

## Publications relevant to Russian-IIASA collaborations (2008-2014)

The publication list contains only publications authored by IIASA-affiliated researchers and:

1. About Russia, or
2. the IIASA author is a Russian national, or
3. the IIASA author has collaborated with a researcher based at a Russian institute

### 2014

Mosnier A, Obersteiner M, Havlik P, Schmid E, Khabarov N, Westphal M, Valin H, Frank S & Albrecht F (2014). Global food markets, trade and the cost of climate change adaptation. *Food Security*, 6(1):29-44 (February 2014).

Zhao Q, Khabarov N, Obersteiner M & Westphal M (2014). Impacts of climate change on virtual water content of crops in China. *Ecological Informatics*, 19(1):26-34 (January 2014) (Published online 14 December 2013).

### 2013

Aseev S, Besov K & Kaniovski S (2013). The problem of optimal endogenous growth with exhaustible resources revisited. In: Cuaresma J Crespo, Palokangas T & (Eds) A Tarasyev (eds), *Green Growth and Sustainable Development*. Springer Berlin Heidelberg pp.3-30.

Balkovic J, van der Velde M, Schmid E, Skalsky R, Khabarov N, Obersteiner M, Sturmer B & Xiong W (2013). Pan-European crop modelling with EPIC: Implementation, up-scaling and regional crop yield validation. *Agricultural Systems*, 120:61-75 (September 2013)(Published online 3 July 2013).

Basten S, Lutz W & Scherbov S (2013). Very long range global population scenarios to 2300 and the implications of sustained low fertility. *Demographic Research*, 28(39):1145-1166 (May 2013).

Crespo Cuaresma J, Palokangas T & Tarasyev A (Eds) (2013). *Green Growth and Sustainable Development*. Springer Berlin Heidelberg.

Davydov AA & Manh HD (2013). Singularities of the attainable set on an orientable surface with boundary. *Journal of Mathematical Sciences*, 188(3):185-196 (January 2013).

Ediev DM (2013). Decompression of period old-age mortality: When adjusted for bias, the variance in the ages at death shows compression. *Mathematical Population Studies: An International Journal of Mathematical Demography*, 20(3):137-154 (July 2013) (Published online 5 August 2013).

Ediev DM (2013). Mortality compression in period life tables hides decompression in birth cohorts in low-mortality countries. *Genus*, 69(2):53-84 (September 2013).

Ediev DM, Coleman D & Scherbov S (2013). New measures of population reproduction for an era of high migration. *Population, Space and Place*, Article in press(Published online 18

June 2013).

Elliott J, Deryng D, Mueller C, Folberth C, Khabarov N, Rosenzweig C, Wisser D, et al. (2013). Constraints and potentials of future irrigation water availability on agricultural production under climate change. *PNAS*, Article in press(Published online 16 December 2013).

Ermolieva T, Ermoliev Y, Jonas M, Obersteiner M, Wagner F, Winiwarter W (2013). Uncertainty, cost-effectiveness and environmental safety of robust carbon trading: integrated approach. *Climatic Change*, pp. 1-14. Article in Press.

Fritz S, See L, van der Velde M, Nalepa RA, Perger C, Schill C, McCallum I, Schepaschenko D, Kraxner F, Vakolyuk M, Albrecht F, Shaw B, Obersteiner M, et al. (2013). Downgrading recent estimates of land available for biofuel production. *Environmental Science & Technology*, 47(3):1688-1694 (5 February 2013) (Published online 24 December 2012).

Hochrainer-Stigler S, Timonina AV, Williges K, Pflug GC & Mechler R (2013). Modelling the economic and fiscal risks from natural disasters: Insights based on the CatSim model. Background paper prepared for the Global Assessment Report on Disaster Risk Reduction 2013, UNISDR, Geneva, Switzerland.

Kharrazi A, Rovenskaya E, Fath BD, Yarime M & Kraines S (2013). Quantifying the sustainability of economic resource networks: An ecological information-based approach. *Ecological Economics*, 90:177-186(June 2013).

Kiselev S, Romashkin R, Nelson GC, Mason-D'croz D, Palazzo A (2013). Russia's food security and climate change: Looking into the future. *Economics* 7.

Kraxner F, Nordstrom E-M, Havlik P, Gusti M, Mosnier A, Frank S, Valin H, Fritz S, Fuss S, Kindermann G, McCallum I, Khabarov N, Bottcher H, See L, Aoki K, Schmid E, Mathe L & Obersteiner M (2013). Global bioenergy scenarios - Future forest development, land-use implications, and trade-offs. *Biomass and Bioenergy*, 57:86-96 (October 2013)(Published online 2 May 2013).

Kryazhinskiy A (2013). Posterior Integration of Independent Stochastic Estimates. IIASA Interim Report IR-13-006.

Kryazhinskiy AV & Maksimov VI (2013). On combination of the processes of reconstruction and guaranteeing control. *Automation and Remote Control*, 74(8):1235-1248 (August 2013).

Kundzewicz ZW, Kanae S, Seneviratne SI, Handmer J, Nicholls N, Peduzzi P, Mechler R, Bouwer LM, Arnell N, Mach K, Muir-Wood R, Brakenridge GR, Kron W, Benito G, Honda Y, Takahashi K & Sherstyukov B (2013). Flood risk and climate change: global and regional perspectives. *Hydrological Sciences Journal*. Article in Press.

Lauri P, Kallio M, Schneider UA (2013). The future development of the use of wood in Russia and its potential impacts on the EU forest sector. *Scandinavian Journal of Forest Research*, 28 (3), pp. 291-302.

McCallum I, Franklin O, Moltchanova E, Merbold L, Schmullius C, Shvidenko A, Schepaschenko D & Fritz S (2013). Improved light and temperature responses for light-use-efficiency-based GPP models. *Biogeosciences*, 10(10):6577-6590 (17 October 2013).

Migliavacca M, Dosio A, Kloster S, Ward DS, Camia A, Houborg R, Houston Durrant T, Khabarov N, Krasovskii AA, San Miguel-Ayanz J & Cescatti A (2013). Modeling burned area

in Europe with the Community Land Model. *Journal of Geophysical Research: Biogeosciences*, 118(1):265-279 (March 2013) (Published online 18 March 2013).

Piontek F, Mueller C, Pugh TAM, Clark DB, Deryng D, Elliott J, Folberth C, Frieler K, Friend AD, Khabarov N, Mengel M, Ostberg S, Schewe J, Warszawski L, Wisser D, Schellnhuber HJ, et al. (2013). Multisectoral climate impact hotspots in a warming world. *PNAS*, Article in press(Published online 16 December 2013).

Roelfsema M, Elzen M, Höhne N, Hof AF, Braun N, Fekete H, Böttcher H, Brandsma R, Larkin J (2013). Are major economies on track to achieve their pledges for 2020? An assessment of domestic climate and energy policies. *Energy Policy*. Article in Press.

Rosenzweig C, Elliott J, Deryng D, Ruane AC, Mueller C, Arneeth A, Boote KJ, Folberth C, Khabarov N, et al. (2013). Assessing agricultural risks of climate change in the 21st century in a global gridded crop model intercomparison. *PNAS*, Article in press(Published online 16 December 2013).

Sanderson WC & Scherbov S (2013). The characteristics approach to the measurement of population aging. *Population and Development Review*, 39(4):673-685 (December 2013).

Sanderson WC & Scherbov S (2013). The Characteristics Approach to the Measurement of Population Aging. IIASA Interim Report IR-13-007.

Santoro M, Cartus O, Fransson JES, Shvidenko A, McCallum I, Hall RJ, Beaudoin A, Beer C & Schmillius C (2013). Estimates of forest growing stock volume for Sweden, Central Siberia, and Quebec using Envisat Advanced Synthetic Aperture Radar backscatter data. *Remote Sensing*, 5(9):4503-4532 (12 September 2013).

Schepaschenko DG, Mukhortova LV, Shvidenko AZ & Vedrova EF (2013). The pool of organic carbon in the soils of Russia. *Eurasian Soil Science*, 46(2):107-116 (February 2013).

See L, Fritz S, Perger C, van der Velde M, Albrecht F, Schill C, McCallum I, Schepaschenko D & Obersteiner M (2013). Urban Geo-Wiki: A crowdsourcing tool for improving urban land cover. In: (Ed) CN Silva (ed.), *Citizen E-Participation in Urban Governance: Crowdsourcing and Collaborative Creativity*. IGI Global, Hershey, PA, USA pp.119-143 (June 2013).

Shvidenko A & Schepaschenko D (2013). Climate change and wildfires in Russia. *Contemporary Problems of Ecology*, 6(7):683-692 (December 2013).

Shvidenko AZ, Gustafson E, McGuire AD, Kharuk VI, Schepaschenko DG, Shugart HH, Tchebakova NM, Vygodskaya NN, Hayes DJ, McCallum I, et al. (2013). Terrestrial ecosystems and their change. In: Groisman PY & Gutman G (eds), *Regional Environmental Changes in Siberia and their Global Consequences*. Springer, Dordrecht, Netherlands pp.171-249.

Tarashev A & Usova A (2013). Nonlinear stabilizers in optimal control problems with infinite time horizon. In: Hoernberg D & Troeltzsch F (eds), *System Modeling and Optimization*. Springer, Berlin, Germany pp.286-295.

