A1 Curriculum Vitae

Vitalii V. Akimenko

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(Who's who in the world /2002)

1. First name\surname\family name: Vitalii Volodymyrovich Akimenko.
2. Present residence (home): 02218 Ukraine Kyiv, Rajduzhna 55/80.
3. Birth: September 15, 1965, Severodonetsk, Lugansk region, Ukraine.
4. Nationality – Ukrainian.
5. Nationality of birth - Ukrainian.
6. Married (1993).
7. Children : sons (1994, 2005 y. of b.).

A2   Scientific Formation

8. Diplomas & certificates :

♦ **Professor :** from decision of Attestation Collegiums of Ministry of Education and Sciences of Ukraine, Kiev, 2002. Professor by Chair Informatics (Computer Sciences).

♦ **Doctor en Science (Prof. D.)** : from decision of presidium of Supreme attestation committee of Ukraine, based on the public presentation of dissertation in the Institute of Space Research, Kiev, 2001. Speciality : System Analysis and Theory of Optimal Solution. Thesis title: "Models and systems of analysis and forecasting of an technogenic pollution of atmosphere boundary layer".

♦ **Diploma and award** of Nat.Ac. of Sc. of Ukraine for young scientists 2000 in informatics.

♦ **Docent (Senior Lecturer)** : from Scientific Soviet of East-Ukrainian State University, 1997.

♦ **Candidate en Science(Ph.D.)**: from Moscow State University, 1991. Speciality : mathematical physics. Thesis title: "Some Inverse Problems in Mathematical Modelling of Technological Processes".

♦ **Diploma (M.S.)** : from Moscow State University, 1988. Speciality : physics. Thesis title : "Calculation of Thermo -Elastic-Plastic Strength Fields in Bi-Metals".

9. Language possibility: Speaking, writing, reading in Russian, Ukrainian, English - fluently, French, Nippon - with dictionary.

A3   Research Activities

10. Occupied positions :

♦ **Head** of work group of Education and Science Ministry of Ukraine for development of branch standards in high education of Ukraine in direction Informatics, Kyiv, Ukraine, 2008 to present.

♦ **Professor, Senior scientist:** Chair of System Analyses and Decision Make Theory of National Taras Shevchenko University of Kyiv, Ukraine, 2003 to present.

♦ **Chief of chair "Informatics", Professor**: European university of finance, information systems, management and business (private), Kyiv , Ukraine, 2002 – 2003.

♦ **Chief of chair "Informatics", Professor**: EastUkrainian National University, Lugansk, Ukraine, 2001 – 2002.

♦ **Chief of chair "Informatics", Senior Lecturer**: EastUkrainian National University, Lugansk, Ukraine, 2000 – 2001.

♦ **Dean deputy, Senior Lecturer**: EastUkrainian State University, Lugansk, Ukraine, 1999 – 2000.

♦ **Senior Lecturer**: EastUkrainian State University, Lugansk, Ukraine, 1995 – 2000.

♦ **Lecturer**: EastUkrainian State University, Lugansk, Ukraine, 1993 - 1995.

♦ **Assistant** : EastUkrainian State University, Lugansk, 1992-1993.

11. Scientific adviser of

♦ **Yefimenko A.A.** Ph.D. in technical sciences, specialty "System Analysis and Theory of Optimal Solution". Taras Shevchenko National University of Kyiv, Faculty of Cybernetics, 2013.

♦ **Mitrohin S.A.** Ph.D. in technical sciences, specialty "System Analysis and Theory of Optimal Solution". Taras Shevchenko National University of Kyiv, Faculty of Cybernetics, 2011.

♦ **Trofimchuk O.Yu.** Ph.D. in physical-mathematical sciences, specialty "System Analysis and Theory of Optimal Solution". Taras Shevchenko National University of Kyiv, Faculty of Cybernetics, 2009.

♦ **Sugonyak I.I.** Ph.D. in technical sciences, specialty "System Analysis and Theory of Optimal Solution". Taras Shevchenko National University of Kyiv, Faculty of Cybernetics, 2008.

12. List of main publications:

1) Akimenko V.V., Zahorodnii Yu.V., Boyko A.L. Identification of parameters of evolutionary model of monocyclic cells aggregation with the hop plants example, Computers and mathematics with application, (2013).

2) Akimenko V.V., Yefimenko A.A. Resolving of the 2^N - Lotka - Volterra system of spliting logistical model for the competition problem, Chaotic modeling and simulation, 4 (2012) 651-661.

