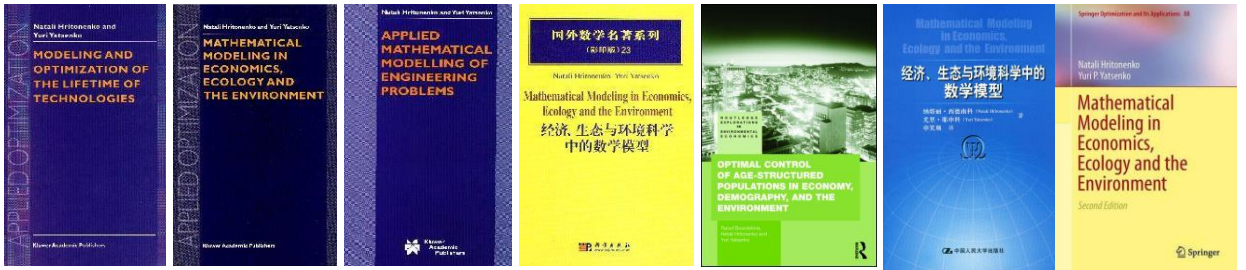


Dr. Natalia Hritonenko – Research

HIGHLIGHTS

- **New essential results** in mathematical modeling, optimal control theory, theory and applications of integral and differential equations, theory of discrete and continuous dynamic systems
- **Interdisciplinary research** in mathematical economics, climate change, biomathematics, environmental protection, population dynamics, environmental economics, operations research, management, demography, sustainable development, energy economics, agriculture, forestry
- **Publications:** seven monographs, some of them are used as textbooks or translated to other languages; more than 130 papers on research results and education



- **Conferences:** invited/ plenary speaker at international interdisciplinary conferences and university seminars; member of conference organizing committees; chair and organizer of sessions
- **Collaborative** international interdisciplinary research
- **Editorial activity:** Member of the editorial board of *even* international interdisciplinary journals; editor of special issues and conference proceedings; reviewer for more than 60 journals and three textbook publishers
- **Panelist** of NSF-DMS Control Theory/Optimization



INTERNATIONAL INTERDISCIPLINARY COLLABORATION:

- **Belgium:** Department of Economics, Universite Catholique de Louvain
 - economic-environmental models with endogenous technological change, energy restrictions, scarcity of natural resources, environmental CO₂ quotas; optimal control problems;
 - modeling of optimal investments into environmental abatement and adaptation for long-term climate policies.
- **Spain:** Department of Economics, Universitat de Girona
 - modeling and optimal control in size-structured populations;
 - optimal vintage investment and disinvestment of a firm;
 - sustainable management of forests with benefits from carbon sequestration and timber production;
 - impact of climate changes and natural disturbances on forest development;
 - sustainable management of soil and landlord-tenant relationships
- **France:** Centre de la Vieille Charite, Marseille-Aix University
 - modeling and optimal control in age-structured populations;
 - vintage capital models with endogenous technological change, labor and energy restrictions, and environmental quotas;
 - modeling of rational investments in research and development in modern society.
- **Ukraine:** College of Cybernetics, Kiev State University
 - estimating the impact of IT on production and resource consumption with sustainable development control objectives;
 - modeling groundwater / surface flows and transport of contaminants.
- **Kazakhstan:** Department of Information Systems, Eurasian National University
 - modelling of IT replacement and sustainable economic-technological development.
- **Greece:** Department of Economics, Athens University of Economics and Business
 - service life and replacement of vintage equipment under embodied technical change.
- **Australia:** Centre for Industrial and Applied Mathematics, University of South Australia
 - minimizing greenhouse emissions through selecting the most judicious mix of technologies
- **Japan:** Department of Mathematics, Kanazawa University
 - modeling and investigation of size-dependent populations with space diffusion
- **Finland:** The Finnish Forest Research Institute
 - optimal control of a nonlinear model of fish population with delays (North Sea herring).
- **Jamaica:** Department of Mathematics and Computer Sciences, University of the West Indies
 - analysis of age-species population models with stochastic parameters.
- **The Netherlands:** Faculty of Economics and Business, University of Groningen
 - theoretical analysis of discrete optimization algorithms.



