SOME NON-CLASSICAL MODELS OF NATURAL PROCESSES

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Annotation: This paper contributes to the generalization of lattice-valued models of set theory to non-classical contexts.Classic and non-classical models of natural processes, why we need non-classical models, expirements vand theories all about these will be discussed.

Key words: non-classical models, reflect,accuracy of the instruments, an abstract object, investigation, consumption, analysis of funds, dynamics and ratio of investment indicators, forecasting.

Exploring the world around us can lead to inaccurate and incomplete information. But it is to fly into space, to unravel the mystery of the atomic nucleus, to master the laws of development of society, and does not interfere with others. They create a model of the event and process being studied. Model should reflect their characteristics as fully as possible. The approximate nature of the model can take many forms. For example, experience the accuracy of the instruments used during the conversion affects the accuracy of the result obtained.

Modeling-Cognitive objects (physical phenomena and processes) using their models application is the creation and study of models of existing objects and events.

The method of modeling is widely used in modern science. It is a scientific research process facilitates, and in some cases becomes the only means of studying complex objects. An abstract object, a distant object, in the study of very small objects the importance of modeling is great. Physics, astronomy, biology, economics from modeling methods

It is also used in the sciences to determine only certain properties and relationships of an object.

Depending on the means of selecting models, it can be divided into three groups. These are abstract, physical, and biological groups. The range of abstract models includes mathematical, mathematical-logical, and similar models enters. The range of physical models includes miniature models, various tools and devices, simulators and so on etc. are included.

Let's take a brief look at the content of the models.

1. Physical model. The nature and geometric structure of the process under investigation is the same as in the original, but models that differ in quantity (size, speed, scope), such as airplanes, models of ships, cars, trains, hydroelectric power stations, etc. are examples of physical models.

2. Mathematical models relate to the structure, interaction, and function of living organisms consists of a mathematical and logical-mathematical description of the laws, according to experimental data or logically constructed and then tested experimentally.

3. Biological models In this case, the mechanism of origin, course, consequences of this condition or disease etc. are studied experimentally. Different methods in the biological model affect the genetic apparatus, infecting germs, removing certain organs, or inserting hormones that are the product of their activity and other methods are used. knowledge in the field of genetics, physiology, pharmacology in such models applied.

4. Physicochemical models are the physical or chemical biological structure, function, or process is to regenerate by means of.

5. The economic model began to be used around the 18th century. F.Kene's "Economic Tables" was the first attempt to show the process of social reproduction.

From different models of economic systems to study different areas of activity used. The most general laws of economic development are based on economic models checked. Various complex indicators, including national income, employment, consumption, analysis of funds, dynamics and ratio of investment indicators, forecasting.

Large economic models are used. Small economic in the examination of specific economic conditions systems, mainly mathematical models are used in the study of complex economic systems. Mathematical models are the laws of the structure, interaction, and function of living organisms consists of mathematical and logical-mathematical descriptions, based on experimental data or logical based on and then tested experimentally.The study of mathematical models of biological phenomena on a computer is a biological study allows you to predict the nature of the change in the process. It should be noted that this is the case it is sometimes very difficult to organize and conduct processes experimentally.

The form of rational thinking is a theoretical model as a system of concepts about the state, the main features and laws of the process, the structure and organization of the object of study. Due to their experimental reliability, theoretical elaboration, physical models are the standard model of rational thinking and the basis of modeling in all other areas of scientific knowledge. Their task, therefore, goes far beyond just writing simple forms of motion of matter. "Any theory or model is a physical model at its core, because only physics has objective standards of the material world in its arsenal."As an example of the sciences, classical physics, built on deterministic laws, provides insights into scientific criteria, experimental accuracy, proof of hypotheses, and strengthens the role of mathematics as a universal language of scientific knowledge. Material point and continuum models are fundamental classical models (everything else is built on them). The material point model is applied to objects whose dimensions are not taken into account in the given problem, while the continuum model is a concept of material substance (essence) that continuously fills a certain area of space. The first model is based on Newton’s classical mechanics, and the second is based on Maxwell’s electromagnetic theory. These models are a shining example of scientific abstraction. Studying them develops in students serious scientific thinking, distinguishing the features of the subjects under study, skills and conscious conclusions based on them. Quantomechanical modeling introduces antinomy into the system of scientific knowledge and provides new insights into

chance and necessity in nature, and the relationship between subject and object of knowledge. From the point of view of the logic of formal discussion, both of the two negatives about the corpuscular and wave nature of material particles proved to be true, and the appropriateness of either is determined by the phenomenon under study. The study of quantum mechanical models changes students attitudes toward the relationship between scientific, everyday, and conventional knowledge. They begin to realize that writing objective reality does not always fit into the realm of formal logic, and that both mutually exclusive concepts embody elements of reality. The role of the researcher is not understood as an external observer of the object, but as a preparer of the state of the object, the characteristics of which change during the observation process.

The concept of self-organization, the idea of nonlinear dynamics, allows us to cover many phenomena of the evolutionary systems of nature and society with a holistic approach. If the dynamics and state of linear systems are determined only by external parameters and internal structure (e.g., ideal gas), then the dynamics and state of a nonlinear system reflect, firstly, the previous state of the system itself and, secondly, cannot be determined homogeneously. In open nonlinear systems, self-organization, chaos, catastrophe, stagnation, tension, and so on can occur.

The universality of nonlinear system models is evident from several recent studies. For example, they offer a quantitative assessment of current issues in sociology or biology, which are the subject of modern ecology, economics, and traditional humanities. Using the spatial portrait method, it proposes to solve the problem of industrial pollution, increase the effectiveness of fines, and analyze the electoral process, which allows to determine their good falsification on the basis of data published only once.

It is possible to speak about post-non-classic ecology as a phenomenon of post-non-classic knowledge in some aspects :

- in the sense that it is aimed at the definition of interconnection between ideal and material worlds and on this basis at the negotiation of microcosm and macrocosm;

- in the sense that within the limits of it a question of harmonization in relations of microcosm and macrocosm arises;

- in the sense that the model of ecological reality and interaction of human inner world and outer environment have an autopoietic and fractal character.

Thus, the ideas offered could require definitions, but that is just the point, that they should be developed, more precise, verified. In principle, one should carry out searches of more successful conceptual approaches, including those aimed at the alignment within the limits of ecology their specific variant of interface between matter and spirit. Besides, from these ideas there must be held the transition to more concrete models, in which connection, of both an empiric, and theoretical character.

So, we are facing not a usual control situation when the subject of control (a control system, in this case, the human inner world) and the object of control (a controlled system, in this case, ecological environment) have direct and reverse connections, but something more complicated. May be, this principle should be recognized as one of the most important postulates of post-non-classical ecology.

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