3) Akimenko V.V., Yefimenko A.A. Model of optimum control of founds and com-

petition ability for information-communication's company, Cybernetics and Systems Analysis, V.48, 5 (2012) 722-735.

4) Akimenko V.V., Yefimenko A.A. Numerical Method for Solving the Diffusive Lotke−Volterra Model with Discontinuous Coefficients for the Problem of Companies Competition, Journal of automation and information sciences, V.44, 4 (2012) 71-80.

5) Akimenko V.V., Zahorodnii Yu.V. Modeling of dynamics of monocycle cells aggregation, Cybernetics and systems analysis, V.47, 1 (2011) 29-43.

6) Akimenko V.V., Zahorodnii Yu.V., Romanenko V.V. The optimum control problem of monocycle biological cells aggregation, Journal of automation and information sciences, V.42, 9 (2010) 42-52.

7) Akimenko V.V., Mitrohin S.A. The optimum control modeling by the nonlinear filtration of land water logging process, Journal of automation and information sciences, v.42, 8 (2010), 65-82.

8) Branch National Standard of High Education of Ukraine. Educational Professional Characteristics for Bachelor in direction of study "Informatics" /Head of work group Akimenko V.V. Order №880 of Ministry of Education and Sciences of Ukraine from 16.09.2010 (in Ukrainian). – 32p.

9) Branch National Standard of High Education of Ukraine. Educational Professional Program for Bachelor in direction of study"Informatics" /Head of work group Akimenko V.V. Order №880 of Ministry of Education and Sciences of Ukraine from 16.09.2010 (in Ukrainian). – 93p.

10) Akimenko V.V., Nakonechny O.G., Trofimchuk O.,Yr. Modeling of convection - diffusions processes on basis of multidimensional integro- differential equation with degenerated parabolicity, Cybernetics and systems analysis, v.45, 2 (2009), 232-244.

11) Akimenko V.V., Sugonyak I.I. A model of optimal control over a nonlinear multidimensional innovation diffusion process, Cybernetics and Systems Analysis, V.44, 4 (2008), 564-574.

12) Akimenko V.V., Sugonyak I.I. A model of optimal control over a nonlinear multidimensional innovation diffusion process, Cybernetics and Systems Analysis, V.44, 4 (2008), 564-574.

13) Akimenko V.V., Nakonechny O.G., Trofimchuk O.Yu. The model of optimum control for the system of integral-differential equations with degenerate parabolicity, Cybernetics and system analyses, v.43, 6 (2007) 90-102.

14) Akimenko V.V., Nakonechny A.G., Voloshuk S.D. Scenarios of optimum transregional migration process control in conditions of social risks, Cybernetics and systems analysis, v.43, 1 (2007) 116-133.

15) Akimenko V.V., Nakonechny A.G., Sugonyak I.I. Modeling of optimum control processes in the conditions of uncertainty in the economical systems with hierarchy, Journal of automation and information sciences, v.39, 2 (2007) 62-72.

16) Akimenko V.V., Nakonechny O.G. Optimum control models for transregional migration process meaning social risks, Cybernetics and systems analysis, v.42, 3 (2006) 107-122.

17) Akimenko V.V., Cheremnykh O.K. Modeling of vortical flows on a background of 2-dim convective thermo-mass-exchange process, Journal of automation and information sciences, v.36, 3 (2004) 64-80.

18) Akimenko V.V. Modelling of two-dimensional transport processes by using of non-linear monotonous second order schemes, Cybernetics and systems analysis, v.39, 6 (2003) 839-853.

19) Akimenko V.V. The mathematical model of atmospheric air pollution management in the system of regional monitoring centres, Journal of automation and information sciences, v.33, 2, (2001) 137-151.

20) Akimenko V.V. Computer administrative decision support system in conditions of the fuzzy information for systems of atmosphere ecological monitoring, Cybernetics and systems analysis, v.36, 5 (2000) 763-775.

21) Akimenko V.V., Nonlinear monotone smoothing of an implicit difference scheme for parabolic equation, Journal of automation and information sciences, , v.32, 9 (2000) 75–81.

22) Akimenko V.V., On application of nonlinear monotone high order approximation schemes in the atmosphere pollution modeling problem, Journal of automation and information sciences, v.31, 9 (1999) 76–85.

