

**70 YEARS ANNIVERSARY OF  
ACADEMICIAN VLADIMIR MEFODIJEVICH MATROSOV  
Director of stability and nonlinear dynamics research center of A.A. Blagonravov  
mechanical engineering research institute of Russian Academy of Sciences,  
Chairman of Mathematical Cybernetics chair of Moscow State Aviation Institute**



V.M. Matrosov was born on May, 1932. He graduated from Kazan Aviation Institute in 1956. Since 1996 he has been the Director of The Center for Stability and Nonlinear Dynamics of Mechanical Engineering Institute by A.A. Blagonravov of Russian Academy of Sciences, he is the actual member (academician) of Russian Academy of Sciences (RAS), he is a Ph.D. in Mathematics and Physics, Doctor of Science in Mathematics and Physics, he is the professor, the laureate of the USSR State Prize in The Branch of Science and Technic and of The USSR Council of Ministers Prizes, he is the distinguished specialist in the branch of the theory of stability and control, nonlinear mechanics, applied mathematics and artificial intelligence.

V.M. Matrosov worked out the method of Vector Liapunov Function's in the theory of stability and control of nonlinear dynamic systems behavior, recognized by the world scientific community and included into the tex-books. He formulate the comparison principle for derivation of a teorems in the mathematic theory of systems. These results are priority-driven in science and got their further development in the works of many Matrosov's students, and followers, who created the well-known scientific school in the theory of stability and control.

The results of Mantrosov and his scientific school found a wide application in the works on orientation systems of spacecrafts for communication, navigation and survey of the earth surface, on systems of stabilization for orbital stations, orbital and stratosphere telescopes, the intellectual control system of the modern fighter, in creating of computer system for analysis of the strategic stability in miltipole world.

V.M. Matrosov is the founder and the first director of Irkutsk Computing Center of Siberian Department of RAS (1975-1991).

Matrosov fulfilled the series of fundamental research for the development of methods of nonlinear analysis of complicated dynamic systems behavior, logic-dynamic systems and systems with the variable structure. The results are published in many of reports, articles and in 5 monographies, the latest of them is "V.M. Matrosov 'The Method of Liapunov's Vector Functions: The Analysis of Nonlinear Systems Dynamic Behavior' ", M. Fizmatlit "Nauka", 2001, 384pp.

In the 90s V. Matrosov was the scientific director of International RAS-UNESKO project "Models, Methods and Software for Analysis of Global and Regional Sustainable Development", projects of GNTP "Security" on mathematic modeling of branches and regions of the contry, regarding possible technogenic and natural disasters. The results of his researches of possibilities of Russia's tansition to the suustainable development are used in producing an expertise and revision of the project of the strategy of Russia's sustaniable development.

V. Matrosov is the chief author and co-editor of collective monographie: "The New Paradigm of Russia's Development in the XXI Century: Ideas and Results. complex Investigation of Problems of Stable Development", "Academia", 1999, 460pp.

V.M. Matrosov is the Chairman of Expert-and-Consultative Concil of the Russian Parliament Comission on The Problems of Stable Development, the member of the Higher Ecologic Concil of the Ecology Committee.

V.M. Matrosov is the member of Russian Ecologic Academy, of Academy of Social and Humanitarian Studies, of International Academy of Noosphere (Sustainable Development), he is the honorable member of Russian Academy of Cosmonautics by K.E.Tsiolkovsky, the honorable professor of Kazan State Technical University (KAI).

V.M. Matrosov is the founder and the President of Inter-regional Public Organization "The Academy of Nonlinear Sciences", connecting about 200 doctors of sciences, who personificate the leading in the world native scientific school in the branch of the theory of stability, nonlinear dynamic analysis and the theory of complicated systems control. The Academy has 7 region departments in Russian Federation, departments in the USA, France, in the Ukraine, in Jugoslavia, in the SAR, the Academy takes part in publishing of 2 international journals. The President of the Academy directs the holding of International Congresses and annual Scientific Conferences on nonlinear analysis and its applications.

**Invited Lectures in:**

- First World Congress of Nonlinear Analysts, USA, 1992
- Second World Congress of Nonlinear Analysts, Greece, 1996
- CESA'96 IMACS Multiconference, Lille, France, 1996
- IEEE International Conference on Systems- Man and Cybrnatics Le Toucet, France 1993
- 24 International Conferences and Symposiums. 1970-1994
- 11 Universities and Institutes of Technology in USA, 1990, 1994
- 6 Universities and Institutes of Technology in India, 1985, 1987
- 3 Universities and Institute of Transport in France, 1990-1993
- 3 Universities in Italy, 1970, 1978, 1992
- 2 Departments of UNESCO, France, 1991, 1992.

**Contract works:**

1. Dynamics and Control of stratosphere and orbital astronomical observatories, 1965-1975. Kazan Aviation Institute and Kazan Optic-Mechanic Factory.
  2. Dynamics and Control of Large Scale orbital stations, 1975-1980, Syberian Energy Institute of USSR Academy of Sciencis, Scientific-factory United "Energy". and others before 1996
- Total number of contract works more than 32.

**Grants and Projects:**

1. Complex of Software Packages and Project "Hevrolog" of Large Scale System of Logical Inference and Search of Problems Solving for Mathematical Modelling, Nonlinear Dynamics and Control, 1978-1991, Irkutsk Computing Center of USSR Academy of Sciencis, USSR State Committee of Science and Technology.
2. Creating of Self-Organizing Men Machine System for Statement and Formalization of the Problems of Optimization Fuel-Energetic Complexis. 1975-1980, Syberian Energy Institute of USSR Academy of Sciencis, USSR State Committee of Science and Technology.
3. Models, methods and software for analysis of global and regional sustainable development. 1991-1994. UNESCO, RAS.
4. On the Solution of Differential Equations for the Dynamics of Mechanical Systems with Sliding Friction. 1993-1995, Russian Faund of Fundamentall Researches.
5. Stability and other dynamical properties of Logical Dynamical Systems Russian Faund of Fundamentall Researches, 1996.

*Monographs:*

1. Comparison Method in Mathematical System Theory, Novosibirsk, Science, 1980.
2. Algorithms of Derivation of Theorems for Vector Lyapunov Function Method, Novosibirsk, Science, 1981.
3. Vector Lyapunov Function Method in Stability Theory, Moscow Science, 1987; World Federation Publisher Company USA 1996.
4. Modeling of Social Economic Regional Systems, Novosibirsk, Science, 1989.
5. Vector Lyapunov Functions and Stability Analysis of Nonlinear Systems, Dordrecht/Boston/London, Kluwer Academic Publishers, 1991.