Tarashev A & Zhu B (2013). Optimal proportions in growth trends of resource productivity. In: Cuaresma J Crespo, Palokangas T & (Eds) A Tarashev (eds), *Green Growth and Sustainable Development*. Springer Berlin Heidelberg pp.49-66.

Thurner M, Beer C, Santoro M, Carvalhais N, Wutzler T, Schepaschenko D, Shvidenko A, Kompter E, Ahrens B, Levick SR & Schmillius C (2013). Carbon stock and density of

northern boreal and temperate forests. *Global Ecology and Biogeography*, Article in press(Published online 29 October 2013).

Timonina AV (2013). Multi-stage stochastic optimization: The distance between stochastic scenario processes. *Computational Management Science*, Article in press(Published online 24 August 2013).

van der Velde M, See L, You L, Balkovic J, Fritz S, Khabarov N, Obersteiner M & Wood S (2013). Affordable nutrient solutions for improved food security as evidenced by crop trials. *PLoS ONE*, 8(4):e60075 (2 April 2013).

## 2012

Aseev SM, Besov KO & Kryazhimskiy AV (2012). Infinite-horizon optimal control problems in economics. *Russian Mathematical Surveys*, 67(2):195-253.

Aseev SM, Besov KO, Ollus S-E & Palokangas T (2012). Optimal growth in a two-sector economy facing an expected random shock. *Proceedings of the Steklov Institute of Mathematics*, 276(Suppl.1):4-34 (April 2012).

Aseev SM & Veliov VM (2012). Maximum principle for infinite-horizon optimal control problems with dominating discount. *Dynamics of Continuous, Discrete and Impulsive Systems, Series B (DCDIS-B)*, 19(1-2):43-63.

Aseev SM & Veliov VM (2012). Necessary optimality conditions for improper infinite-horizon control problems. In: Klatte D, Luthi HJ & Schmedders K (eds), *Operations Research Proceedings 2011*. Springer, Berlin-Heidelberg, Germany pp.21-26.

Aseev SM & Veliov VM (2012). Needle Variations in Infinite-Horizon Optimal Control. Research Report 2012-04, Operations Research and Control Systems, Institute of Mathematical Methods in Economics, Vienna University of Technology, Austria (September 2012).

Davydov AA & Platov AS (2012). Optimal stationary solution in forest management model by accounting intra-species competition. *Moscow Mathematical Journal*, 12(2):269-273 (April-June 2012).

Davydov AA & Zakalyukin VM (2012). Controllability of non-linear systems: Generic singularities and their stability. *Russian Mathematical Surveys*, 67(2):255-280.

Dolman AJ, Shvidenko A, Schepaschenko D, Ciais P, Tchepakova N, Chen T, van der Molen MK, Belelli Marchesini L, Maximov TC, Maksyutov S & Schulze E-D (2012). An estimate of the terrestrial carbon budget of Russia using inventory-based, eddy covariance and inversion methods. *Biogeosciences*, 9(12):5323-5340 (20 December 2012).

Fath BD, Rovenskaya E, Veschinskaya V, Dieckmann U & Braennstroem A (2012). Ecological flow analysis of network collapse I: New methodology to investigate network collapse dynamics. In: Seppelt R, Voinov AA, Lange S & Bankamp D (eds), *iEMSs 2012: Managing Resources of a Limited Planet*. 1-5 July 2012, Leipzig, Germany pp.271-278.

Fazalova V & Dieckmann U (2012). Spatial self-structuring accelerates adaptive speciation in sexual populations. *Evolutionary Ecology Research*, 14(5):583-599.

Frank A, Goud Collins M, Clegg M, Dieckmann U, Kremenyuk VA, Kryazhimskiy A, Linnerooth-Bayer J, Levin S, Lo A, Ramalingam B, Ramo J, Roy S, Saari D, Shtauber Z, Sigmund K, Tepperman J, Thurner S, Yiwei W & von Winterfeldt D (2012). Security in the

Age of Systemic Risk: Strategies, Tactics and Options for Dealing with Femtorisks and Beyond. IIASA Interim Report IR-12-010.

Fritz S, McCallum I, Schill C, Perger C, See L, Schepaschenko D, van der Velde M, Kraxner F & Obersteiner M (2012). Geo-Wiki: An online platform for improving global land cover. *Environmental Modelling & Software*, 31:110-123 (May 2012)(Published online 28 December 2011).

Fuss S, Szolgayova J, Khabarov N & Obersteiner M (2012). Renewables and climate change mitigation: Irreversible energy investment under uncertainty and portfolio effects. *Energy Policy*, 40:59-68 (January 2012)(Published online 24 July 2010).

Huettich C, Schmullius C, Thiel C, Bartalev S, Emelyanov K, Korets M, Shvidenko A & Schepaschenko D (2012). Assessment and monitoring of Siberian forest resources in the framework of the EU-Russia ZAPAS project. In: *IGARSS 2012: IEEE International Geoscience and Remote Sensing Symposium ``Remote Sensing for a Dynamic Earth'' Proceedings*. 22-27 July 2012, Munich, Germany pp.7208-7211.

Huggel C, Khabarov N, Korup O & Obersteiner M (2012). Physical impacts of climate change on landslide occurrence and related adaptation. In: Clague J & Stead D (eds), *Landslides: Types, Mechanisms and Modeling*. Cambridge University Press, Cambridge, UK.

Khabarov N (2012). NetCDF Port using MinGW: Native Windows 64-bit (and 32-bit) DLLs. Online technical documentation and source code for NetCDF (Network Common Data Form) software package developed at the Unidata Program Center, Boulder, CO, USA.

Krasovskii AA & Krasovskii AN (2012). Nonlinear positional differential game in the class of mixed strategies. *Proceedings of the Steklov Institute of Mathematics*, 277(1):137-143 (July 2012).

Kraxner F, Nordstrom E-M, Obersteiner M, Havlik P, Gusti M, Kindermann G, Fuss S, Khabarov N, et al. (2012). Global Feedstock Scenarios for Bioenergy - Land-Use Change and Trade-Offs. Paper submitted to IEW 2012, the 31st edition of the International Energy Workshop, 19-21 June 2012, University of Cape Town, South Africa.

Kryazhimskiy AV (2012). Numerical encoding of sampled controls and an approximation metric criterion for the solvability of a guidance game problem. *Proceedings of the Steklov Institute of Mathematics*, 276(Suppl.1):106-125 (April 2012).

Kryazhimskiy AV (2012). Relaxation of optimal control problems and linear-quadratic systems. *Dynamics of Continuous, Discrete and Impulsive Systems, Series B (DCDIS-B)*, 19(1-2):17-42.

Kryazhimskiy AV & Osipov YS (2012). On the solvability of problems of guaranteeing control for partially observable linear dynamical systems. *Proceedings of the Steklov Institute of Mathematics*, 277(1):144-159 (July 2012).

Lakyda P & Shvidenko A (2012). Field data and new models of growth and productivity of Northern Eurasian forests. In: *Forest Observational Studies: Proceedings of an International Workshop*. 20-21 September 2012, Beijing Forestry University, China pp.59-74.

Lesiv M, Schepaschenko DG, Shvidenko AZ & Bun RA (2012). Creation of forest map for Ukraine using global land cover maps. *Scientific Herald of National Forest Technical University of Ukraine*, 22.9:24-30.

Lesiv M, Shchepashchenko D, Shvidenko A, et al. (2012). Land cover for Ukraine: The harmonization of remote sensing and ground-based data. AGU Fall Meeting 2012, ePoster GC31A-0976 (December 2012).

Lutz W, Butz WP, Castro M, Dasgupta P, Demeny PG, Ehrlich I, Giorguli S, Habte D, Haug W, Hayes A, Herrmann M, Jiang L, King D, Kotte D, Lees M, Makinwa-Adebusoye PK, McGranahan G, Mishra V, Montgomery MR, Riahi K, Scherbov S, Peng X & Yeoh B (2012). Demography's role in sustainable development. *Science*, 335(6071):918 (24 February 2012).

Puchkova A & Kryazkimskiy A (2012). Towards Detection of Early Warning Signals on Financial Crises. IIASA Interim Report IR-12-001.

Rao S, Chirkov V, Dentener F, van Dingenen R, Pachauri S, Purohit P, Amann M, Heyes C, Kinney P, Kolp P, Klimont Z, Riahi K & Schoepp W (2012). Environmental modeling and methods for estimation of the global health impacts of air pollution. *Environmental Modeling & Assessment*, 17(6):613-622 (December 2012) (Published online 14 April 2012).

Reschke J, Bartsch A, Schlaffer S & Schepaschenko D (2012). Capability of C-band SAR for operational wetland monitoring at high latitudes. *Remote Sensing*, 4(10):2923-2943 (1 October 2012).

Rovenskaya E, Veschinskaya V, Fath BD, Dieckmann U & Braennstroem A (2012). Ecological flow analysis of network collapse II: Indicators of ecosystem level vulnerability. In: Seppelt R, Voinov AA, Lange S & Bankamp D (eds), *iEMSs 2012: Managing Resources of a Limited Planet*. 1-5 July 2012, Leipzig, Germany pp.279-284.

