

CURRICULUM VITAE *

Dr. Andrey Krasovskiy
Senior Research Scholar
Agriculture, Forestry and Ecosystem Services (AFE) Group
Biodiversity and Natural Resources (BNR) Program
International Institute for Applied Systems Analysis (IIASA)
Schlossplatz 1, A-2361 Laxenburg, Austria



E-mail: krasov@iiasa.ac.at

☎ +43 2236 807 390

Web: <https://iiasa.ac.at/staff/andrey-krasovskiy>

1 About A. Krasovskiy

Dr. Krasovskiy is a versatile mathematical modeler with expertise in simulations, control problems, and optimization, applied across ecosystems, economics, technology, and social sciences. His research covers land use and forest modeling, with a specific focus on wildland fires across Europe, Eurasia (including Russia), Asia (including Indonesia), the Boreal zone, and globally.

As the primary developer of FLAM, a mechanistic fire model integrated into the IIASA biophysical model cluster, he plays a pivotal role in assessing and projecting burned areas and fire adaptation strategies in the context of climate change^(**). His research interests also extend to dynamic optimization in economic growth and investment models, the evaluation of REDD-based offsets with financial benefit-sharing mechanisms, wildlife population modeling, permanence modeling, and the optimization of election policies within age-structured societies.

Dr. Krasovskiy's journey at IIASA began with the prestigious Mikhalevich Award in 2006. Over the years, he transitioned to the Ecosystems Services and Management Program (ESM) in 2012 and currently leads the FLAM team within the Agriculture, Forestry, and Ecosystem Services (AFE) research group, making significant contributions to the Biodiversity and Natural Resources (BNR) program.

2 Professional experience

01/2024 – present time	Senior Research Scholar at IIASA, Laxenburg, Austria Biodiversity and Natural Resources (BNR) Program Agriculture, Forestry and Ecosystem Services (AFE)
12/2011 – 12/2023	Research Scholar at IIASA, Laxenburg, Austria
03/2013 – 03/2014	Associate Lecturer at Vienna University of Economics and Business (WU Wien)
02/2009 – 05/2010	Junior Researcher at Vienna Institute of Demography (VID) Austrian Academy of Sciences (ÖAW), Vienna, Austria Population Economics Group
10/2008 – 12/2011	Research Scholar at Institute of Mathematics and Mechanics (IMM) Ural Branch of Russian Academy of Sciences, Ekaterinburg, Russia Dynamic Systems Department
07/2007 – 10/2007	Research Assistant (Mikhalevich Award) at IIASA

*Last updated on May 15, 2024

(**)More information about the wildfire climate impacts and adaptation model (FLAM) is available online:
<http://www.iiasa.ac.at/FLAM>

3 Research interests

Mathematical modeling and simulations; Control and optimization; Data analysis
Applications in economics, ecosystems, and technology; Software and modeling tools design

4 Education

05/2008	Ph.D. defense on specialty mathematical modeling, numerical methods, and program complexes at the Ural State University, Ekaterinburg, Russia Degree of the Candidate of Physical and Mathematical Sciences
06/2005 – 05/2008	Ph.D. student at the Institute of Mathematics and Mechanics, Ural Branch of the Russian Academy of Sciences, Ekaterinburg, Russia
06/2006 – 08/2006	Young Scientists Summer Program (YSSP) International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria
06/1999 – 06/2005	Master's Degree in Applied Mathematics and Physics from the Ural State Technical University, Ekaterinburg, Russia Department of Physics and Technology, Chair of Theoretical Physics
06/1989 – 06/1999	School Certificate in Linguistics Gymnasium No. 13, Ekaterinburg, Russia Specialization in Physics and Mathematics