VISITING PROFESSOR / INVITED INTERNATIONAL VISITS:

- European University at St. Petersburg, **Russia**, October 2015; supported by Center for Operations Research & Econometrics at Université catholique de Louvain and European University at St. Petersburg
- Institute of Science and Engineering, Kanazawa University, Kanazawa, **Japan**, May 2015; supported by Kanazawa University
- Belarussian-Russian University, Gomel, **Belarus**, March 2015, supported by Belarussian-Russian University
- Université catholique de Louvain, Brussels, **Belgium**, June 2014, May 2012, May 2011, July 2010, July 2009, Dec. 2008, Nov. 2006; July 2004; supported by Université catholique de Louvain and Center for Operations Research & Econometrics
- University of Oxford, **UK**, June 2014
- University of Girona, Girona, **Spain**, June 2013, June 2012, May 2008, July 2006; supported by the Catalan Agència de Gestió d'Ajuts Universitaris i de Recerca- AGAUR, Grup d' Investigació en Economia Pública
- Centre de la Vieille Charite, Marseille, **France**, June 2014, May 2012; sup. by Marseille-Aix University
- University of Cambridge, Isaac Newton Institute for Mathematical Sciences, **UK**, Dec. 2010, supported by the Isaac Newton Institute for Mathematical Sciences
- University of Strasbourg, Strasbourg, **France**, Nov. 2008; supported by University of Strasbourg
- University of Milan, Milan, **Italy**, September 2008; supported by Department of Economics, Business and Statistics, University of Milan
- Eurasian National University, Astana, **Kazakhstan**, May 2008; supported by NATO grant 982209
- University of South Australia, Adelaide, **Australia**, August 2006; supported by Visiting Research Grant of University of South Australia
- Kiev State University, Kiev, **Ukraine**, June 2006; August 2007; supported by NATO grant 982209
- European University Institute, Florence, **Italy**, Sep. 2005; supported by the European University Institute

CONFERENCES, WORKSHOPS, SEMINARS (recent, selected):

- The Fourth International Workshop on Natural Resources, Environment and Economic Growth, the European University at St. Petersburg, Russia, October 1-2, 2015
- The MPE2013+ Workshop on Natural Resources, Center for Discrete Mathematics and Theoretical Computer Science (DIMACS) Rutgers, Howard University, Washington, DC, June 3 - 6, 2015
- The 38th Annual Texas Partial Differential Equations Conference, University of Houston, Houston, TX, March 28-29, 2015
- Joint Mathematics Meeting, San Antonio, TX, January 10-13, 2015
- 5th Workshop on Game Theory in Energy, Resources and Environment, GERAD - HEC Montréal, Canada, May 26-27, 2014
- QEM/NSF HBCU-UP workshop "Creating and Maintaining Rigorous Middle/ High School STEM Teacher Preparation Programs at HBCU-UP Grantee Institutions", Baltimore, August 14-15, 2014
- the 8th International Conference on Modelling in Industrial Maintenance and Reliability to be held at St Catherine's College, Oxford, UK, July 10 – 12, 2014
- Workshop "Modeling problems related to our environment", American Institute of Mathematics (AIM), Palo Alto, California January 14-18, 2013
- The Fourth Workshop on Game Theory in Energy, Resources and Environment, Montreal, Canada, November 29-30, 2012
- University of Arlington, Texas, September 14, 2012
- The 12th Viennese Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, Vienna, Austria, May 30-June 2, 2012