Schepaschenko D, Fritz S, McCallum I, Shvidenko A, Perger C, Schill C, See L, Kraxner F & Obersteiner M (2012). A platform to visualize, analyze and improve biomass datasets: <http://biomass.geo-wiki.org>. *Folia Forestalia Polonica, Series A - Forestry*, 54(2):137-139.

Schepaschenko D, See L, Fritz S, McCallum I, Schill C, Perger C, Baccini A, Gallaun H, Kindermann G, Kraxner F, Saatchi S, Obersteiner M, Santoro M, Schmullius C, Shvidenko A & Schepaschenko M (2012). Observing forest biomass globally. *Earthzine*, posted on 9 June 2012 in Articles, Earth Observation, Forest Resources Information.

Schepaschenko D, Shvidenko A & Schepaschenko M (2012). Carbon balance of Russian agricultural land. *Geophysical Research Abstracts*, 14:EGU2012-8544.

Scherbov S, Sanderson WC & Mamolo M (2012). Quantifying Policy Tradeoffs to Support Aging Populations. IIASA Interim Report IR-12-015.

Shvidenko A (Contributing Author) (2012). Section 7: Forest resources and climate change. In: Petrov A & Lobovikov M (eds), *The Russian Federation Forest Sector: Outlook Study to 2030*. FAO, Rome, Italy, pp.47-50.

Shvidenko A, Nilsson S, Schepaschenko D & McCallum I (2012). IIASA FOR environmental holdings for Northern Eurasia. In: Groisman P, Reissell A & Kaukolehto M (eds), *Proceedings of the NEESPI Regional Science Team Meeting Devoted to the High Latitudes*. 2-6 June 2008, University of Helsinki, Finland pp.137-140 (June 2012).

Shvidenko A & Schepaschenko D (2012). Wildfire in Northern Eurasia and climate change. *Geophysical Research Abstracts*, 14:EGU2012-7340.

Shvidenko A, Schepaschenko D, Kraxner F & Obersteiner M (2012). Adaptation strategies and adaptation potential of Northern Eurasian forests. In: *Book of Abstracts*, Workshop on

the Impact of Climate Change on Forest and Agricultural Ecosystems and Adaptation Strategies, 20-23 September 2012, Krasnoyarsk, Russia p.12.

Shvidenko A, Schepaschenko D, Nilsson S & McCallum I (2012). Boreal forests in high latitudes of the NEESPI region. In: Groisman P, Reissell A & Kaukolehto M (eds), *Proceedings of the NEESPI Regional Science Team Meeting Devoted to the High Latitudes*. 2-6 June 2008, University of Helsinki, Finland pp.55-59 (June 2012).

Shvidenko A & Shchepashchenko D (2012). Impacts of natural and human-induced disturbances on carbon dynamics in Northern Eurasia. AGU Fall Meeting, ePoster B41B-0267 (December 2012).

Shvidenko AZ (2012). Global change and Russian forest mensuration. *Forest Inventory and Planning*, 1(47):52-75.

Shvidenko AZ, Buksha IF, Dubin VG & Lakyda PI (2012). Forests of the Ukraine in a changing world. In: Groisman PY & Lyalko VI (eds), *Earth Systems Change over Eastern Europe*. Adademperiodika, Kiev, Ukraine pp.239-256.

Shvidenko AZ, Schepaschenko DG, Vaganov EA, Sukhinin AS, Maksyutov SS & McCallum I (2012). Greenhouse gas emissions caused by wildfire in Russia in 1998-2010. *Protection of the Atmospheric Air: Atmosphere*, 1:6-12.

Szolgayova J, Fuss S, Khabarov N & Obersteiner M (2012). Robust energy portfolios under climate policy and socioeconomic uncertainty. *Environmental Modeling and Assessment*, 17(1-2):39-49 (March 2012) (Published online 5 July 2011).

Tarasyev AM & Usova A (2012). Global stabilization of the Hamiltonian system in the two-sector economic growth model. In: Lambertini L & Tarasyev A (eds), *Proceedings, 15th IFAC Workshop "Control Applications of Optimization" CAO'2012*. 13-16 September 2012, Rimini, Italy pp.1-6.

Tarasyev AM & Usova AA (2012). Algorithms of construction for optimal solution in modular models of economic growth. In: *Proceedings of the International Conference "Differential Equations and Optimal Control" dedicated to the 90th Anniversary of Academician E.F. Mischenko*. 16-17 April 2012, Steklov Institute of Mathematics, Moscow, Russia pp.127-129.

Tarasyev AM & Usova AA (2012). Stabilizing the Hamiltonian system for constructing optimal trajectories. *Proceedings of the Steklov Institute of Mathematics*, 277(1):248-265 (July 2012).

Tarasyev AM & Usova AA (2012). Value function in bilinear control problem with infinite horizon. In: Tatarkin AI & Minakir PA (eds), *Assessment of Factors of Growth and Projection of Social-Economic Development of Russia*. Institute of Economics UrB RAS, Ekaterinburg, Russia pp.61-70.

Tarasyev AM & Zhu B (2012). Optimal proportions in growth trends of resource productivity control applications of optimization. In: Lambertini L & Tarasyev A (eds), *Proceedings, 15th IFAC Workshop "Control Applications of Optimization" CAO'2012*. 13-16 September 2012, Rimini, Italy pp.182-187.

van der Velde M, See L, Fritz S, Verheijen FGA, Khabarov N & Obersteiner M (2012). Generating crop calendars with Web search data. *Environmental Research Letters*, 7(2):024022 (April-June 2012).

van der Velde M, See L, You L, Fritz S, Khabarov N & Obersteiner M (2012). Overcoming

Soil Productivity Constraints as Evidenced by Historic FAO Crop Trials to Improve Food Security in Africa, Latin America and SE Asia. Poster presentation, Planet under Pressure, 26-29 March 2012, London, UK.

Zhuang Q, Kicklighther D, Cai Y, Tchebakova N, Paltsev S, Sokolov A, Shvidenko A, Sirin A, et al. (2012). The role of climate change and human activities in Northern Eurasia on global changes of land cover and land use and carbon biogeochemistry. *Geophysical Research Abstracts*, 14:EGU2012-12492.

## 2011

Amjad M, Fath BD & Rovenskaya E (2011). Ecological Network Model and Analysis for Rawal Lake, Pakistan. IIASA Interim Report IR-11-023.

Davydov AA & Platov AS (2011). Optimization of stationary solution of a model of size-structured population exploitation. *Mathematical Sciences*, 176(6):860-869 (August 2011).

Davydov AA & Shutkina TS (2011). Uniqueness of a cycle with discounting that is optimal with respect to the average time profit. *Proceedings of the Institute of Mathematics and Mechanics, Ural Branch of Russian Academy of Sciences*, 17(2):80-87.

Davydov AA & Thi Diep LT (2011). Reduction theorem and normal forms of linear second order mixed type PDE families in the plane. *TWMS Journal of Pure and Applied Mathematics*, 2(1):44-53.

Fritz S, Shchepashchenko D, McCallum I, Perger C, Schill C, Baccini A, Gallaun H, Kindermann G, Obersteiner M, Santoro M, Schmulius C & Shvidenko A (2011). Observing terrestrial biomass globally: <http://biomass.geo-wiki.org>. AGU Fall Meeting 2011, Abstract B51C-0404 (December 2011).

Gustafson EJ, Shvidenko AZ & Scheller RM (2011). Effectiveness of forest management strategies to mitigate effects of global change in south-central Siberia. *Canadian Journal of Forest Research*, 41(7):1405-1421 (July 2011) (Published online 5 July 2011).

Gustafson EJ, Sturtevant BR, Shvidenko AZ & Scheller RM (2011). Using landscape disturbance and succession models to support forest management. In: Li C, Laforzezza R & Chen J (eds), *Landscape Ecology in Forest Management and Conservation: Challenges and Solutions for Global Change*. Springer, Heidelberg, Germany pp.99-118.

Khabarov N (2011). Value of Earth Observations: Forest fires, earthquakes, and landslides. In: Borzacchiello MT & Craglia M (eds), *Socio-Economic Benefits from the Use of Earth Observation: Report from the International Workshop*. 11-13 July 2011, JRC - Joint Research Centre, Ispra, Italy.

Khabarov N, Huggel C, Obersteiner M & Ramirez JM (2011). Adaptation capacity of a landslide early warning system to climate change: Numerical modeling for the Combeima region in Colombia. *Journal of Integrated Disaster Risk Management*, 1(2)(13 December 2011).

Krasovskiy NA & Tarasyev AM (2011). Decomposition algorithm of searching equilibria in the dynamical game. *Mathematical Game Theory and Applications*, 3(4):49-88.

Kraxner F, Leduc S, Aoki K, Fuss S, Obersteiner M, Schepaschenko D & Shvidenko A (2011). Forest-based bioenergy in the Eurasian context. In: of Forest SB RAS Sukachev Institute (ed.), *Boreal Forests in a Changing World: Challenges and Needs for Action*. *Proceedings of the international conference IBFRA*. 15-21 August 2011, Krasnoyarsk,



Russia.

Kraxner F, Obersteiner M & Shvidenko A (2011). Responsible global integrated forest management strategies. In: *Proceedings, IUFRO/APFNet International Conference on Response of Forests and Adaptation Management to Climate Change*. 8-10 August 2011, Yichun, China.

