

ON THE POSSIBILITY OF CREATING THE RADICALLY NEW METHOD OF COMMUNICATION AND OF CONTROLLING THE COURSE OF TIME

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According to [1] the own field of electrically charged particles belongs among the physical fields which are capable to transfer signals with superluminal speed. The inevitability of existence of superluminal signals is evident from the quantum theory of electron treated as an open self-organizing system [2]. In conformity with this theory, taking into account the self-action of electron causes it to become a spatially extended dynamical system, namely: it consists of a region of the basic localization of electric charge, with the sizes being of the order of Bohr radius, ($\sim 10^{-10}$ m), of a tail of the distribution of electric charge extending up to infinity, and of the long-range own field. Apparently, in order that such a dynamical system can be stable, a physical mechanism should exist combining its parts into a unit. Superluminal signals are such a mechanism, making, thus, an important element of structural organization of matter that provides stability of real physical systems.

From the synthesis of the idea of unified space-time underlying special theory of relativity (STR) and the concept of physical (force) field, it follows with necessity that time, like space, has physical properties [3]. This means that the course of time in some region of space depends on physical processes occurring in this region. The change in the course of time, in turn, influences physical processes. The results obtained are unambiguously indicative of the capability, on the one hand, to control the course of time in some region of space with the help of electronic processes and, on the other, to influence the behaviour of physical system by means of physical properties of time. The ability to change the course of time in the process of motion, which can be referred to as "the feeling of time", represents one of the most fundamental physical properties of any form of matter internally inherent in it by the very nature of things.

The existence of superluminal signals does not contradict STR. The conclusion that superluminal signals do not exist in nature, formulated at the beginning of the twentieth century as a consequence of STR, was drawn from purely kinematical reasoning, while the transfer of a signal is a dynamical process, which can be correctly described only on the basis of the solution of dynamical equations.

The inferences obtained [1-3] follow immediately from relativistic equations of motion and are an essential development of conventional notions of space and time. They point to the possibility of creating qualitatively new means of communication, based on the use of superluminal signals, which by their physical characteristics (the velocity and distance of information transfer, the ability of penetrating obstacles) will be much superior to the existing ones. At present all the necessary prerequisites are available for practical mastering of own fields of particles and physical properties of time.

References

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