- NIMBioS Investigative Workshop on Disturbance Regimes and Climate-Carbon Feedback, Knoxville, TN, February 13-15, 2012
- The 118-th Meeting of American Mathematical Society, Boston, MA USA, January 4-7, 2012
- Association of American Colleges & Universities (AAC&U) conference on general education, New Orleans, February, 23-25, 2012
- The 3rd International Conference on Mathematical Modeling and Analysis of Populations in Biological Systems, San Antonio, Texas, October 7-9, 2011
- Conference on Sustainable Growth, Technological Progress and the Environment, Louvain-la-Neuve, Belgium, May 19-21, 2011
- The 34th Annual Texas Partial Differential Equations Conference, Edinburg, TX, March 26-27, 11
- The 117-th Meeting of American Mathematical Society, New Orleans, LA USA, January 6-9, 2011
- Workshop CLPW04 on Uncertainty in Climate Prediction: Models, Methods and Decision Support, Isaac Newton Institute for Mathematical Sciences- University of Cambridge, UK, Dec.6-10, 2010
- Oregon Maseeh Colloquium Series, Portland State University, May 2010
- The Institute for Operations Research and the Management Sciences (INFORMS), Annual Meeting, Austin, November 7-10, 2010
- Workshop: Connections for Women: Inverse Problems and Applications, Mathematical Science Research Institute, University of Berkeley, Berkeley, CA, August 19 - 20, 2010
- New Directions Short Course: New Mathematical Models in Economics and Finance IMA, Institute for Mathematics and its Applications, University of Minnesota, July 06-18, 2010
- The 33rd Annual Texas Partial Differential Equations Conference, Austin, TX, Apr.10-11, 2010
- The 23rd European Conference on Operational Research, Bonn, Germany, July 2009
- Workshop on Stochastic and deterministic spatial modeling in pop. dynamics, Palo Alto, CA, May 2009

CONFERENCE SPECIAL SESSIONS, CHAIR (selected):

- *Successes and Challenges in Teaching Mathematics* **SS-46A** with Dr. Ellina Grigorieva at the 2015 Joint Mathematics Meetings, San Antonio, TX, January 10-13, 2015
- *"Optimal Control in Applied Mathematical Modeling-I"* **SS-45**, with Dr. Yuri Yatsenko, January 4, at the 2012 Joint Mathematics Meetings, Boston, MA January 4-7, 2012
- *"Optimal Control in Applied Mathematical Modeling-II"* **SS-45**, with Dr. Yuri Yatsenko, January 5, at the 2012 Joint Mathematics Meetings being held in Boston, MA January 4-7, 2012
- *Dynamic population control models- I*, with Dr. Noel Bonneuil , the 12th Viennese Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, Vienna, Austria, May 30-June 2, 2011
- *Dynamic population control models- II*, with Dr. Noel Bonneuil , the 12th Viennese Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, Vienna, Austria, May 30-June 2, 2011
- *Economic growth models with heterogeneity- I*, with Dr. Raouf Boucekkine, the 12th Viennese Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, Vienna, Austria, May 30-June 2, 2011
- *Economic growth models with heterogeneity- II*, with Dr. Raouf Boucekkine, the 12th Viennese Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, Vienna, Austria, May 30-June 2, 2011
- *Mathematical Modeling in Environmental Economics- I*, with Dr. Yuri Yatsenko at the Joint Mathematics Meetings being held in New Orleans, LA, January 6-9, 2011
- *Mathematical Modeling in Environmental Economics- II*, with Dr. Yuri Yatsenko, at the Joint Mathematics Meetings being held in New Orleans, LA, January 6-9, 2011

EDITORIAL ACTIVITY

Member of the Editorial Boards of

- *Mathematical Populations Studies*
- *Journal of Biological Systems*
- *Applications and Applied Mathematics (AAM): An International Journal*
- *International Journal of Ecology & Development*
- *Journal of Analysis*
- *Journal of Advanced Research in Applied Mathematics*
- *International Journal of Ecological Economics and Statistics*
- *Journal of Computational and Applied Mathematics*
- *Journal of Applied Sciences*
- *Bulletin of Statistics & Economics*
- *Involve, a journal of mathematics*

Editor of special issues

- Analytic Modeling in Biology and Medicine, *Journal of Biological Systems*, Vol. 22, No. 2, 2014
- Optimal control, controllability and stabilizability, *Mathematical Modelling of Natural Phenomena*, 9 (4), 2014
- Age and Size- Structured Population Dynamics, *Mathematics Population Studies*, 15(2), 2008
- Modelling of Evolving Systems in Economics and Life Sciences, *International Journal of Ecology & Development*, Winter 2007
- Modelling of Evolving Systems in Ecology and Economics, *International Journal of Ecology & Development*, Fall 2006
- *Proceedings of the 2005 International Conference on Scientific Computing*, World Congress on Applied Computing, Las Vegas, June, 2005