Kryazhimskiy A (2011). Early warning signals and binary classifications of historical paths (Lecture notes). Advanced School on Understanding and Prediction of Earthquakes and Other Extreme Events, 26 September - 8 October 2011, Abdus Salam International Centre for Theoretical Physics, Trieste, Italy (4 October 2011).

Kryazhimskiy AV & Maksimov VI (2011). Resource-saving tracking problem with infinite time horizon. *Differential Equations*, 47(7):1004-1013 (July 2011).

Kryazhimskiy AV & Tarasyev AM (2011). Integrated socio-economic modeling for analysis of countries' sustainable development (Abstract). In: *Book of Abstracts*, ERA.Net RUS Brokerage Event, 28 February - 1 March 2011, Ekaterinburg, Russia.

Moltchanova E, Khabarov N, Obersteiner M, Ehrlich D & Moula M (2011). The value of rapid damage assessment for efficient earthquake response. *Safety Science*, 49(8-9):1164-1171 (October 2011) (Published online 22 April 2011).

Mukhortova L, Schepaschenko D, Shvidenko A & McCallum I (2011). A system for heterotrophic soil respiration assessment of Russian land. In: of Forest SB RAS Sukachev Institute (ed.), *Boreal Forests in a Changing World: Challenges and Needs for Action. Proceedings of the international conference IBFRA*. 15-21 August 2011, Krasnoyarsk, Russia pp.86-90.

Nevado B, Fazalova V, Backeljau T, Hanssens M & Verheyen E (2011). Repeated unidirectional introgression of nuclear and mitochondrial DNA between four congeneric Tanganyikan cichlids. *Molecular Biology and Evolution*, 28(8):2253-2267 (August 2011) (Published online 15 February 2011).

Nevado B, Fazalova V, Backeljau T, Hanssens M & Verheyen E (2011). Repeated Unidirectional Introgression of Nuclear and Mitochondrial DNA Between Four Congeneric Tanganyikan Cichlids. IIASA Interim Report IR-11-026.

Osipov YS, Kryazhimskiy AV & Maksimov VI (2011). Some algorithms for the dynamic reconstruction of inputs. *Proceedings of the Institute of Mathematics and Mechanics, Ural Branch of Russian Academy of Sciences*, 17(1):129-161.

Osipov YS, Kryazhimskiy AV & Maksimov VI (2011). Some algorithms for the dynamic reconstruction of inputs. *Proceedings of the Steklov Institute of Mathematics*, 275(Suppl.1):86-120 (December 2011).

Pan Y, Birdsey RA, Fang J, Houghton R, Kauppi PE, Kurz WA, Phillips OL, Shvidenko A, Lewis SL, Canadell JG, Ciais P, Jackson RB, Pacala SW, McGuire AD, Paio S, Rautiainen A, Sitch S & Hayes D (2011). A large and persistent carbon sink in the world's forests. *Science*, 333(6045):988-993 (19 August 2011) (Published online 14 July 2011).

Quegan S, Beer C, Shvidenko A, McCallum I, Handoh IC, Peylin P, Roedenbeck C, Lucht W & Schimmler C (2011). Estimating the carbon balance of central Siberia using a landscape-ecosystem approach, atmospheric inversion and Dynamic Global Vegetation Models. *Global Change Biology*, 17(1):351-365 (January 2011) (Published online 21 June 2010).

Rao S, Chirkov V, Dentener F, van Dingenen R, Pachauri S, Purohit P, Amann M, Heyes C, Kinney P, Kolp P, Klimont Z, Riahi K & Schoepf W (2011). Estimation of the Global Health Impacts of Air Pollution. IIASA Interim Report IR-11-035.

Riahi K, Rao S, Krey V, Cho C, Chirkov V, Fischer G, Kindermann G, Nakicenovic N & Rafaj P (2011). RCP 8.5 - A scenario of comparatively high greenhouse gas emissions. *Climatic Change*, 109(1-2):33-57 (November 2011) (Published online 13 August 2011).

Santoro M, Beer C, Cartus O, Schmullius C, Shvidenko A, McCallum I, Wegmueller U & Wiesmann A (2011). Retrieval of growing stock volume in boreal forest using hyper-temporal series of Envisat ASAR ScanSAR backscatter measurements. *Remote Sensing of Environment*, 115(2):490-507 (15 February 2011) (Published online 30 October 2010).

Savin VV & Rovenskaya E (2011). Remarks on fair wealth accumulation in Russia. *Environment, Development and Sustainability*, 13(5):923-937 (October 2011) (Published online 13 April 2011).

Schepaschenko D, Fritz S, McCallum I, Perger C, Schill C, Shvidenko A, Kraxner F & Obersteiner M (2011). A platform to visualize, analyze and improve Biomass datasets: <http://biomass.geo-wiki.org>. In: *CarboForest Conference*. 21-23 September 2011, Forest Research Institute, Sekocin Stary, Poland.

Schepaschenko D, McCallum I, Shvidenko A, Fritz S & Obersteiner M (2011). A new hybrid land cover dataset for Russia: A methodology for integrating statistics, remote sensing and in situ information. *Land Use Science*, 6(4):245-259 (December 2011) (Published online 22 December 2010).

Schepaschenko D, Shvidenko A & Mukhortova L (2011). Organic carbon in Russian soils: A specified spatially explicit assessment. *Geophysical Research Abstracts*; 13:EGU2011-11524 (April 2011).

Schepaschenko DG, Shvidenko AZ, Mukhortova LV & Schepaschenko MV (2011). Soil in the accounting of biospheric role of Russian ecosystems. In: *Proceedings of the International Conference Devoted to 165-years Anniversary of V.V. Dokuchaev*. 1-4 March 2011, St. Petersburg, Russia.

Scherbov S & Ediev DM (2011). Significance of life table estimates for small populations: Simulation-based study of estimation errors. *Demographic Research*, 24(Art.22):527-550 (31 March 2011).

Scherbov S, Lutz W & Sanderson WC (2011). The Uncertain Timing of Reaching 7 Billion and Peak Population. IIASA Interim Report IR-11-002.

Scherbov S, Lutz W & Sanderson WC (2011). The uncertain timing of reaching 8 billion, peak world population, and other demographic milestones. *Population and Development Review*, 37(3):571-578 (September 2011) (Published online 2 September 2011).

Schmullius C, Thiel C, Bartalev S, Emelyanov K, Korets M, Shvidenko A, Skudin V & Vashchouk L (2011). Assessment and monitoring of forest resources in the framework of the EU-Russian space dialogue - The ZAPAS project. In: of Forest SB RAS Sukachev Institute (ed.), *Boreal Forests in a Changing World: Challenges and Needs for Action. Proceedings of the international conference IBFRA*. 15-21 August 2011, Krasnoyarsk, Russia.

Shchepashchenko D, Mukhortova L, Shvidenko A & McCallum I (2011). Heterotrophic soil

respiration in Russia. AGU Fall Meeting 2011, Abstract GC41C-0821 (December 2011).

Shvidenko A (2011). Changing world, boreal forests and IBFRA. In: of Forest SB RAS Sukachev Institute (ed.), *Boreal Forests in a Changing World: Challenges and Needs for Action. Proceedings of the international conference IBFRA*. 15-21 August 2011, Krasnoyarsk, Russia.

Shvidenko A, Klimont Z, Kupiainen K, Rao S & Schepaschenko D (2011). The effects of climate change and abatement policies on the value of natural resources in Northern Europe and in the Arctic Sea area. Prime Minister's Office Reports, 1/2011, Helsinki, Finland (18 January 2011).

Shvidenko A, Kraxner F, Obersteiner M & Schepaschenko D (2011). Adaptation and mitigation strategies in Northern Eurasian boreal forests. In: *Proceedings, IUFRO/APFNet International Conference on Response of Forests and Adaptation Management to Climate Change*. 8-10 August 2011, Yichun, China.

Shvidenko A & Schepaschenko D (2011). Carbon budget of circumpolar boreal forests: An attempt of synthesis. In: *Carbon Pools and Fluxes in Boreal Forest and Wetland. Proceedings of the international conference*. 26-30 September 2011, Syktyvkar, Russia.

Shvidenko A, Schepaschenko D, Bottcher H, Gusti M, Kraxner F, Obersteiner M & Leduc S (2011). The Role of ECA's Forest Resources in Climate Change Mitigation. Final Report submitted to The World Bank on Contract 7158909 (September 2011).

Shvidenko A, Schepaschenko D & McCallum I (2011). Productivity of Russian forests during recent decades (1960-2010s). *Geophysical Research Abstracts*; 12:EGU2011-11686 (April 2011).

Shvidenko A, Schepaschenko D, McCallum I & Nilsson S (2011). Can the uncertainty of full carbon accounting of forest ecosystems be made acceptable to policymakers? In: White T, Jonas M, Nahorski Z & Nilsson S (eds), *Greenhouse Gas Inventories: Dealing With Uncertainty*. Springer, Dordrecht, Netherlands pp.137-157.

Shvidenko A, Schepaschenko D, McCallum I & Schullius C (2011). Use of remote sensing products in a terrestrial ecosystems verified full carbon accounting: Experiences from Russia. In: Lacoste H (ed.), *Proceedings, Earth Observation for Land-Atmosphere Interaction Science*. 3-5 November 2010, Frascati, Italy (January 2011).

