

Prof. Alexander A. Zhdanov



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Prof. Alexander Zhdanov during 30 years are developing his own conceptual model of nervous system was named system of autonomous adaptive control (AAC). In his research he goes from cybernetic view on natural control system (brain) as on a system which must works in given conditions – minimum initial knowledge about properties of environment, discrete realization and need to learn in one process of control. Prof. Alexander Zhdanov deduces the conclusion about working principal, structure, main tasks set of the brain and its elements - neurons. Some neuron models were proposed, it is Zhdanov's neuron models, were the neuron is self-learning recognition system. All these principals and models were programmed and demonstrate the declared properties. Some of proposed by Zhdanov statements already have obtained confirmations in biology and modern artificial intelligence systems. These are the statement that emotional subsystem is the main system-forming system in brain, that brain is self-learning (adaptive) control system (it is not a system is trained by a "teacher"), that nervous system is not a common network process, but each neuron recognizes one pattern (it is recently was confirmed by "Jennifer Aniston neuron"), that brain is multilevel adaptive system (the property is used now in "deep learning" artificial neural networks). But some of Zhdanov's statements have not while common understanding and confirmation. These are for example the appeal to understand biological neuron as separate self-learning pattern recognition system, not as simple threshold adder, which demands of a teacher for adjusting its input weights. Another example is statement that brain is not a recognition system for realizing of set of reflexes, but brain is self-learning system for control on base of empirical and others knowledge and own emotional appraisals. Alexander Zhdanov is convinced that these and others his statements that was published in his papers and the monograph "Autonomous Artificial Intelligence" will find common understanding soon.