5 Technical skills

Operating system (OS)	Windows, Ubuntu, OS X
Statistics software	R, SPSS, Excel
Mathematical modeling software	Matlab, Maple, MathCad, Mathematica, Vensim, Scientific WorkPlace, Dynare
Programming languages	Pascal, Delphi, C, Python, Java, NetBeans, PHP, VBA
Geographic information system	QGIS, GRASS GIS, SAGA GIS
Text editing and graphics software	L ^A T _E X, MS Office, LibreOffice, HTML, CSS, Visio, Adobe Illustrator, Photoshop, InDesign, GIMP, Inkscape, Beamer
Database management systems	MySQL
Content management systems	Joomla, WordPress
Other	Excel ↔ VBA ↔ GAMS interface design

6 Language skills

English: fluent; German: ÖSD Zertifikat Deutsch Österreich B1, ÖIF Integrationsprüfung: Sprachkompetenz (Niveau: B1), Werte- und Orientierungswissen; Russian: native language.

7 Teaching

June 13-16, 2022	Lecturer at the FireLinks Summer School: “Bridging the gap between fire behaviour and fire ecology”, Universitat Politècnica de Catalunya, Barcelona, Spain
2013 - 2014	Associate lecturer at Vienna University of Economics and Business (WU Wien) <ul style="list-style-type: none">• Winter term 2013/2014: Course #1880 – Applied Microeconomics• Summer term 2013: Course #5939 – Applied Microeconomics Language: English; Class size: 40 students
2005 - 2008	Assistant lecturer at the Ural State Technical University, Ekaterinburg, Russia Courses on probability theory and statistics, control, mathematical modeling

8 Supervision of PhD and Master Students

Summer 2023

Supervision of the IIASA-YSSP PhD student:

- Laura Montoya-Perez, National Autonomous University of Mexico, México
Project title: “Data-driven modeling of fires in a megadiverse country”

Co-supervision of the IIASA-YSSP PhD student:

- Adrian Dwiputra, National University of Singapore, Singapore
Project title: “Characterization of initial fire points in equatorial southeast Asia in 2014-2016”

Co-supervision of the IIASA-YSSP PhD student:

- Nadine-Cyra Freistetter, Finnish Meteorological Institute, Finland
Project title: “A Database for landscape-scale modelling of bark beetle forest damage in Europe”

Supervision of two intern Master students:

- Rasheed Akinleye Hammed and Gbenga Lawrence Alawode, University of Eastern Finland
Project title: “Exploring drivers of wildland fires in Spain”

Supervision of the intern Master student:

- Camila Maciel Viana, Universidad de Valladolid, Spain
Project title: “Application of the wildfire climate impacts and adaptation model (FLAM) to Boreal forests”

Summer 2022

Supervision of the IIASA-YSSP PhD student:

- Hyun-Woo Jo, Korea University, Seoul, Republic of Korea
Project title: “Optimization of the IIASA’s FLAM model to represent forest fires in South Korea”

Supervision of two intern Master students:

- Zhong Haoming and Arnaldo M. C. da Silva, University of Eastern Finland
Project title: “Suitability maps for tree species under different climate change scenarios in the Alpine region: Threshold optimization”

10/2020 – 10/2021

Co-supervision with Cristina Vega of the Master Student

- Jinshuang Niu, University of Eastern Finland
Master Thesis title: “Analysis of Forest Fire Dynamics and Contributing Factors in Finland and Sweden over 2010-2018” defended at the University of Lleida, Spain, on October 28, 2021

Summer 2021

Supervision of intern Master student:

- Shelby Corning, University of Eastern Finland
Project title: “Spreading Like Wildfire: Disturbance Interactions and Remote Sensing in Colorado, USA”