23) Akimenko V.V. The maximum principle and non-linear monotone schemes for parabolic equations, Computational mathematics and mathematical physics, v.39, 4 (1999) 590-600.

24) Akimenko V.V. Monotone high-order schemes for transport equations, Computational mathematics and mathematical physics, v.39, 5 (1999) 805-816.

25) Akimenko V.V. Mathematical modelling of ecological stability of a region's boundary atmosphere layer, Lugansk, East- Ukrainian State University publ., 1998. The questions of mathematical modelling of dynamics of a atmosphere boundary layer and modelling of process of atmosphere pollution distribution in local and regional scales are considered. For creating "physically" - correct numerical decision of the high order of accuracy, the theory non-linear theory of monotone numerical schemes for the equations of parabolic and hyperbolic types is developed. Numerical methods of the decision of the hydro-thermodynamics equation system for a boundary layer is created. Structures of integrated information systems of processing of the meteorological information and modelling of process of distribution of an impurity from stationary industrial sources in local (for city) and regional scales are described. Data of the comparative analysis of numerical schemes for various models with various types of stability and for region scales are submitted. Book is recommended for the experts, working in the field of mathematical modelling in hydrodynamic processes, ecology, development of information systems for monitoring.

26) Akimenko V.V. On quadrature and cubature formulas for a class of multiple singular integrals, Ukrainian mathematical journal, v.49, 12 (1997) 1891-1898.

27) Akimenko V.V., Glasko V.B., Kal'ner V.D., Kal'ner Yu.V., Tikhonov A.N. Control of cooling during hardening taking into account the effect of stresses on phase transformations, Journal of engineering physics, v.61, 5 (1991) 1425-1429.

28) Tikhonov A.N., Akimenko V.V., Kal'ner V.D., Glasko V.B., Kal'ner Yu.V., Kulik N.I. Planning a physical experiment on determination of the parameters of a material by using mathematical methods, Journal of engineering physics, v.61, 2 (1991) 941-946.

29) Tikhonov A.N., Kal'ner V.D., Shklyarov I.N., Glasko V.B., Kulik N.I., Akimenko V.V. Effect of high-temperature heating of bimetallic steel billets, Journal of engineering physics, v.58, 3 (1990) 281-289.

30) Tikhonov A.N., Kal'ner V.D., Glasko V.B., Kulik N.I., Akimenko V.V. Optimization of heating bimetallic steel stock to high temperatures, Metal science and heat treatment, v.32, 2 (1990) 105-112.

13. Participation in the recent international conferences and workshops (posters):

31) Akimenko V.V., Zahorodnii Yu.V. Evolutionary age-structured cell dynamics models for plant systems. SB6.0: 6th International Meeting on Synthetic Biology, 2013, Imperial College, London, UK.

32) Akimenko V.V., Zahorodnii Yu.V. The parameter estimation and optimal control problems for the monocyclic and polycyclic age-structured cell aggregation models: analytical and numerical approaches. Oxford Conference on Challenges in Applied Mathematics 2013: University of Oxford, UK.

33) Akimenko V.V., Zahorodnii Yu.V. Evolutionary age-structured cells dynamics models. International Conference on Bioinformatics and Computational Biology - BIOCOMP 2012. Varna, Bulgaria: University of Plovdiv.

34) Akimenko V.V., Yefimenko A.A. Optimal control problem for splitting reaction diffusion multicomponents model with breaking up parameters. Workshop on Stochastic Modelling of Reaction-Diffusion Processes In Biology 2012: Oxford University, UK.

35) Akimenko V.V., Zahorodnii Yu.V. The Problem of Optimal Control for Evolutionary Age-Structured Cells Models. Workshop Design, Optimization and Control In Systems And Synthetic Biology 2012. INRIA, Paris, France.

36) Akimenko V.V., Zahorodnii Yu.V. The Problems of Parameters Identification and Optimal Control for the Monocycle Cells Aggregation Model. International Conference on Mathematical Methods and Models in Biosciences BIOMATH 2012. Sofia, Bulgaria: Institute of Mathematics and Informatics.

37) Akimenko V.V., Zagorodniy Yu.V. Monocycle cells growth process: modeling, identification of parameters and operating. RoSBNet Workshop, Oxford: Oxford University 2011.