Shvidenko A, Shchepashchenko D, Sukhinin A, McCallum I & Maksyutov S (2011). Carbon emissions from forest fires in boreal Eurasia between 1998-2010. In: *Proceedings, 5th International Wildland Fire Conference*. 9-13 May 2011, Sun City, South Africa.

Shvidenko AZ & Schepaschenko DG (2011). What do we know about Russian forests today? *Forest Inventory and Forest Planning*, 1-2(45-46):153-172.

Shvidenko AZ, Shchepashchenko DG, Vaganov EA, Sukhinin AI, Maksyutov SS, McCallum I & Lakyda IP (2011). Impact of wildfire in Russia between 1998-2010 on ecosystems and the global carbon budget. *Doklady Earth Sciences*, 441(2):1678-1682 (December 2011).

Szolgayova J, Fuss S, Khabarov N & Obersteiner M (2011). A dynamic CVaR-portfolio approach using real options: An application to energy investments. *European Transactions on Electrical Power*, 21(6):1825-1841 (September 2011) (Published online 27 May 2010).

Tarasyev AM & Usova A (2011). An iterative direct-backward procedure for construction of

optimal trajectories in control problems with infinite horizon. In: *Proceedings, 18th IFAC World Congress*. 28 August - 2 September 2011, Milan, Italy.

Tarasyev AM & Usova A (2011). The value function as a solution of Hamiltonian systems in linear optimal control problems with infinite horizon. In: *Proceedings, 18th IFAC World Congress*. 28 August - 2 September 2011, Milan, Italy.

Tarasyev AM & Usova AA (2011). Influence of production function parameters on the solution and value function in optimal control problem. *Mathematical Game Theory and Applications*, 3(3):85-115.

## 2010

Aseev SM, Besov K & Kaniovski S (2010). Optimal Endogenous Growth with Exhaustible Resources. IIASA Interim Report IR-10-011.

Aseev SM, Besov K, Ollus S-E & Palokangas T (2010). Optimal economic growth with a random environmental shock. In: Cuaresma J Crespo, Palokangas T & Tarasyev A (eds), *Dynamic Systems, Economic Growth, and the Environment*. Springer-Verlag, Heidelberg, Germany pp.109-137 (2010).

Birdsey RA, Pan Y, Fang J, Kauppi P, Kurz WA, Phillips O, Piao S, Shvidenko AZ, Canadell JG, Ciais P, Houghton RA, et al. (2010). The carbon sink of the world's forests: Trends and causes of change in boreal, temperate, and tropical regions from forest inventories. AGU Fall Meeting 2010, Abstract B34C-03 (December 2010).

Ciais P, Canadell JG, Luysaert S, Chevallier F, Shvidenko A, Poussi Z, Jonas M, Peylin P, King AW, Schulze E-D, Piao S, Roedenbeck C, Peters W & Breon F-M (2010). Can we reconcile atmospheric estimates of the Northern terrestrial carbon sink with land-based accounting? *Current Opinion in Environmental Sustainability*, 2(4):225-230 (October 2010) (Published online 08 July 2010).

Crespo Cuaresma J, Palokangas T & Tarasyev A (eds) (2010). *Dynamic Systems, Economic Growth, and the Environment*. Springer-Verlag, Heidelberg, Germany.

Davydov AA, Danchenko VI & Zvyagin MY (2010). Existence and uniqueness of a stationary distribution of a biological community. *Proceedings of the Steklov Institute of Mathematics*, 267(1):40-49 (February 2010).

Davydov AA, Pastres R & Petrenko I (2010). Optimization of the Spatial Distribution of Pollution Emission in Water Bodies. IIASA Interim Report IR-10-002.

Davydov AA & Shutkina TS (2010). Time average optimization of cycle process with profit and effort discounts. *Russian Journal of Nonlinear Dynamics*, 6(1):151-158.

Fazalova V, Nevado B, Peretolchina T, Petunina J & Sherbakov D (2010). When environmental changes do not cause geographic separation of fauna: Differential responses of Baikalian invertebrates. *BMC Evolutionary Biology*, 10:320(23 October 2010).

Gustafson EJ, Shvidenko AZ, Sturtevant BR & Scheller RM (2010). Predicting global change effects on forest biomass and composition in south-central Siberia. *Ecological Applications*, 20(3):700-715 (April 2010).

Huggel C, Khabarov N, Obersteiner M & Ramirez JM (2010). Implementation and integrated numerical modeling of a landslide early warning system: A pilot study in Colombia. *Natural Hazards*, 52(2):501-518 (February 2010) (Published online 22 April 2009).

Krasovskii AA & Tarasyev AM (2010). High order precision estimates in algorithms for solving problems of economic growth. In: Cuaresma J Crespo, Palokangas T & Tarasyev A (eds), *Dynamic Systems, Economic Growth, and the Environment*. Springer-Verlag, Heidelberg, Germany pp.45-59.

Krasovskii AA & Tarasyev AM (2010). Sequential precision of predictions in models of economic growth. In: Cuaresma J Crespo, Palokangas T & Tarasyev A (eds), *Dynamic Systems, Economic Growth, and the Environment*. Springer-Verlag, Heidelberg, Germany pp.23-43.

Krasovskii AA, Tarasyev AM & Watanabe C (2010). Optimization of functionality development. *Applied Mathematics and Computation*, 217(3):1125-1134 (1 October 2010) (Published online 17 March 2010).

Krasovskii NA & Tarasyev AV (2010). Search of maximum points of a vector criterion based on decomposition properties. *Proceedings of the Steklov Institute of Mathematics*, 269(Suppl.1):174-190 (July 2010).

Krey V & Minullin Y (2010). Modelling competition between natural gas pipeline projects to China. *International Journal of Global Environmental Issues*, 10(1/2):143-171.

Kryazhimskiy A (2010). On a decentralized boundedly rational emission reduction strategy. In: Cuaresma J Crespo, Palokangas T & Tarasyev A (eds), *Dynamic Systems, Economic Growth, and the Environment*. Springer-Verlag, Heidelberg, Germany pp.215-236.

Kryazhimskiy A (2010). Two-step "win-stay, lose-shift" and learning to cooperate in the repeated Prisoner's Dilemma. *International Game Theory Review (IGTR)*, 12(4):437-451 (December 2010).

Kryazhimskiy A & Maksimov VI (2010). Resource-saving infinite-horizon tracking under uncertain input. *Applied Mathematics and Computation*, 217(3):1135-1140 (1 October 2010) (Published online 21 January 2010).

Kryazhimskiy AV (2010). Economics in IIASA's Work: Activities and Opportunities (Workshop presentation). NSFC-IIASA Workshop on Drivers of Global Transformation, 8 October 2010, Beijing, China.

Kryazhimskiy AV (2010). Market equilibrium in negotiations and growth models. Keynote Lecture, Fourth International Conference on "Game Theory and Management"; 28-30 June 2010, St. Petersburg, Russia.

Kryazhimskiy AV & Osipov YS (2010). On dynamical regularization under random noise. *Proceedings of the Steklov Institute of Mathematics*, 271(1):125-137 (December 2010).

Kurganova IN, Lopes de Gerenyu VO, Shvidenko AZ & Sapozhnikov PM (2010). Changes in the organic carbon pool of abandoned soils in Russia (1990-2004). *Eurasian Soil Science*, 43(3):333-340 (March 2010).

Lehmijoki U & Rovenskaya E (2010). Environmental mortality and long-run growth. In: Cuaresma J Crespo, Palokangas T & Tarasyev A (eds), *Dynamic Systems, Economic Growth, and the Environment*. Springer-Verlag, Heidelberg, Germany pp.239-258.

Lehtonen HS, Roetter RP, Palosuo TI, Salo TJ, Helin JA, Pavlova Y & Kahiluoto HM (2010). A modeling framework for assessing adaptive management options of Finnish agrifood

systems to climate change. *Journal of Agricultural Science*, 2(2):3-16 (June 2010).

Martynenko OV, Schepaschenko DG, Karminiv VN & Schepaschenko MV (2010). Dynamics of pine forest productivity with age depends on soil properties. *Herald of the Moscow State Forest University-Forest Herald*, 7(76):62-69 (2010).

McCallum I, Fritz S, Khabarov N, Fuss S, Szolgayova J, Rydzak F, Havlik P, Kraxner F, Obersteiner M, Aoki K, et al. (2010). Identifying and quantifying the benefits Of GEOSS. *Earthzine*, posted on 12 July 2010 in Articles, Earth Observation, Economy, GEOSS/ICEO News.

McCallum I, Wagner W, Schmullius C, Shvidenko A, Obersteiner M, Fritz S & Nilsson S (2010). Comparison of four global FAPAR datasets over Northern Eurasia for the year 2000. *Remote Sensing of Environment*, 114(5):941-949 (17 May 2010) (Published online 25 January 2010).

Minullin Y & Schrattenholzer L (2010). Lessons learned for regional and global energy security. In: Voeller JG (ed.), *Wiley Handbook of Science and Technology for Homeland Security*. John Wiley & Sons, pp.1-5 (Published online 12 February 2010).