AWARDS and GRANTS (selected):

- **NSF DMS:** Integral Equations with Delay: Optimal Control and Applications, NSF DMS 1009197, August 1, 2010-July 31, 2012-PI
- **NSF-DBI: UBM-Institutional:** Integrated Undergraduate Research Experiences in Biological and Mathematical Sciences, NSF-DBI-1029401, September 1, 2010-August 31, 2015:
- **NATO Collaborative Linkage Grant** "Optimal Replacement of Information Technologies and Sustainable Development (in Kazakhstan, Ukraine, and USA)", May 2006-May 2008, Ref 982209: co-PI
- **NSF-SMET:** Science, Technology, Engineering, and Mathematics Enhancement Program, 2003-2010: participant
- **Gates-Marshall Redesign Project:** collaboration of PVAMU with Royal High School Faculty,
- **NSF-MAA PMET** mini-grant, NSF Grant DUE-0230847, Jan. 2005-December 2006: PI
- **Academy Fellowship**, Texas A&M Research Foundation; The Texas A&M university system's regents' initiative for excellence in education fellowship, August-December 2004: PI
- **NSF/AWM Travel Grant** to present a talk at the 21st IFIP TC 7 conference on system modeling and optimization (Sophia Antipolis, France), July 2003: PI
- **Research Enhancement Program** at Prairie View A&M University "Preparation of Manuscript for Applied Mathematical Modeling of Engineering Problems", November 2002 to July 2003: PI
- **Marques Who's Who in Science and Engineering**, 10th Ed., 9th Ed.; Who's Who in American Education, 8th Ed.; Who's Who in America, 63rd Ed., 62nd Ed.; Who's Who in the World in, 26th Ed., 25th Anniversary Ed.; Who's Who of American Women, 27th Ed.; etc.
- Excellence in Teaching Award in 2008, 2011, 2012, 2014

LIST OF PUBLICATIONS

BOOKS:

1. N.Hritonenko and Yu.Yatsenko, *Mathematical Modeling in Economics, Ecology and the Environment*, 2nd Edition, Springer, New York/Berlin, 2013, 296p.
2. N.Hritonenko and Yu.Yatsenko, *Mathematical Modeling in Economics, Ecology and the Environment*, Renmin University of China Press, Beijing: China, 2011, 300 p. (in Chinese)
3. R. Boucekkine, N. Hritonenko, Yu. Yatsenko, *Optimal control of age-structured populations in economy, demography, and the environment*, Routledge (Taylor & Francis, UK), Series "Environmental Economics", 2010, 295 p
4. N.Hritonenko, Yu.Yatsenko, *Mathematical modeling in economics, ecology and the environment*, Series "Mathematical Masterpieces Abroad", Science Press, China, 2006, vol. 23.
5. N.Hritonenko, Yu.Yatsenko, *Applied mathematical modelling of engineering problems*, Kluwer Academic Publishers, Massachusetts, 2003, 308 p.
6. N.Hritonenko, Yu.Yatsenko, *Mathematical modeling in economics, ecology and the environment*, Kluwer Academic Publishers, Dordrecht, 1999, 210 p.
7. N.Hritonenko, Yu.Yatsenko, *Modeling and optimization of the lifetime of technologies*, Kluwer Academic Publishers, Boston/London/Dordrecht, 1996, 290 p.

RESEARCH PAPERS:

8. Yu.Yatsenko, N.Hritonenko, Two-cycle optimization in replacement models with non-exponential technological improvement, accepted to *the IMA Journal of Management Mathematics*, 2015
9. Yu.Yatsenko, N.Hritonenko, Algorithms for asset replacement under limited technological forecast, *International Journal of Production Economics* Vol. 160 (2015), 26-33
10. N.Hritonenko, Yu.Yatsenko, and S.Boranbayev. Environmentally sustainable industrial modernization and resource consumption: Is the Hotelling's rule too steep?, *Applied Mathematical Modelling*, 39(2015), 4365-4377
11. Yu. Yatsenko, N. Hritonenko, T. Bréchet, Modeling of environmental adaptation versus pollution mitigation, *Mathematical Modelling of Natural Phenomena* 9:4(2014), 227-237
12. N.Hritonenko, Yu.Yatsenko, R.Goetz, A. Xabadia Modeling of a landlord–tenant agricultural system in the environmental context, *Natural Resource Modeling*, Vol. 27-4 (2014), 467-491
13. R. Boucekkine, N.Hritonenko, Yu.Yatsenko, Optimal investment in heterogeneous capital and technology under restricted natural resource, *Journal of Optimization Theory and Applications* 163 (2014), 310-331
14. R. Boucekkine, N.Hritonenko and Yu.Yatsenko, Health, work intensity, and technological innovations, *Journal of Biological Systems*, Vol. 22, No. 2 (2014), 219–233
15. N.Hritonenko, Yu.Yatsenko, Modeling of environmental adaptation: amenity vs productivity and modernization, *Climate Change Economics* 4:2(2013), 1-24.
16. Th. Bréchet, N.Hritonenko, Yu.Yatsenko, Adaptation and mitigation in long-term climate policy, *Environmental and Resource Economics*, 55(2013), 217-243
17. R.Goetz, N.Hritonenko, R.Mur, A. Xabadia, and Yu.Yatsenko, Forest carbon sequestration as a policy option under climate change, *EM: Magazine for Environmental Managers*, Air & Waste Management Association, May 2013, 34–37
18. R. Boucekkine, N.Hritonenko, Yu.Yatsenko, On the optimal control of the vintage capital growth model with endogenous labor supply, *Mathematical Economics Letters*, 1(2013), 3-7.
19. N.Hritonenko, Yu.Yatsenko, Solvability of integral equations with endogenous delays, *Acta Applicanda Mathematica*, 128(2013) 49-66
20. R.Goetz, N.Hritonenko, A. Xabadia, and Yu.Yatsenko, Forest management for timber and carbon sequestration in the presence of climate change: The case of Pinus Sylvestris, *Ecological Economics*, 88 (2013) 86–96
21. N.Hritonenko, Yu.Yatsenko, Fleet replacement under technological shocks, *Annals of Operations Research*, 196 (2012), 311–331.