A4   Teaching experience

16. Courses: "Data Mining", "Projects of Knowledge Systems and Machine Learning", "System Analysis and Modelling of Programming Systems", "Optimisation Models of Social-Economical Processes", "Mathematical Physics Equations" [involves "Partial Differential and Integral Eq." - theory, numerical methods and applications, "Regularisation Theory in Applications"], "Mathematical Modelling in The Engineering Calculations" [inv. "Optimisation Methods", " Statistical Treatment of Experimental Data", "Numerical Methods for Differential Eq.", etc.], "Special Mathematical Analyses And Matrix Theory", {"Programming", "Numerical Methods", "Programming Languages" [FORTRAN, Turbo Pascal, Assembler, C++]}, "Decision support systems and methods", "Theory of probabilities and mathematical statistics", "Theory of systems and system analysis".

A5   Recommendation letters from persons

1) Anatoliy V. Anisimov – Doctor en Science, Professor, Dean of Faculty of Cybernetics, Taras Scevchenko National University of Kyiv. E-m.: ava@unicyb.kiev.ua

2) Mykola M. Glybovets - Doctor en Science, Professor, Dean of Faculty of Informatics, National University of Kyiv-Mohyla Academy. E-m.: glib@ukma.kiev.ua

3) Oleksii M. Novikov - Doctor en Science, Professor, Director of Institute of Physics and Technology of National Technical University of Ukraine 'Kyiv Polytechnic Institute'. E-m.: novi@ptf.ntu-kpi.kiev.ua

RECOMMENDATION
for VITALII VLADIMIROVICH AKIMENKO,
Doctor en Science, Professor of Taras Shevchenko National University of Kyiv.

Vitalii Akimenko works on the Faculty of Cybernetics from 2003 y. The fields of his scientific interest are mathematical physics and systems analysis of complex processes in the biology, ecology, physics, and demography. Due to fundamental education from Moscow State University he applied successfully both mathematical analytical and computational numerical methods for investigate the theoretical property of solutions and theoretical properties of numerical schemes for resolving an applied problems. In the recent 10 years he developed cybernetics methods and algorithms for resolve some theoretical and applied problems of parameters identification, operating and decision making for development of intelligence systems in the fields of applied biology (growth of monocycle cells aggregation), demography (dynamics of work migration process), economics (competition of innovations), ecology (air pollution dynamics). The activities belongs to the actual and priority directions of modern scientific researches in Ukraine.

For the resent time Vitalii Akimenko take part in the work of 2 Specialized Scientific Soviets of our Faculty for considered and treated the Ph.D. and Doc.D dissertations in differ cybernetic fields, worked as a member of editor board of faculty scientific Journal, worked as a head of work group of Education and Science Ministry of Ukraine for development of branch standards in high education of Ukraine in direction Informatics.

Allowing a high level of the scientific outcomes, obtained by the scientist, good work in the educating and scientific life of our faculty, I estimate Vitalii V.Akimenko as a high level researcher and professor with grate perspective.

Doctor en science, Professor,
Dean of Faculty of Cybernetics   Anatolii V. Anisimov
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RECOMMENDATION LETTER

Vitalii Akimenko - Doctor of Sciences, Professor of chair System analysis, Faculty of Cybernetics, Taras Shevchenko National University of Kyiv.

I have acquainted with scientific-research work of Vitalii Akimenko in 2005, when he has presented on a seminar of National University of Kyiv-Mohyla Academy new results in the modelling of demographical processes and the model of apply system of decision making support by operating of the work migration process. This results were interesting for our University and we began to connect with Vitalii in the differ branches of science deals with modelling of complex evaluating systems.

I know about professional scientific results of Vitalii Akimenko deals with competition models of innovation diffusion, evolutionary and operating models of the nonlinear filtration of land water logging process, evolutionary models of cells aggregation dynamics, identification and operating models of plant growth. All works have a high scientific level and contain as a theoretical so applied results, being interesting for a specialists-researchers in the fields of system analysis, biomathematics, mathematical and computational physics.

Since 2007 I worked together with Vitalii in the work group of Education and Science Ministry of Ukraine for creating of educational branch standard of Ukraine for bachelors in Informatics. This work had been successfully finished in 2010, was stated by Education and Science Ministry of Ukraine and got high estimations from specialists in education fields and IT companies.

As Vitalii Akimenko shown a high professional level and high work activity, I think he is perspective researcher. I recommend him on a senior scientist or professor positions in the field of system analysis, mathematical biology, mathematical and computational physics.

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Dean of Faculty of Informatics,
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2 Skovorody vul.,
Kyiv 04655, Ukraine

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