Ortiz-Moctezuma MB, Pivovarchuk D, Szolgayova J & Fuss S (2010). Development of transportation infrastructure in the context of economic growth. In: Cuaresma J Crespo, Palokangas T & Tarasyev A (eds), *Dynamic Systems, Economic Growth, and the Environment*. Springer-Verlag, Heidelberg, Germany pp.259-289.

Rovenskaya E (2010). Optimal economic growth under stochastic environmental impact: Sensitivity analysis. In: Cuaresma J Crespo, Palokangas T & Tarasyev A (eds), *Dynamic Systems, Economic Growth, and the Environment*. Springer-Verlag, Heidelberg, Germany pp.79-107.

Rozhkov VA & Shvidenko A (2010). The first digitized maps of phytomass, mortmass and net primary production. In: Dobrovolsky GV, Kuderayov VN & Tishkov AA (eds), *Proceedings of the Conference, "Geography of Productivity and Biogeochemical Turnover of Terrestrial Landscapes: by Centenary of Prof. N. Bazilevich*. 19-22 April 2010, Institute of Geography, RAS, Moscow, Russia pp.114-125 (April 2010).

Rozhkov VA & Shvidenko AZ (2010). The first digital maps of biological productivity parameters. *Eurasian Soil Science*, 43(11):1202-1210 (November 2010).

Sanderson W, Tarasyev AM & Usova AA (2010). Capital vs education: Assessment of economic growth from two perspectives (Abstract). In: *NOLCOS 2010*, 8th IFAC Symposium on Nonlinear Control Systems, 1-3 September 2010, University of Bologna, Italy.

Sanderson WC & Scherbov S (2010). Remeasuring aging. *Science*, 329(5997):1287-1288 (10 September 2010).

Santoro M, Beer C, Cartus O, Schmullius C, Shvidenko A, McCallum I, Wegmueller U & Wiesmann A (2010). The BIOMASAR algorithm: An approach for retrieval of forest growing stock volume using stacks of multi-temporal SAR data. In: *Proceedings of ESA Living Planet Symposium*. 28 June-2 July 2010, CD-ROM, Oslo, Norway (July 2010).

Schepaschenko D, McCallum I & Shvidenko A (2010). Hybrid cover in 2009 for Russia: A methodology for integrating statistics, remote sensing and in-situ information. In: *Proceedings of the International Conference on Environmental Observations, Modeling and Information Systems ENVIROMIS-2010*. 5-11 July 2010, Tomsk, Russia pp.58-61.

Scherbov S & Ediev DM (2010). Significance of Life Table Estimates for Small Populations: Simulation-Based Study of Estimation Errors. IIASA Interim Report IR-10-009.

Shvidenko A, Schepaschenko D & Maksyutov S (2010). Impact of terrestrial ecosystems of Russia on the global carbon cycle from 2003-2008: An attempt of synthesis. In: *Proceedings of the International Conference on Environmental Observations, Modeling and Information Systems ENVIROMIS-2010*. 5-11 July 2010, Tomsk, Russia pp.48-52.

Shvidenko A, Schepaschenko D & Maksyutov S (2010). A terrestrial ecosystem full verified carbon accounting for Russian land: Results and uncertainties. AGU Fall Meeting 2010, Abstract B34C-03 (December 2010).

Shvidenko A, Schepaschenko D, McCallum I & Nilsson S (2010). Can the uncertainty of full carbon accounting of forest ecosystems be made acceptable to policymakers? *Climatic Change*, 103(1-2):137-157 (November 2010) (Published online 14 July 2010).

Shvidenko AZ, Buksha IF, Dubin VG & Lakyda PI (2010). Forests of the Ukraine in a changing world. In: Lyalko VI (ed.), *Earth Systems Change over Eastern Europe*. National Academy of Sciences of Ukraine, Kiev, Ukraine pp.176-197.

Szolgayova J, Fuss S, Khabarov N & Obersteiner M (2010). Robust long-term energy portfolios - A climate mitigation analysis. In: *Proceedings of the International Conference on Applied Energy (ICAE 2010)*. 21-23 April 2010, Singapore, pp.782-793.

Tarashev AM & Usova AA (2010). Construction of a regulator for the Hamiltonian system in a two-sector economic growth model. *Proceedings of the Steklov Institute of Mathematics*, 271(1):265-285 (December 2010).

Tarashev AM & Usova AA (2010). Nonlinear stabilizer constructing for two-sector economic growth model. *Proceedings of the Institute of Mathematics and Mechanics, Ural Branch of RAS*, 16(5):297-307 (2010).

Zhuang Q, Melillo J, Kicklighter D, Reilly J & Shvidenko A (et al.) (2010). Role of climate change and human activities in changes of land cover and land use and greenhouse gas emissions in Northern Eurasia. In: *Proceedings of the International Conference on Environmental Observations, Modeling and Information Systems ENVIROMIS-2010*. 5-11 July 2010, Tomsk, Russia pp.52-53.

Zhuang Q, Melillo JM, Kicklighter DW, Reilly JM, Paltsev S, Shvidenko A, Sokolov AP, Tchrbkova N, Parfenova E, Peregon A, et al. (2010). Changes of land use and land cover and biogeochemistry in northern Eurasia in response to climate change and the global economy. AGU Fall Meeting 2010, Abstract GC41D-06 (December 2010).

## 2009

Aseev SM (2009). Infinite-Horizon Optimal Control with Applications in Growth Theory (Lecture Notes). MSU CMC Publications Department, MAKS Press, Moscow, Russia.

Ayres RU, Krasovskii AA & Tarashev AM (2009). Nonlinear stabilizers of economic growth under exhausting energy resources. In: *Proceedings of CAO'09: IFAC Workshop on Control Applications of Optimisation*. 6-8 May 2009, University of Jyvaeskylae, Agora, Finland.

Bartsch A, Naeimi V, McCallum I, Shvidenko A & Wagner W (2009). Spring snowmelt variability in northern Eurasia 2000-2007 (Abstract). *Geophysical Research Abstracts*, 11:EGU2009-9325.

Fuss S, Khabarov N, Szolgayova J & Obersteiner M (2009). The effects of climate policy on the energy technology mix: An integrated CVaR and Real Options Approach. In: Golub A & Markandya A (eds), *Modeling Environment - Improving Technological Innovations under Uncertainty*. Routledge, London, UK (2009).

Fuss S, Khabarov N, Szolgayova J & Obersteiner M (2009). Valuing climate change uncertainty reductions for robust energy portfolios. In: *Proceedings from the 33rd International Symposium on Remote Sensing of Environment (ISRSE-33) "Sustaining the Millennium Development Goals"*. 4-8 May 2009, Stresa, Italy.

Huggel C, Eugster S, Khabarov N, Obersteiner M, Ramirez JM & Salzman N (2009). An integrated cross-sector and cross-institution approach to reduce change induced disaster effects in a South American context (Abstract). *IOP Conference Series: Earth and Environmental Science*, 6(39):392022 (1 February 2009).

Khabarov N, Bun A & Obersteiner M (2009). The value of observations for reduction of earthquake-induced loss of life on a global scale. In: *Proceedings from the 33rd International Symposium on Remote Remote Sensing of Environment (ISRSE-33) "Sustaining the Millennium Development Goals"*. 4-8 May 2009, Stresa, Italy.

Khabarov N, Moltchanova E & Obersteiner M (2009). Value of weather observations for reduction of forest fire impact on population. In: *Proceedings from the 33rd International Symposium on Remote Sensing of Environment (ISRSE-33) "Sustaining the Millennium Development Goals"*. 4-8 May 2009, Stresa, Italy.

Krasovskii AA & Tarasyev AM (2009). High-precision algorithms for constructing optimal trajectories via solving Hamiltonian systems. In: *Proceedings of CAO'09: IFAC Workshop on Control Applications of Optimisation*. 6-8 May 2009, University of Jyvaeskylae, Agora, Finland.

Kremenjuk VA (2009). Negotiations on national security risks: The case of U.S.-Soviet Relations. In: Avenhaus R & Sjoestedt G (eds), *Negotiated Risks: International Talks on Hazardous Issues*. Springer-Verlag, Heidelberg, Germany pp.161-180.

Kryazhinskiy A (2009). On a Boundedly Rational Pareto-Optimal Trade in Emission Reduction. IIASA Interim Report IR-09-017.

Kryazhinskiy A & Osipov YS (2009). Problems of optimal control with incomplete information and method of program packages (Abstract). In: *Actual Problems of Stability and Control Theory (APSCT'2009): Abstracts of International Conference*, 21-26 September 2009, Institute of Mathematics and Mechanics, Ural State University, Ekaterinburg, Russia, pp.100-102.

Lehmijoki U & Rovenskaya E (2009). Air pollution mortality in Denmark, Finland and Sweden. *Finnish Yearbook of Population Research 2009*, XLIV:97-108.

Lehmijoki U & Rovenskaya E (2009). Environmental Mortality and Long-run Growth. Discussion Paper No. 252 / February 2009. Helsinki Center of Economic Research, University of Helsinki, Finland.

Lobanova G, Fath BD & Rovenskaya E (2009). Exploring simple structural configurations for optimal network mutualism. *Communications in Nonlinear Science and Numerical Simulation*, 14(4):1461-1485 (April 2009).