22. N.Hritonenko, Yu.Yatsenko, Bang-bang, impulse, and sustainable harvesting in age-structured populations, *Journal of Biological Systems*, 20(2012), 133-153.
23. N.Hritonenko, Yu.Yatsenko, R.Goetz, and A. Xabadia, Optimal harvesting in forestry: steady-state analysis and climate change impact, *Journal of Biological Dynamics*, 7(2012), 41-58
24. N.Hritonenko and Yu.Yatsenko, Energy substitutability and modernization of energy-consuming technologies, *Energy Economics*, 34:5 (2012), 1548-1556
25. N.Hritonenko, Yu.Yatsenko, Technological modernization under resource scarcity, *Optimal Control, Applications and Methods*, 33: 3 (2012), 249–262
26. N.Hritonenko, Yu.Yatsenko, R.Goetz, and A. Xabadia, Sustainable dynamics of size-structured forest under climate change, *Applied Mathematics Letters*, 25 (2012), 1439-1443
27. R. Boucekine, N.Hritonenko and Yu.Yatsenko, Scarcity, regulation and endogenous technical progress, *Journal of Mathematical Economics*, 47(2011), 186-199
28. Yu.Yatsenko and N.Hritonenko, 2011. Economic life replacement under improving technology, *International Journal of Production Economics*, 133(2011), 596-602
29. N.Hritonenko and Yu.Yatsenko, Technological innovations, economic renovation, and anticipation effects, *Journal of Mathematical Economics*, 46 (2010) 1064–1078.
30. N.Hritonenko and Yu.Yatsenko, Age-structured PDEs in economics, ecology, and demography: Optimal control and sustainability, *Mathematical Population Studies*: 17 (2010), 191-214.
31. R.U. Goetz, N.Hritonenko, R.Mur, A.Xabadia, Yu.Yatsenko, Forest management and carbon sequestration in size-structured forests: The case of Pinus Sylvestris in Spain, *Forest Science*, 56-3 (2010), 242-256.
32. Yu.Yatsenko, N.Hritonenko, Discrete-continuous analysis of optimal equipment replacement, *International Transactions in Operational Research*, 17 (2010), 577-593
33. N. Hritonenko, Stability analysis of Volterra integral equations with applications to life sciences, *Nonlinear Analysis*, 71(2009), 2298-2304.
34. N.Hritonenko, Yu.Yatsenko, Maintenance of age-structured populations: optimal control, state constraints, and bang-bang regime, *Journal of Biological Systems*, 4(2009), 793-816.
35. Yu.Yatsenko, N.Hritonenko, Technological breakthroughs and asset replacement, *Engineering Economist*, 54(2009), 81-100.
36. N.Hritonenko, Yu.Yatsenko, Integral equation of optimal replacement: Analysis and algorithms, *Applied Mathematical Modeling*, 33(2009), 2737-2747.
37. N.Hritonenko, Yu.Yatsenko, R.U. Goetz, A Xabadia, A bang-bang regime in optimal harvesting of size-structured populations, *Nonlinear Analysis*, 71(2009), 2331-2336.
38. Yu. Yatsenko, R. Boucekine, N. Hritonenko, On explosive dynamics in R&D-based models of endogenous growth, *Nonlinear Analysis Series A: Theory, Methods & Applications*, 71(2009), 693-700.
39. N.Hritonenko, Yu.Yatsenko, From linear to nonlinear utility in vintage capital models, *Mathematical Population Studies*, 15:4(2008), 230-248.
40. N.Hritonenko, Yu.Yatsenko, The dynamics of asset lifetime under technological change, *Operations Research Letters*, 36(2008), 565-568.
41. N.Hritonenko, Yu.Yatsenko, R.U. Goetz, A Xabadia, Maximum principle for a size- structured model of forest and carbon sequestration management, *Applied Mathematics Letters*, 21(2008), No. 10, 1090-1094.
42. R.U. Goetz, N.Hritonenko, Yu.Yatsenko, The optimal economic lifetime in presence of operating costs, technological progress, and learning, *Journal of Economics Dynamics and Control*, 32(2008), No.9, 3032-3053.
43. N.Hritonenko, Modeling of optimal investment in science and technology, *Nonlinear Analysis: Hybrid Systems*, 2(2008), No. 2, 220-230.
44. N.Hritonenko, Yu.Yatsenko, Can technological change sustain retirement in an aging population?, *Mathematical Population Studies*, 15(2008), No.2, 96-113.
45. N.Hritonenko, Yu.Yatsenko, Anticipation echoes in vintage capital models, *Mathematical and Computer Modeling*, 48(2008), 734-748.

