

## ENERGY FROM THE VACUUM AND SUPERLUMINAL COMMUNICATION

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### Abstract

Some aspects of the future of humankind are considered based on applications of the quantum modification of general relativity. Particularly, the energy supply from the vacuum and a new form of communication are discussed.

We will get the future which we deserve. A bright future can be expected only if we support good science. I mean, not just science, which looks good and advertised in popular books and on TV. But really good new science.

Believe it or not, it all starts with cosmology. The conventional Big Bang cosmology is almost 100 years old and is in agony under contradictions with cosmic data. If we want to survive and prosper, we need to change our basic perception of the universe. Technical critique of old cosmology and main results of new cosmology, supported by cosmic data (without fitting), are presented in Ref. 1-3. The new cosmology is based on quantum modification of general relativity (Qmoger), which was introduced in Ref. 4 and developed in Ref. 5-7, 1-3. These works were presided by invention of new type of fluids, namely, the dynamics of distributed sources-sinks [8, 9], which in turn was presided by the general analytical solution of the (1+1) dimensional Newtonian gravitation [10].

The major difference between two cosmologies is that, instead of Big Bang, in Qmoger the energy is continuously produced by the vacuum everywhere. So, if we are smart enough, we can use this unlimited supply of the fresh fuel instead of reusing what is left. Indeed, in Qmoger the ultralight gravitons with tiny electric dipole moment (EDM) are continuously seeping from the vacuum. Mathematically it is described by two additional terms in the Einstein equations.

When concentration of gravitons in galaxies reaches certain threshold, particles of "ordinary" matter are produced, including photons, which form the background radiation. So, a part of the original mass/energy, supplied by the vacuum, is lost at this stage. What we, the people on the planet Earth, are trying to do, particularly, in the thermonuclear project, is to get additional energy from transformation between different particles of ordinary matter. Apparently, it is not easy to do with particles, which are already heavy. The original transformations from ultralight gravitons are, probably, more energy efficient. It is shown [7, 1, 2], that gravitons form the dipolar quantum condensate even for high temperature. Such system can be manipulated by using electromagnetic fields. Quantum entanglement can be used [11] to enhance production of energy. Corresponding technology for production of energy from the vacuum can be developed in a near future if we are serious about it.

Another important aspect of Qmoger is the gravicomunication (GC) [12], which could be superluminal. First at all, there is a problem of safety, because GC can be used as a weapon by distant developed civilizations. Human brain can detect GC by subjective experiences [12]. So, some wrong concepts can be imbedded in human brain by using GC. On a bright side, GC can be used for healing and enhancing of our brain, as well as of the whole human society. In any case, we have to be on a top of this phenomena.

Energy and communication are major additions to the presented in Ref. 2 list of directions for future research in Qmoger, which, I believe, will be beneficial for humankind.

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