

# Fundamental Physical Phenomena Under Examination

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About what is table we all agree because term "table" is build up on the base of elementary perception (sight).

Term "time" is build on the abstract level of the mind, time we cannot observe with exes directly, result is about what time is we have different opinions and images. On the base of elementary perception (on the "Test of Evidence based on Perception" – TEP) we can define time as: "Time is a measure of motion" (1).

Term "space" is also build up on abstract level of the mind, in universe we can observe only distances between objects and not space. About existence of space as a physical reality we do not have any perceptual evidence. We know that material objects are in an energy field that builds up space, so we can talk about physical reality "matter-energy" (of space); space-time is merely a math model. Most of physicists today are convinced that space-time exists as a physical reality, but for that there is no perceptual evidence. On the base of TEP time is a measure of motion in arena of "matter-energy".

Gravitational waves have never been observed directly, but still most of physicists believe that they exist as a physical realty. Gravitational waves are pure mathematical invention. Speed of the binary pulsar might diminishing also because mass of the stars is getting smaller and not because of gravitational radiation. Mass of stars is getting smaller because in the centre of neutron star matter transform back in energy of space.

Experiments prove that matter radiates electromagnetic radiation, but never gravitational radiation by matter was observed. Idea of gravitational waves was born in Einstein mind in order to resolve by gravity the problem of action on distance. Gravitational waves have never been observed directly. For their existence there is no Perceptual Evidence Test.

Same is with "chronos" a hypothetical particle that should be a "grain" of space-time. No evidence for such a particle.

Theoretical physics has become "Mathematical philosophy" where physicists discuss about phenomena for which we do not now are real or only mathematical inventions. Mathematic has overruled physics.

Prof. Hawking explained in his book "The Brief History of Time" inflation phase with simple mathematical fact:  $-1+1 = 0$ ,  $-2+2 = 0$ ,  $-3+3 = 0$  and so on. He says that energy if matter is positive, gravitational energy is negative and their sum is always zero. One cannot with mathematic explain how matter and energy appear in the universe.

Expansion of the universe is against first law of thermodynamics. If universe would expand, cosmic space would expand too. One has to explain from where energy of space (gravitational energy) is created from. Our understanding is that energy of matter and energy of space are in a dynamic equilibrium. In black hole matter is transforming in the energy of space in a centre of Active Galactic Nucleus energy of space is transforming back in matter (2).

Today mathematics has become primary and TEP secondary. On arXiv you can see many articles that have mathematical model, how much this model correspond reality itself is not important.

Basic research tool of theoretical physics research methodology should be TEP. We can recognize a physical phenomenon real, physically existing, when we observe it. Until it is not observed it is only "hypothetical". Sure we cannot observe it directly with eyes; we observe it with sophisticated electronic instruments.

For example diminishing of speed of binary stars is not a proof for existence of gravity radiation because gravity radiation was not directly observed yet and because diminishing of speed can be caused with something else we do not know yet. Existence of gravitational waves does not pass TEP.

It is great that journal SCIENCE has published about superluminal phenomena. This will help to overcome some anachronistic conviction which prevents physics to develop and become a model of the world that will correspond to the universe at the maximum. Energy medium in which matter exists can be a direct information and energy transfer medium. We have experiments which prove that. Idea of light speed as a maximum speed in the universe has to be abandoned.

By superluminal phenomena we should be open for new vision according to which speed of information and energy transfer is infinite. Universe is a mystery and will remain forever. We just have to be humble enough to go deeper in. For that mind is not enough. Physics has to develop consciousness too. Consciousness as research tool able us to distinguish between models of the world and world itself. Consciousness makes possible to carry out the TEP that distinguish between physical reality and mind models that describe it (3).

In today physics some hypothetical phenomena as space-time, time, gravitational waves are considered to be real, to exists as a physical reality. We need a rigorous examination of their existence; we cannot build physics on unproved beliefs, but on experiment. Until fundamental physical phenomena do not pass a test of TEP they should be treated and understood as hypothetical.

References:

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