46. Yu.Yatsenko, N.Hritonenko, Dynamics of optimal asset service life under technological change, *International Journal of Production Economics*, 114(2008), 230-238.
47. N.Hritonenko, Yu.Yatsenko, Optimal control of a vintage capital model with nonlinear utility, *Optimization*, 57(2008), No.4, 581-592.
48. Yu.Yatsenko , N.Hritonenko, Network economics and optimal replacement of age-structured IT capital, *Mathematical Methods of Operations Research*, 65(2007), No. 3, 483-497.
49. V.I. Kydin, S.I. Lyashko, N.V. Khritonenko, Yu. P. Yatsenko, Analysis of properties of linear systems by method of artificial basis matrices, *Kibernetika i Sistemnyi Analiz*, 4(2007), No. 4, 119-127 (in Russian), translation in *Cybernetics and Systems Analysis*, 43 (2007), [no. 4](#), 563-570.
50. N.Hritonenko, Yu.Yatsenko, Bifurcations in nonlinear integral models of biological systems, *International Journal of Systems Science*, 38(2007), No. 5, 389-399.
51. N.Hritonenko, Yu.Yatsenko, Optimal equipment replacement without paradoxes: a continuous analysis, *Operations Research Letters*, 35 (2007), No. 2, 245-250.
52. V.I. Kydin, S.I. Lyashko, N.V. Hritonenko, Yu. P. Yatsenko, The method of artificial basis matrices, *Reports of the National Academy of Sciences of Ukraine* 9(2007), 30-34 (in Ukrainian)
53. N.Hritonenko, S.Lyashko, Yu.Yatsenko, Replacement of information technologies and sustainable development in the Ukraine, *International Journal of Ecology and Development*, 6 (2007), 15-21.
54. N.Hritonenko, Yu.Yatsenko, Structure of optimal age-dependent harvesting in the Lotka-McKendrik population model, *Mathematical Biosciences*, 208 (2007), No. 1, 48-62.
55. N.Hritonenko, Modeling of age-structured populations, *International Journal of Ecology and Development*, 5 (2006), No F06, 20-26.
56. N.Hritonenko, Yu.Yatsenko, Creative destruction of computing systems: analysis and modeling, *Journal of Supercomputing*, 38 (2006) No 2, 143-154.
57. N.Hritonenko, Yu.Yatsenko, Concavity in a vintage capital model with nonlinear utility, *Applied Mathematics Letters*, 19 (2006), No 3, 267-272.
58. N.Hritonenko, Yu.Yatsenko, Optimization in a vintage capital model with piecewise linear cost function, *Nonlinear Analysis: Theory, Methods, and Applications*, 65 (2006) Issue 12, 2302-2310.
59. N.Hritonenko, Yu.Yatsenko, Optimization of harvesting return from age-structured population, *Journal of Bioeconomics*, 8 (2006), No 2, 167-179.
60. N.Hritonenko, Integral equations in optimal capital replacement and population control, *Dynamics of Continuous, Discrete and Impulsive Systems, Series A Mathematical Analysis*, 13B (2006), 89-101.
61. N.Hritonenko, Yu.Yatsenko, Optimization of financial and energy structure of productive capital, *IMA Journal of Management Mathematics*, 17 (2006), No. 3, 245-255.
62. N.Hritonenko, Al. Rodkina, Yu.Yatsenko, Stability analysis of stochastic Ricker population model, *Discrete Dynamics in Nature and Science*, (2006), ID 64590.
63. B.Goldengorin, S.Lyashko, Yu.Yatsenko, N.Hritonenko, The maximization of submodular functions: old and new proofs for the correctness of the dichotomy algorithm, *Journal of Computational and Applied Mathematics*, Kiev University, Kiev, Ukraine, 93(2005), No. 2, 17-28.
64. N.Hritonenko, Yu.Yatsenko, Rational financial management of capital renovation in a networked enterprise, *International Journal of Operations and Quantitative Management*, 11(2005), 3, 175-190.
65. Yu.Yatsenko, N.Hritonenko, Optimization of the lifetime of capital equipment using integral models, *International Journal of Industrial and Management Optimization*, 1 (2005), No. 4, 415-432.
66. N.Hritonenko, Yu.Yatsenko, Turnpike and optimal trajectories in integral dynamic models with endogenous delay, *Journal of Optimization Theory and Applications*, 127 (2005), No.1, 109-127.
67. N.Hritonenko, Yu.Yatsenko, Optimization of harvesting age in an integral age-dependent model of population dynamics, *Mathematical Biosciences*, 195 (2005), No 2, 154-167.
68. N.Hritonenko, Yu.Yatsenko, Maximum principle for integral dynamic models with endogenous delay, *Dynamics of Continuous, Discrete and Impulsive Systems, Series A. Mathematical Analysis*, 12(2005), No. 3-4, 469-477.

