



# Registration of Gravitational Waves

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Registration of gravitational waves is one of fundamental problems of physics. At the beginning of the last century A. Einstein's works predicted existence of these waves. Nevertheless, despite numerous attempts are made in different countries of the world these waves have not been fixed up today. Josef Veber, an American physicist working in 60<sup>th</sup> of the XX century, is sure to be called as the first experimenter who disclosed gravitational waves. Nowadays lots of many-million projects on registration of gravitation waves are developed and realized (LIGO (USA), GEO-600 (Germany-England), VIRGO (Italia), and TAMA (Japan)). However no positive results were achieved.

Failures in registration of gravitational waves can be explained by the fact that researchers have erroneous notion of the essence of these waves. This erroneous notion is laid in an experimental project that causes negative results.

Many researchers believe that influence of gravitational waves on the bodies should be resulted in deformation of these bodies (i.e. in change of mutual place of particles of a material body). All the attempts to disclose the gravitational waves are based on this notion. Now two types of ground gravitational antennas are supposed as priority.

The first type supposes the registration of mechanical oscillations of a massive test body that is initiated by influence of gravitational waves on it.

The second can register changes of a distance between space-apart free masses when gravitational waves act upon them. Great attention is paid to the second type of antennas in the developed projects. Failure attempts of registration of gravitational waves can be explained by their low intensiveness and insufficient accuracy of existing measuring equipments. Therefore, now there are made various attempts to register gravitational waves produced by such great cosmic phenomena as confluence of black holes. More accurate instruments and measuring equipments, for example, a laser interferometer, are developed. Nevertheless, positive results are hardly to be obtained.

Here is one of the fallacious explanations of action of gravitational waves on a body: *"Passing of gravitational waves changes an interval between*

*objects transferring them one from another like two boats sometimes are approached sometimes moved from each other by sea waves"*.

Following this example to explain influence of the gravitational waves on bodies placing on the Earth, it can be said that all bodies are in one boat and raising or sinking of the boat on sea waves does not cause change of the distance between the bodies. However, this example seems to be very simplified for explanation of influence of the gravitational waves on bodies. In fact, the case is much more difficult.

According to A. Einstein's theory, bodies moving with variable acceleration will radiate gravitational waves. **Gravitational waves represent the essence of changes of gravitational field occurring at light speed.** Since the gravitational field is a deformed space-time then the gravitational waves cause change of deformation of the space-time. Change of deformation of the space-time is accompanied with change of deformation of geodesic lines (i.e. lines by which all the bodies move).

A body moving by a geodesic line whose deformation is changed changes its acceleration. Change of acceleration of the body will change gravity applied to the body in this area of space. Hence, influence of gravitational waves on the body occurs through gravity which influences on it.

It is known that a fundamental difference between gravity and other forces appearing at a direct contact with a body consists in the fact that gravity provides all the elements of the body (all its points) with equal acceleration (deformation can not occur), and other forces influence on certain parts of the surface of a body and so cause its deformation.

Hence it is senseless to try to measure deformation of a body or change of a distance between test bodies occurring under influence of gravitational waves. It is necessary to note that, in particular, when a body is placed on an unmovable support relatively to the Earth, value and the direction of gravity coincides with weight of the body. Therefore, in this case gravitational waves can be registered at measuring of changes of the body weight.

An experiment on registration of the gravitational field of the Earth by measuring change of weight of

a test body was made. Before the beginning of the experiment there was set a problem to register gravitational waves produced by the Mercury and the Venus at approaching to the Earth. The gravitational field in which the Earth moves changes due to superposition of gravitational waves of other planets on it. These changes were necessary to be registered.

The experiment was as follows: a test body (a 100 grams weight) was weighted on an electronic balance in equal time intervals of 14 days. The experiment was lasting for 12 months. In the experiment it appeared that change of a distance between the Earth and the mentioned planets causes change of weight of the test body. The change of weight of the body occurred in proportion to the distance between the planets. The test body was weighted in the same conditions and in the same place. The performance of the experiment is so easy that every person can made it.

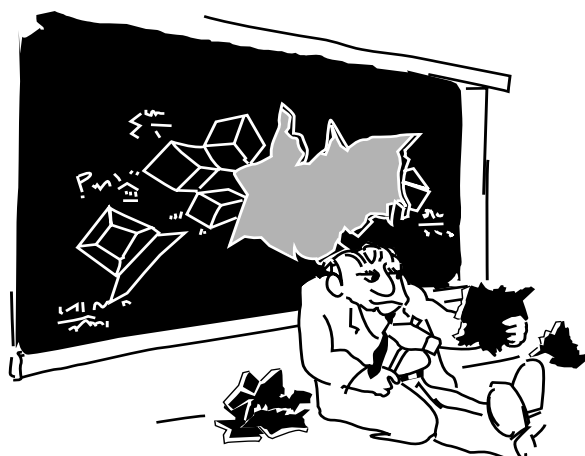
It is known that weight of a body changes (decreases) at moving along the Earth surface from its pole to the equator. Change of weight of a body locating in the same place has not been fixed until now.

The fixed change of weight of the test body proves change of gravity applied to it and, consequently, change of the gravitational field in which the test body moves as well as the Earth does. **These changes of the gravitational field were caused by motion (superposition) of the gravitational waves produced by the mentioned planets at their**

**approaching towards the Earth at the distance of the existent gravitational field.**

Hence, the Earth and all the bodies locating on it move in the constantly changing gravitational field, therefore, constantly change their weight. Nevertheless, as it is known, change of the gravitational field is the influence of gravitational waves on it. Hence, measuring changing of weight of bodies we can speak about registration of gravitational waves.

### *In search of the 4th dimension*



From <http://home.ural.ru/~meop/index.html>

## High-Energy Hyper-Low-Frequency Electric Field

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**The article represents a practical and theoretical research on possibility of existence of a high-energy hyper-low-frequency electric field which is interpreted by modern measuring instruments and subjective perception as a static field. Besides there are observed a problem of the field registration, a hypothesis of relic origin of the registered field and a hypothesis of wave nature of the Universe.**

A passenger on board a ship sailing in the ocean will never notice action of waves of high and low tide. At the same time, weathering waves of several numbers produce a dangerous storm. However, an ocean liner is designed for such a storm therefore the passenger would just experience some discomfort. It is another case if tide wave hides reefs... I wish our ship, i.e. the

Earth, the Solar System, the Galaxy, and the Universe, not to be lead to such a place by any ignorant "navigator"!

One of the most mysterious persons in the history of electricity physics was an outstanding inventor Nicola Tesla (1856-1943). When the majority of scientists developed researches of microworld particles he followed the opposite scientific path. He was interested in the electrical potential of the whole Earth. He researched ways to influence on it, control its state and methods of its regulation. Therefore many of his patents, experiments as well as a purpose of constructions and devices built according to his ideas arouse perplexity and misunderstanding of modern scientists.