

The measurement of speed of gravitation wave

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Abstract

The paper introduces the hypothesis about the reason of the gravitation and preliminary results of the experiment, not finished yet.

Introduction

Gravitation is the universal attraction of every particle (or object) of matter for every other, wherever located (Duncan J., 1955). The present physics does not know the real reason of gravitation. One of the hypotheses says about gravitons, not captured yet.

Hypothesis

In the paper we present the hypothesis that the gravitation is caused by the flow of unknown kind of matter into the every object. This flow causes under-pressure between objects and "pressure" from object's outer side. The flow motion of the matter is caused due to suck into the object mass. The reason of suck is not clear. We have some ideas but at present is not the case. Because we consider the flow of the matter (like a wind in the atmosphere), the speed of gravitation wave is less than speed of electro-magnetic wave. Beside we consider for flow speed the "law of volumes", similar to "law of areas" (Kepler). It means that flow into the object mass has constant volume speed. The speed value depends on object mass and distance from the object. The present physics speaks about potential of gravitation field, which is by our hypothesis the flow speed.

Every mass object creates the gravitation field with equipotential surfaces around the object. In case of a ball subject the surfaces are around its center. This is the case for stars and planets. When these object are in motion, the equipotential surfaces are deformed. The value of deformation depends on object speed and distance from the object). Diagram of deformation for constant object speed is illustrated on figure 1. These ideal conditions are never fulfilled in nature, since every object is "attracted" by all others.

The Experiment

To verify the hypothesis we carried out the following experiment "The measurement of weight motion". The weight hangs up on two wires, figure 2. Two wires make weight to move in one plane. Our plane goes from South to North. We

assumed that the weight motion through deformed gravitational field reached the maximum and minimum value in time of tangent direction to flow motion.

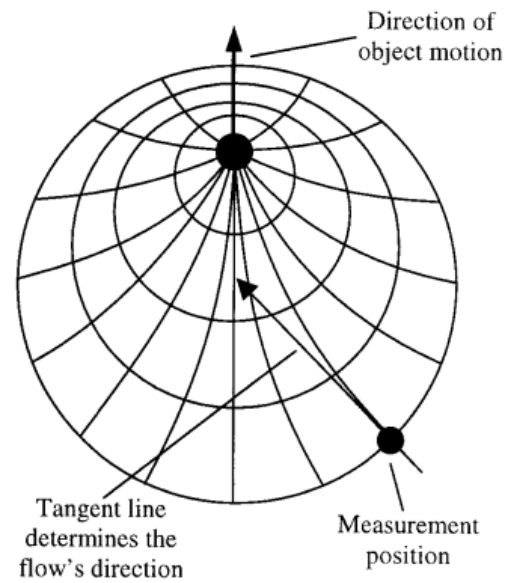


Figure 1. The deformation of gravity field due to object motion

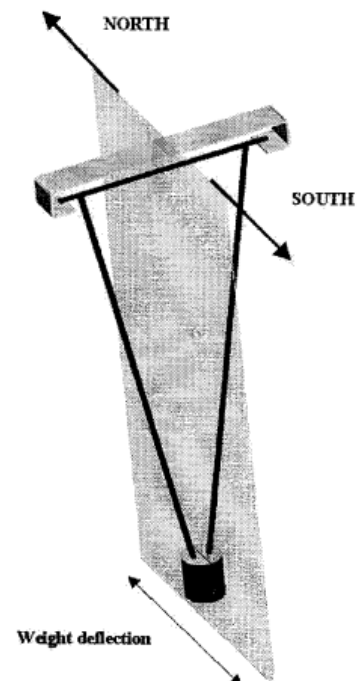


Figure 2. The diagram of the experiment

The forces affected on weight are:

- Static attractive force of deformed gravity field
- Dynamic force due accelerated motion of weight (mass object) - in deformed gravity field

The result force makes the weight to move in plane South-North, due to rotation and orbital Earth motion around the Sun and due to Moon motion. The next diagram shows the measured weight deflection during 21 hours on March 13th. The position of experiment place, Kosice - is 21°15' E 48°43' N.

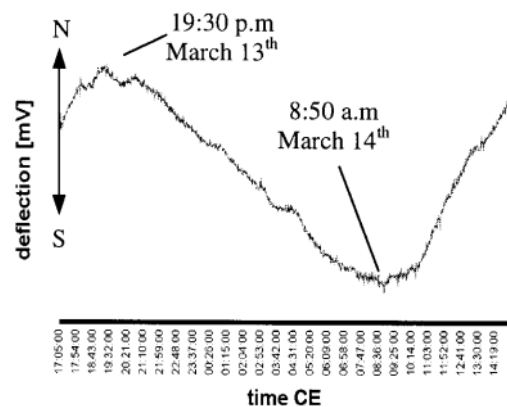


Figure 3. The measured values of weight deflection

Used devices do not allow us to get the absolute values of deflection in mm as well as the precise time of maximum and minimum values of weight deflection. The time values in figure 3 are approximated only. It should be keep in mind that gravity field close to the Earth is deformed also by the Moon position. From the analysis of achieved data we determine the first approximation of speed of gravitation wave to 15000 km/s.

If the hypothesis is correct the time of maximum and minimum values of weight deflection will occur at noon or midnight two times a year as it is clear from figure 4. Probably it will happen on the beginning of July and on January. We are

References

Duncan J. C. Astronomy, Harper & Row, 1955

continuing in measuring and also we are searching for cooperation to get better results and analyze the data.

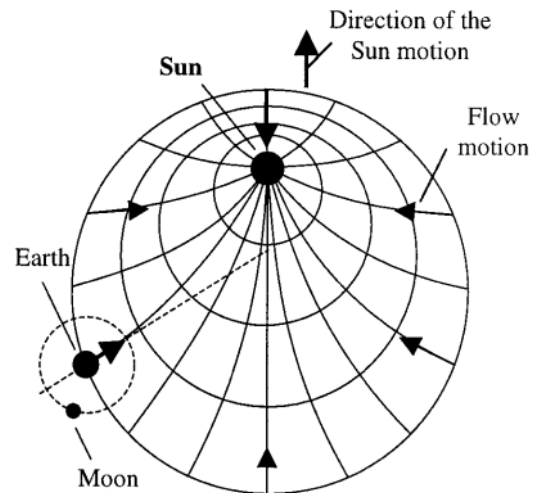


Figure 4. The diagram of probable current Earth position in gravitation field of the Sun

Note: There are two types of waves in the air. The first is sound wave and second the flow wave due to wind. The experiment measures the speed of second type of wave.

Conclusion

One must use more sophisticated measurement equipment to get better results. For example Laser Scan Interferometers. Also the mass of weight must be much higher and place of the experiment should be at more quiet place. We have continues problems with dumping the weight vibrations due to daily works in the building.

If the hypothesis will be confirmed, it is possible to find out the direction and speed of the Solar system motion and substitute the Michelson – Morley experiment.