- Summer 2021 Supervision of the IIASA-YSSP PhD student:
- Eunbeen Park, Korea University
Project title: “Assessment of afforestation options with special emphasis on forest productivity and carbon storage in North Korea”
- Co-supervision of two IIASA-YSSP PhD students:
- Kevin van Sundert, University of Antwerp
Project title: “The case for incorporating soil nutrient availability into forest models”
 - Stephen Bell, Institut de Ciència i Tecnologia Ambientals, Spain
Project title: “Soil carbon sequestration following agricultural land abandonment in the EU”
- 07/2021 – 08/2021 Supervision of the Short-Term Scientific Mission (FireLinks COST Action)
- Reinis Cimdinš, University of Eastern Finland
Project title: “Burned area, weather, landscape and socioeconomic spatial interaction analysis: case study in Sweden”
- 07/2020 – 09/2020 Supervision of two intern Master students:
- Jinshuang Niu and Reinis Cimdinš, University of Eastern Finland
Project title: “Burned area, weather, landscape and socioeconomic spatial interaction analysis: case study in Finland and Sweden”
- Summer 2019 Supervision of the IIASA-YSSP PhD student:
- Xikun Hu, KTH Royal Institute of Technology, Stockholm, Sweden
Project title: “Modeling Burned Areas Based On FLAM Using Deep Learning-Based Methods”
- Supervision of the intern Master student:
- Camila Maciel Viana, FCA Unesp, Brazil
Project title: “Biophysical modeling of new generation plantations in the Brazilian Amazon Forest”
- Summer 2018 Co-supervision with Stephan Pietsch of the IIASA-YSSP PhD student:
- Camila Thiemy Dias Numazawa, University of São Paulo, Brazil
Project title: “Multiple benefits from advanced forest management in the Brazilian Amazon: the coupled BGC-MAN/G4M approach”
- Summer 2017 Supervision of the IIASA-YSSP PhD student:
- Hadi, Aalto University, Finland
Project title: “Three decades of forest cover changes in the humid tropical Indonesia: detection and verification at high resolution”

9 Editorial duties

2023 – present time	Editor of the Special Issue “Patterns, Drivers, and Multiscale Impacts of Wildland Fires”, <i>Fire</i> (MDPI)
2021 – present time	Review Editor on the Editorial Board of <i>Fire and Forests</i> (specialty section of <i>Frontiers in Forests and Global Change</i>)
2020 – present time	Review Board Member, <i>Forests</i> (MDPI)
2019 – present time	Review Editor on the Editorial Board of <i>Negative Emission Technologies</i> , part of the journal <i>Frontiers in Climate</i>
2019 – present time	Editorial Council Member, <i>Bulletin of Liberal Arts University</i>
2021 – 2023	Editor of the Special Issue “Latest Advances in Remote Sensing-Based Environmental Dynamic Models”, <i>Remote Sensing</i> (MDPI)

10 Society fellows

2008 – present time	Member, Technical Committee 2.4 on Optimal Control of the International Federation of Automatic Control (IFAC)
2020 – 2023	MC Member, Cost Action CA18135 – <i>Fire in the Earth System: Science & Society</i>
2019 – 2022	Member, Taskforce “FIRE\$: Economic Drivers of Global Wildland Fire Activity”, International Union of Forest Research Organizations (IUFRO)

11 Selected presentations

- Krasovskiy A., *Forestry and Wildland Fire Modelling at Multiple Scales and Resolutions* // Invited speaker at the Thematic Session on Latest Advances in Remote Sensing-based Environmental Dynamic Models, XX Brazilian Symposium on Remote Sensing (SBSR 2023), April 2-5, 2023, Florianópolis, SC, Brazil
- Krasovskiy A., *Forest modeling under climate change and management scenarios* // IIASA 50th Anniversary Conference, “Systems Analysis as a Global Approach: Science and Sustainability in the Mid-Latitude Region”, October 12, 2022, Seoul, Republic of Korea
- Krasovskii A., *Modeling wildfire dynamics: the FLAM approach* // Side event on forest fires at the French Pavilion, organized by the French Ministry of Agriculture and Food, UN Climate Change Conference 2018 (COP’24), 8 December 2018, Katowice, Poland

12 Publications

Full list is available at <http://pure.iiasa.ac.at/view/iiasa/164.html>

ORCID iD: 0000-0003-0940-9366;

Scopus Author ID: 7006752493; *h*-index: 11 (Scopus)