- Lutz W, KC S, Khan HTA, Scherbov S & Leeson GW (2009). Future ageing in Southeast Asia: Demographic trends, human capital, and health status. In: Arifin EN & Ananta A (eds), *Older Persons in Southeast Asia: An Emerging Asset*. ISEAS Publishing, Singapore pp.47-67.
- Lutz W, KC S & Scherbov S (2009). Future population growth, aging and human capital in the Mediterranean. In: Lutz W & Goujon A (eds), *Capital Humano, Genero y Envejecimiento en el Mediterraneo*, PAPERSIEMed. 7, IEMed., Barcelona, Spain pp.19-29 (2009).
- Lutz W, Sanderson WC, Scherbov S & KC S (2009). Demographic and human-capital trends in Eastern Europe and Sub-Saharan Africa. In: Stiftung Bertelsmann & Institute Migration Policy (eds), *Talent, Competitiveness and Migration*. Verlag Bertelsmann Stiftung, Guetersloh, Germany pp.163-192 (2009).
- Mamolo M & Scherbov S (2009). Population Projections for Forty-Four European Countries: The Ongoing Population Ageing. *European Demographic Research Papers 2/2009*, Vienna Institute of Demography of the Austrian Academy of Sciences, Vienna, Austria (2009).
- McCallum I, Wagner W, Schullius C, Shvidenko A, Obersteiner M, Fritz S & Nilsson S (2009). Satellite-based terrestrial production efficiency modeling. *Carbon Balance and Management*, 4:8(18 September 2009).
- Melnikov NB, O'Neill BC & Dalton MG (2009). Accounting for Household Heterogeneity in General Equilibrium Models. IIASA Interim Report IR-09-051.
- Northway S, Bull GQ, Shvidenko A & Bailey L (2009). Recent Developments in Forest Products Trade between Russia and China: Potential Production, Processing, Consumption and Trade Scenarios. Forest Trends Association, Washington, DC, USA (March 2009).
- Pavlova Y (2009). Business-as-usual, High Technology and Coalition Scenarios for Transboundary Pollution in the European Union. IIASA Interim Report IR-09-016.
- Ren Q, Zheng X, Lutz W & Scherbov S (2009). China's grave demographic challenges in coming decades. *China Economist*, 3:92-103(May-June 2009).
- Ren Q, Zheng X, Lutz W & Scherbov S (2009). Uncertain population dynamics and HIV/AIDS in China. In: Tucker J, Poston DL, Ren Q, Gu B, Zheng X & Russell C (eds), *Gender Policy and HIV in China: Catalyzing Policy Change*. Springer-Verlag, Heidelberg, Germany pp.9-25.
- Sanderson WC & Scherbov S (2009). Aging: A new look into an old problem. In: ed) Mohl W (Guest (ed.), *Proceedings of the International Conference on Aging*. 29-31 October 2008, Beijing, China. Supplement to *Wiener Klinische Wochenschrift*, 121(7-8):S6-S8 (May 2009).
- Sanderson WC & Scherbov S (2009). Future Trends in the Prevalence of Severe Activity Limitations in Developed Countries. IIASA Interim Report IR-09-047.
- Schepaschenko D, McCallum I, Shvidenko A, Kraxner F & Fritz S (2009). A hybrid Land Cover Dataset for Russia: A new methodology for merging statistics, remote sensing and in-situ information (Abstract). *Geophysical Research Abstracts*, 11:EGU2009-6977.
- Schepaschenko DG, Shvidenko AZ & Shalaev VS (eds) (2009). *Biological Productivity and Carbon Budget of Larch Forests of Northern-East Russia*. Moscow State University, Moscow, Russia.
- Shulgina TM, Shchepashchenko D, Shvidenko A & Gordov EP (2009). Climate change

dynamics and its impact on productivity of the Russian forest ecosystems. In: *International Conference on Computational Information Technologies for Environmental Science - CITES-2009*, 11-15 July 2009, Krasnoyarsk, Russia, pp.77-78.

Shvidenko A (2009). Non-boreal forests of Eastern Europe in a changing world: The role in the earth system. In: Groisman PY & Ivanov SV (eds), *Regional Aspects of Climate-Terrestrial-Hydrologic Interactions in Non-boreal Eastern Europe*. Springer-Verlag, Dordrecht, Netherlands pp.123-133.

Shvidenko A (2009). Terrestrial ecosystems in Northern Asia, global change and post Kyoto developments. In: *Resource Economics, Environmental Economics and Climate Change - 2009: Proceedings of International Conference*. 1-7 July 2009, Siberian Federal University, Krasnoyarsk, Russia pp.665-678.

Shvidenko A & Gustafson E (2009). Forest forming process and dynamic vegetation models under global change. In: *Ecological and Geographic Aspects of Forest Forming Process: Proceedings of the All-Russian Science Conference with International Participation*. 23-25 September 2009, Krasnoyarsk, Russia, pp.19-22.

Shvidenko A, Schepaschenko D, McCallum I, Kraxner F, Nilsson S & Maksyutov S (2009). Verified terrestrial ecosystems full carbon account for Russia: A reanalysis (Abstract). In: *8th International Carbon Dioxide Conference*, 13-19 September 2009, Jena, Germany.

Shvidenko A, Schepaschenko D, McCallum I, Nilsson S & Sukhinin A (2009). Carbon and nitrogen emissions due to vegetation fire in Russia in 2004-2008 (Abstract). *Geophysical Research Abstracts*, 11:EGU2009-6906.

Shvidenko A, Schepaschenko D, McCallum I & Sukhinin A (2009). Impacts of vegetation fire in Russia on global carbon cycles in the past five years (Abstract). In: *International Conference on Computational Information Technologies for Environmental Science - CITES-2009*, 11-15 July 2009, Krasnoyarsk, Russia p.80.

Shvidenko AZ, McCallum I, Sokolov VA, Vedrova EF, Vtyurina OP, Chuprova VV & Schullius C (2009). Aspects of realizing the Kyoto Protocol in Krasnoyarsk Krai. *Forest Inventory and Forest Management*, 1(41):116-132 (March 2009).

Shvidenko AZ, Schepaschenko DG & Nilsson S (2009). Assessment of wood detritus storage in forests of Russia. *Forest Inventory and Forest Management*, 1(41):133-147 (March 2009).

Shvidenko AZ, Sokolov VA, Vtorina OP, Vedrova EF & Chuprova VV (2009). Aspects of realization of the Kyoto Protocol provisions in Krasnoyarsk krai. In: Semechkin IV (ed.), *Management of Sustainable Forestry in Krasnoyarsk krai*. Sukachev Institute of Forest SB RAS, Novosibirsk, Russia pp.176-197 (2009).

Smirnov A & Obersteiner M (2009). Will GEO work? -- An economist view. In: *Proceedings from the 33rd International Symposium on Remote Sensing of Environment (ISRSE-33) "Sustaining the Millennium Development Goals"*. 4-8 May 2009, Stresa, Italy.

Sokolov VA, Shvidenko AZ, Vtorina OP, Vedrova EF & Chuprova VV (2009). Terrestrial ecosystems in Northern Asia, global change and post Kyoto developments. In: *Resource Economics, Environmental Economics and Climate Change - 2009: Proceedings of International Conference*. 1-7 July 2009, Siberian Federal University, Krasnoyarsk, Russia pp.871-880.

Szolgayova J, Fuss S, Khabarov N & Obersteiner M (2009). A dynamic CVaR-portfolio approach using real options: An application to energy investments. In: *2009 6th International Conference on the European Energy Market (EEM 2009)*. 27-29 May 2009, Leuven, Belgium.

Watanabe C, Shin J, Heikkinen J & Tarasyev A (2009). Optimal dynamics of functionality development in open innovation. In: *Proceedings of CAO'09: IFAC Workshop on Control Applications of Optimisation*. 6-8 May 2009, University of Jyvaeskylae, Agora, Finland.

Williams M, Ryan C, Grace J, Shvidenko A, Schepaschenko D, Ciis P, Maniatis D, Malhi Y & Schaphoff S (2009). BIOMASS Report: A Contribution to the Scientific Case for the P-Band BIOMASS Mission Proposal. Final Report to Sponsor: European Space Agency (October 2009).

Zhuang Q, Melillo J, Reilly J, McGuire A, Prinn R, Shvidenko A, Tchebakova N, Sirin A, Maksyutov S & Peregon A (2009). Changes of land cover and land use and greenhouse gas emissions in northern Eurasia (Abstract). *Geophysical Research Abstracts*, 11:EGU2009-9772.

## 2008

Aseev SM & Kryazhimskiy AV (2008). On a class of optimal control problems arising in mathematical economics. *Proceedings of the Steklov Institute of Mathematics*, 262(1):10-25 (September 2008).

Aseev SM & Kryazhimskiy AV (2008). Shadow prices in infinite-horizon optimal control problems with dominating discounts. *Applied Mathematics and Computation*, 204(2):519-531 (15 October 2008).

Bercovitch J, Kremenyuk VA & Zartman IW (eds) (2008). *The SAGE Handbook of Conflict Resolution*. Sage Publications, London, UK.

Brigolin D, Davydov AA, Pastres R & Petrenko I (2008). Optimization of shellfish production carrying capacity at a farm scale. *Applied Mathematics and Computation*, 204(2):532-540 (15 October 2008).

