GENERAL DEFINITION FOR ENERGY AND INFORMATION. GENERAL MODEL FOR ENERGETIC AND INFORMATIC PRODUCING SYSTEMS

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Applied and Theoretical Informatics reached extraordinary heights in its development. However a satisfactory solid theoretical foundation for these sciences has not been established until now. The reason is the absence of satisfactory general definitions of the notions of **information** and **informatic system**.

The distinguished peculiarity is inherent not to Informatics only. In Physics despite of its longer existence the situation with the solid theoretical foundation gets on in the same way: there are no satisfactory general definitions of the notions of **energy** and **energetic system**.

The following conclusion may be done from this apparently not random coincidence: the cause of the described situation is founded not in Informatics itself and not in Physics itself, but in the absence of satisfactory **general** solid theoretical **conception** of the world and its being, in which the notions of information and energy might appear in some natural deductive way.

The report is intended to try to fill this gap in the scientific world outlook. It continues the author papers [1, 2].

The report consists of three parts. The first part sets out the general **united** (synthetical) **closed in itself** conception of the world, which allows us to formulate some parallel definitions of the notions of energy and information, without going beyond the bounds of this world.

In the second part of the report on the basis of the conception set forth in the first part, some sufficiently general notion of the *producing* (*conservatively-dynamic surrounded stream*) system, described by the proper system of evolutional equations, is introduced. In the capacity of important special cases of such systems, some notions of the *energetic producing system* and the *informatic producing system* are introduced.

In the third part of this report the examples of the heating stove (as some energy producing system) and the personal computer (as some information producing system) are analyzed in detail. This exposes the applicability of proposed conception for the generalized and formalized description of a wide class of systems that exist in reality.

It follows from the above that the given report can serve as a scientific worldview layer for underpinning a solid theoretical foundation both under Physics and under Informatics.

References

1. *Zakharov V.K.* Parallel definitions of information and energy. The parallelism between information and energy producing systems // *Modeling and data analysis* **Vol. 1**, 2016. Pp. 21-36. (in Russian)

2. *Zakharov V.K.* The producing system as the general model for informatic and energetic systems // *Actual directions of science investigations of the XXI century: Theory and Practice* **Vol. 5**, No. 10(36), 2017. Pp. 219-222. (in Russian)