

## **Why does the limit of the maximum force in the Universe exist.**

V.E. Yumashev.  
Zhytomyr, Ukraine.

Abstract: It is established that there is a limit of maximum force at the point  $c^4/4G$  and a limit of maximum power  $c^5/4G$  [1, 2] in the Universe. But there is no explanation why do these values exist and why do they have such signification. These limits can be explained from the point of view of the hypothesis of the existence of a chronofield in the universe. Such hypothesis is presented in [3, 4, 5]. These works were written in the early 2000s and it is not easy to find them on the Web. The text below summarizes the main provisions of the chronofield hypothesis and gives an explanation of the reason of existence of the maximum force limit.

Key words: maximum force limit, chronofield.

### **1. The main provisions of the chronofield hypothesis.**

What is time has been of interest to mankind since ancient times. The closest approach to this issue came in ancient India. According to Hindu cosmogony, time (Kala) is recognized as a special energy or form of Shiva. In this energy (or the time) or by this energy the universe is created. The time turns into a formidable flame and destroys it. However, when the "fire of Time" (Kala-lights) fades, the time devours itself and turns into Mahakala - the absolute "Time over Time", Eternity. Simply put, the universe is located in time.

Now about the chronofield. Of the known constants of the universe, two absolute values can be distinguished - the speed of light in vacuum and absolute zero temperature on the Kelvin scale. According to the existing laws of nature, matter in the universe cannot exist at temperatures below absolute zero or move faster than the speed of light.

These quantities are the boundaries of our universe. Beyond these boundaries there is something else, inaccessible to our perception. We cannot penetrate these beyond boundaries. Apparently, there is neither matter nor space in our understanding. However, some influence on our universe comes from there.

Based on this, it can be assumed that the universe has three phases of existence. The phase located below absolute zero (subspace), our space-time phase and the phase located above the speed of light (overspace). Such phase states of the universe are similar to the three phase states of water - solid (ice), liquid and gaseous (steam).

The work [3] considers the hypothesis of the existence of a chronofield in our phase of the universe. The chronofield arises between subspace and overspace and covers our entire phase. Everything that exists in our phase of the universe is under

the influence of the chronofield. It causes entropy, affects any kind of matter from elementary particles to stars and galaxies. Under the influence of the chronofield, all processes occurring in our phase of the universe are irreversible. The chronofield is unidirectional. This is what defines the arrow of time.

The energy of the chronofield can be determined by the speed of the clock. In the absence of any kind of matter, the energy of the chronofield will be maximum. This will correspond to the fastest running clock. In some works [6], a chronon is distinguished, which corresponds to the concept of Planck time. This chronon is the quantum of the chronofield.

The main work of the chronofield is to expand space. One chronofield quantum causes the birth of one space quantum (Planck length). In other words, the chronofield gives rise to space. Therefore, the galaxies do not scatter in different directions from the observer, but the space between the observer and the galaxies increases.

## **2. To the question of the limit of maximum force.**

In the presence of gravitational masses or energy processes, the speed of the clock slows down. This suggests that the energy of the chronofield is reduced by the amount of energy of the gravitational mass or energy process. Moreover, any kind of matter will reduce the energy of the chronofield and slow down the speed of the clock. The slowdown of time under the influence of gravity is an established fact.

Unfortunately, no one has measured time dilation in the presence of any energy process. If such a slowdown exists, then this confirms the chronofield hypothesis.

A decrease in the energy of the chronofield leads to a slow expansion of space. Therefore, close to the gravitational masses or energy processes, space rarefaction is created and due to this, gravity arises. It is not a curvature of three-dimensional space in some fourth dimension, it is the movement of interacting gravitational masses towards each other by space with a higher expansion rate.

It is possible that the spread in the values of the Hubble constant is related to this. For more massive galaxies, the value of the Hubble constant will be smaller. They take more energy from the chronofield than less massive ones. In addition, galaxies have their own speeds of movement in space. This can lead to both a decrease and an increase in their speed of movement relative to the observer.

The energy of the chronofield has its limit. When, at some point in the universe, the maximum force  $c^4/4G$  arises or the maximum power  $c^5/4G$ , the chronofield disappears. Space itself disappears. A black hole is formed. All the energy of the chronofield is spent on these limiting values. Thus, the magnitude of the maximum force limit is limited by the maximum energy of the chronofield.

We don't know what's in a black hole. Although the black hole itself occupies some part of space, there is neither time nor space there. Any matter of our phase of the universe disappears beyond the event horizon and turns into something else. Perhaps a black hole is a failure into subspace or overspace.

Gravity is a different density of space, which depends on the energy of the chronofield. Therefore, gravitational waves are chrono waves. You can detect them only by changing the speed of the clock. If they exist.

### 3. Conclusion.

If the hypothesis about the chronofield and the phases of the universe is correct, then this will allow us to take a fresh look at our universe. There was no Big Bang. There was no singularity. Our phase was formed all at once, in all its infinite volume. The universe was filled with matter in a very dense state.

This led to exceeding the maximum force limit at some points in space. As a result, massive black holes began to form. They concentrated free matter around themselves, from which stars began to form and galaxies began to form. Therefore, there is a black hole at the center of every galaxy. It is unlikely that massive black holes at the centers of galaxies formed after the formation of the galaxies themselves.

The chronofield expanded the space between these galaxies and continues to expand it now. Therefore, even within the Hubble horizon, we are observing young galaxies, and not the Dark Ages or the era of reionization of the universe. As the Big Bang theory suggests.

### References.

- [1] G. W. Gibbons, *Found. Phys.* **32**, 1891 (2002), arXiv:hep-th/0210109.
- [2] C. Schiller, *Int. J. Theor. Phys.* 44, 1629 (2005), arXiv:physics/0607090.
- [3] В.Е. Юмашев. *Время и Вселенная*. НИТ. 2001.
- [4] В.Е. Юмашев. *Напряжённость хронополя, или как обнаружить гравитационную волну*. НИТ. 2002.
- [5] В.Е. Юмашев. *Фазовые состояния вселенной*. <https://www.docsity.com/ru/fazovye-sostoyaniya-vselennoy/1378704/>
- [6] *Caldirola, P.* The introduction of the chronon in the electron theory and a charged lepton mass formula (англ.) // *Lett. Nuovo Cim.* (англ.) [рус.](#) : journal. — 1980. — Vol. 27. — P. 225—228. — [doi:10.1007/BF02750348](https://doi.org/10.1007/BF02750348)