Davydov AA & Komarov MA (2008). Local controllability bifurcations in families of bidynamical systems on the plane. *Proceedings of the Steklov Institute of Mathematics*, 261:84-93 [2008].

Davydov AA & Kukshina EO (2008). Typical profit singularities of one-parametric cyclic process with fixed period. *Optimization*, 2(2):1-10 [2008].

Fath BD, Kryazhimskiy AV, Liljenstroem H & Rovenskaya E (2008). Introduction: towards the design of an integrated socio-environmental assessment model for the Baltic Sea region. In: Neittaanmaki P, Piriaux J & Tuovinen T (eds), *Evolutionary Methods for Design, Optimization and Control: Applications to Industrial and Societal Problems*. CIMNE, Barcelona, Spain pp. 425-429.

Fortin I, Fuss S, Hlouskova J, Khabarov N, Obersteiner M & Szolgayova J (2008). An integrated CVaR and real options approach to investments in the energy sector. *The Journal of Energy Markets*, 1(2):61-85 (Summer 2008).

Gusti M, Jonas M, Shvidenko A & McCallum I (2008). How well do we know Russia's carbon budget for 1988-1992? Critical look from uncertainty study of IIASA's full carbon account. In: Di X, Wang C & Wang X (eds), *Program and Abstract Book*. The 14th Scientific Conference

of the International Boreal Forest Research Association (IBFRA), 22-27 September 2008, Harbin, China p.152.

Khabarov N, Moltchanova E & Obersteiner M (2008). Valuing weather observation systems for forest fire management. *Systems Journal, IEEE*, 2(3):349-357 (September 2008).

Krasovskii AA, Kryazhimskiy A & Tarasyev A (2008). Optimal control design in models of economic growth. In: Neittaanmaki J, Piriaux T & Tuovinen P (eds), *Evolutionary Methods for Design, Optimization and Control*. CIMNE, Barcelona, Spain pp.70-75.

Krasovskii AA & Tarasyev AM (2008). Mathematical models of economic growth. *Vestnik of the Liberal Arts University, Ekaterinburg*, 1(8):109-136 [2008].

Krasovskii AA & Tarasyev AM (2008). Optimization of the stopping time in multilevel dynamic systems. *Journal of Udmurt University. Series Mathematics*, 2008(2):[2008].

Krasovskii AA, Tarasyev AM & Watanabe C (2008). Assessment of the Market Development Trajectory for Optimal Timing of Technological Innovation. IIASA Interim Report IR-08-007.

Kryazhimskiy AV & Maksimov VI (2008). On rough inversion of a dynamical system with a disturbance. *Inverse and Ill-Posed Problems*, 16(6):587-600 [2008].

Kryazhimskiy AV, Maksimov VI, Rovenskaya E & Rodkin MV (2008). On a regime of repetition of strong low-frequency events (catastrophes): new approaches and results of their applications. In: *Change in the Environment and Climate. Natural Catastrophes and Induced Technogenic Catastrophes*. Institute of Geography, Russian Academy of Sciences, Moscow, Russia pp. 158-189 [2008].

Kryazhimskiy AV, Obersteiner M & Smirnov A (2008). Infinite-horizon dynamic programming and application to management of economies effected by random natural hazards. *Applied Mathematics and Computation*, 204(2):609-620 [2008].

Lutz W, Sanderson W, Scherbov S & KC S (2008). *Demographic and Human-Capital Trends in Eastern Europe and Sub-Saharan Africa*. Migration Policy Institute, Washington, DC, USA (November 2008).

Lutz W, Sanderson W, Scherbov S & KC S (2008). Demographic and Human-Capital Trends in Eastern Europe and Sub-Saharan Africa. Migration Policy Institute, Washington, DC, USA (November 2008).

Lutz W, Sanderson WC & Scherbov S (2008). The coming acceleration of global population ageing. *Nature*, 451(7179):716-719 (7 February 2008).

Lutz W, Sanderson WC & Scherbov S (2008). Global and regional population ageing: How certain are we of its dimensions? *Population Ageing*, 1(1):75-97 (March 2008).

Lutz W, Sanderson WC & Scherbov S (2008). Global and Regional Population Ageing: How Certain Are We of its Dimensions? IIASA Interim Report IR-08-015.

Lutz W & Scherbov S (2008). Can immigration compensate for Europe's low fertility? In: Festy P & Sardon J-P (eds), *Hommage a Gerard Calot: Profession, Demographe*. Institut National d'Etudes Demographiques (INED), Paris, France pp.255-264 (2008).

Lutz W & Scherbov S (2008). Exploratory Extension of IIASA's World Population Projections: Scenarios to 2300. IIASA Interim Report IR-08-022.

- Lutz W & Scherbov S (2008). O contributo da imigracao para o futuro demografico da Europa. In: Papademetriou DG (ed.), *A Europa e os Seus Imigrantes no Seculo XXI*. Fundacao Luso-Americana para o Desenvolvimento, Lisbon, Portugal pp.243-259 (2008).
- Minullin Y (2008). Queuing to China's gas market. *The Oil of Russia Journal*, 5:104-108 [2008].
- Minullin Y (2008). Whose pipeline will go East? *The Oil of Russia Journal*, 3:106-109 [2008].
- O'Neill BC & Melnikov NB (2008). Learning about parameter and structural uncertainty in carbon cycle models. *Climatic Change*, 89(1-2):23-44 [2008].
- Ortiz-Moctezuma MB, Pivovarchuk D, Szolgayova J & Fuss S (2008). Development of Transportation Infrastructure in the Context of Economic Growth. IIASA Interim Report IR-08-045.
- Pivovarchuk D (2008). Consistency Between Long-term Climate Target and Short-term Abatement Policy. Attainability Analysis Technique. IIASA Interim Report IR-08-017.
- Qiang R, Zheng X-Y, Lutz W & Scherbov S (2008). Uncertain demographic dynamics in China. *Chinese Journal of Population Science*, 6:19-27(2008).
- Rovenskaya E (2008). Optimal Economic Growth under Stochastic Environmental Impact: Sensitivity Analysis. IIASA Interim Report IR-08-030.
- Sanderson WC & Scherbov S (2008). Rethinking age and aging. *Population Bulletin*, 63(4):1-16 (December 2008).
- Scherbov S & Ediev DM (2008). Probabilistic Household Projections based on an Extension of the Headship Rates Method with an Application to the Case of Russia. IIASA Interim Report IR-08-002.
- Shibayev SV & Tarasyev AM (2008). Decentralized searching of market equilibrium. In: Neittaanmaki P, Piriaux J & Tuovinen T (eds), *Evolutionary Methods for Design, Optimization and Control*. CIMNE, Barcelona, Spain pp.445-450.
- Shvidenko A (2008). About normal stands, truth and scientific ethics. *Forest Inventory and Planning*, 1(39):6-9.
- Shvidenko A (2008). Deforestation. In: Jorgenssen SE & Fath BD (eds), *Encyclopedia of Ecology*. Elsevier, Amsterdam, Netherlands pp.853-859 (2008).
- Shvidenko A, Nilsson S, Shchepashchenko DG & McCallum I (2008). Productivity of northern Eurasian forests in a changing world. In: Di X, Wang C & Wang X (eds), *Program and Abstract Book*. The 14th Scientific Conference of the International Boreal Forest Research Association (IBFRA), 22-27 September 2008, Harbin, China pp.33-34.
- Shvidenko A, Shchepashchenko DG, McCallum I & Nilsson S (2008). Land cover of Russia: system integration of remote sensing and ground data. In: *Enviromis 2008. International Conference on Environmental Observations, Modeling and Information Systems*. 28 June-6 July 2008, Tomsk, Russia p.115 [2008].
- Shvidenko A, Shchepashchenko DG & Nilsson S (2008). Current increment of forests of Russia: An estimate at beginning of the 3rd Millennium. *Forest Inventory and Planning*,

1(39):83-100 [2008].

Shvidenko A, Shchepashchenko DG & Nilsson S (2008). Materials to understanding productivity of Russian forests. In: *Proceedings of the International Workshop on Sustainable Management of Russian Forests*. 5 December 2007, Krasnoyarsk, Russia pp. 1-31 [2008].

Shvidenko A, Shchepashchenko DG, Nilsson S & Buluy YI (2008). Tables and Models of Growth and Productivity of Forests of Major Forest Forming Species of Northern Eurasia (Standard and Reference Materials). Federal Agency of Forest Management; Moscow, Russia [2008].

Shvidenko A, Shchepashchenko DG, Nilsson S & McCallum I (2008). Major indicators of productivity of Russian forests: a system reanalysis. In: *Enviromis 2008. International Conference on Environmental Observations, Modeling and Information Systems*. 28 June-6 July 2008, Tomsk, Russia pp. 99-100 [2008].

Shvidenko AZ, Shchepashchenko DG, Nilsson S & Vaganov EA (2008). Net primary production of forest ecosystems of Russia: A new estimate. *Doklady Earth Sciences*, 421A(6):1009-1012 [2008].

Smirnov A (2008). Necessary optimality conditions for a class of optimal control problems with discontinuous integrand. *Proceedings of the Steklov Institute of Mathematics*, 262(1):213-230 [2008].