new ways of looking at the origin and development of our universe and to show that the 'Big Bang' model is not a scientifically coherent theory because of 'discontinuities' and its failure to explain new observations including the accelerating expansion of the universe, the flatness, uniformity and isotropic nature of the universe. The 'Small Bang' model has been presented as an alternative to the 'Big Bang' model.

The law of conservation of mass energy has been the paradigm of science for centuries. However, the new paradigm of non conservation of mass-energy should be adopted to solve many of our scientific problems and for the advancement of science.

Suppose you are watching a movie of a ball falling down to earth on the screen of your computer. Suppose the ball suddenly stopped midway in the air on your computer screen. Would you say 'this is impossible!' because of your paradigm of the law of conservation of mass energy ? No! Because you know that it is only simulation and not real. This example seems ridiculous but it shows that perhaps we could see reality just like some simulation for a better understanding of the universe. What is 'real' for us is just like a simulation for God. Just as the pictures in an animation movie cannot complain about what is happening in the movie, so we can only accept the true laws of the universe. The law of conservation of mass energy is a scientific paradigm and not the law of nature, from an accelerating universe point of view (if the theory presented in this paper is correct). This is not to say that mass-energy is not real, at least scientifically. It is real that mass and energy / matter exist. But we should accept the non conservation of mass energy according to some law. This law is the 'law of accelerating universe'.

Perhaps the big picture of the universe can be understood if we conceive it as a 'biological' entity, with its own unique 'DNA' which **predetermines** the structure of the universe for every point in time. So the universe may not be seen as simply mass energy and space time that is governed by the laws of physics/science alone. We should apply analogous laws derived from Biology.

This paper was written with intentional usage of some established terms even though these are not consistent with the concepts presented in this paper and their implications.

References