69. N.Hritonenko, Optimization analysis of a nonlinear integral model with applications to economics, *Nonlinear Studies*, 12 (2005), No.1, 59-72.
70. N.Hritonenko, Nonlinear optimal control of vintage capital lifetime and irreversible investments, *Nonlinear Analysis*, 63 (2005), 579-586.
71. N.Hritonenko, Qualitative analysis of integral dynamic model of age-structured population with intra-species competition, *Dynamic Systems & Applications*, 4 (2004), 483-487.
72. N.Hritonenko, Yu.Yatsenko, Non-smooth solutions of a nonlinear integral-functional equation with an unknown delay, *Functional Differential Equations*, 11 (2004), No.3-4, 395-405.
73. N.Hritonenko, Yu.Yatsenko, Structure of optimal trajectories in a nonlinear dynamic model with endogenous delay, *Journal of Applied Mathematics*, 5 (2004), 433-445.
74. N.Khritonenko, Yu.Yatsenko, Turnpike theorems in integral dynamical model of economic renovation, *Cybernetics and System Analysis*, 33 (1997), No.2, 259-273.
75. N.Hritonenko, Yu.Yatsenko, Integral-functional equations for optimal renovation problems, *Optimization*, 36(1996), No. 3, 249-261.
76. N.Hritonenko, Yu.Yatsenko, The optimization of the lifetime and cost of equipment under technological progress, *Journal of Automat. Inform. Sci.*, 28 (1995), No.2, 117-128.
77. Yu.Yatsenko, N.Hritonenko, Optimization in integral model of developing systems, *Optimization*, 31(1994), No. 2, 179-192.
78. N.Hritonenko, Yu.Yatsenko, *Integral Models of Developing Systems: Some Theoretical and Numerical Aspects*, Preprint 94-1 of Cybernetics Institute of Ukr.Acad. Sci., Kiev (1994), 45 p.
79. N.Hritonenko, Optimization of industrial renovation under given ecological balance, in: *Models and Algorithms for Regional Industry and Ecology Control*, Akad. Nauk USSR, Inst. Kibernetiki, (Kiev,1993), (1993), 77-82.
80. K.Semenov, N.Hritonenko, Yu.Yatsenko, Turnpike properties of the optimal periods for the service of funds, *Doklady Akad. Nauk Ukrainy.Series A*, Kiev, (1992), No.11, 76-80.
81. N.Hritonenko, Controllability of nonlinear dynamical system with respect to the Hamiltonian, *Boundary Value Problems*, Perm. Polytekh. Inst., (1991), 125-132, MR 93m:00017.
82. N.Hritonenko, V.Rakecski, Minimization of network problem with quadratic arcs by the direct supporting method, *Computer Software: Program Library BIM-M*, Akad. Nauk BSSR, Inst. Matematiki, (1991), 135-150.
83. N.Hritonenko, *Controllability of the Hamiltonian in Optimization Problems*, Ph.D. Thesis, Beloruss. Gos. Univ., Dept of Applied Mathematics, Minsk, (1990), 16 p.
84. N.Hritonenko, The controllability of the Hamiltonian in a terminal optimal control problem, *Vestnik Beloruss. Gos. Univ., Ser. I. Fiz.Mat.Mech.*, (1990), No.2, 72-74.
85. N.Hritonenko, R.Gabasov, Hamiltonian controllability in linear-quadratic optimal control problems, *Izvestiya Akad. Nauk BSSR, Ser. fiz.-mat.*, (1989), No.4, 111-122.
86. N.Hritonenko, R.Gabasov et al., The adaptive method for interval linear programming problem. Part I. Performance criteria, *Beloruss. Gos. Univ.*, (1989), 24 p., VINITI, No.958-B89.
87. N.Hritonenko, R.Gabasov et al., The adaptive method for interval linear programming problem. Part II. Algorithm, *Beloruss. Gos. Univ.*, (1989), 46 p., VINITI, No.957-B89.
88. N.Hritonenko, R.Gabasov, Hamiltonian controllability in linear-quadratic optimal control problems, *Beloruss. Gos. Univ.*, (1988), 14 p., VINITI, No.1804-B88.
89. N.Hritonenko, Hamiltonian controllability in multivariable linear-quadratic optimal control problems, *Beloruss. Gos. Univ.*, (1988), 28 p., VINITI, No.8369-B88.

PAPERS ON EDUCATION:

90. Ed. Campbell, N.Hritonenko, Integrated approach in teaching trigonometry concepts, *Teaching Journal of the ooi Academy*, 5 (2005), No 1, 121-129.
91. N.Hritonenko, Student projects in the educational process, *DELTA-K, Journal of the Mathematics Council of the Alberta Teachers' Association*, 41 (2004), No.1, 51-52.

92. N.Hritonenko, Abraham de Moivre *DELTA-K, Journal of the Mathematics Council of the Alberta Teachers' Association*, 40 (2003), No.2, 70-71.
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