

CURRICULUM VITAE TAMÁS KRISZTIN

PERSONAL INFORMATION

Tamás Krisztin, PhD
Senior Research Scholar
Integrated Biosphere Futures (IBF) Research Group
Biodiversity and Natural Resources (BNR) Program
International Institute for Applied Systems Analysis (IIASA)
Schlossplatz 1, 2361 Laxenburg, Austria
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RESEARCH INTERESTS

Bayesian Econometrics, Applied Econometrics, Spatial Econometrics and Statistics, Environmental Economics, Time-series modelling, Macroeconomics, Machine Learning

ACADEMIC DEGREES

PhD degree, Vienna University of Economics and Business, July 2017, in Economic and Social Sciences, Thesis entitled – *Three essays in spatial econometric modeling of regional freight*

MSc degree, Vienna University of Economics and Business, July 2010, in Information Systems, Thesis entitled – *Software Agents and Location Based Services: A Prototype for Tourism Applications*

BSc degree, Vienna University of Economics and Business, July 2007, in Information Systems, Thesis entitled – *An implementation of the C4.5 algorithm for searching through podcast metadata*

ACADEMIC DEGREES AND POSITIONS

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| 2021 - 2022 | Senior Research Scholar, International Institute for Applied Systems Analysis (IIASA), Integrated Biosphere Futures (IBF) Research Group |
| 2015 - 2021 | Research Scholar, International Institute for Applied Systems Analysis (IIASA), Center for Environmental Resources Development |
| 2010 – 2015 | Research and Teaching Assistant, Vienna University of Economics and Business, Department of SocioEconomics, Institute of Economic Geography and GIScience |
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AWARDS

Winner of the 2018 Stephan Koren Prize for the dissertation "Three essays in spatial econometric modeling of regional freight" awarded by the Vienna University of Economics and Business

RESEARCH GRANTS

Horizon Europe , Grant number: 101060423, LAMASUS - Land-Use Management for Sustainability, Scientific Coordinator, 2022-2026, EUR 5,000,000.00 **ongoing**

Jubiläumsfonds of the Austrian National Bank , Grant number: 18755, Long-term impacts of financial markets on the environment: A combined methods approach, PI: Michael Kuhn, 2022-2024, EUR 113,990.00 **ongoing**

Jubiläumsfonds of the Austrian National Bank , Grant number: 18205, Bilateral trade in agricultural commodities: A spatial econometric framework, PI: Valin Hugo, 2021-2023, EUR 113,990.00 **ongoing**

Jubiläumsfonds of the Austrian National Bank , Grant number: 18307, Fostering development: Agricultural technological change and economic growth, PI: Tamás Krisztin, 2020-2024, EUR 109,220.00 **ongoing**

Jubiläumsfonds of the Austrian National Bank , Grant number: 18442, Climate change and commodity futures markets, PI: Michael Obersteiner, 2020-2024, EUR 107,950.00 **ongoing**

Jubiläumsfonds of the Austrian National Bank , Grant number: 18043, The economic impacts of land-use change: A within- and cross-country study, PI: Petr Havlík, 2019-2020, EUR 103,000.00 **completed**

Jubiläumsfonds of the Austrian National Bank , Grant number: 18116, Modeling European regional FDI flows: A spatial perspective, PI: Matthias Firgo, 2018-2019, EUR 107,950, **completed**

PEER REVIEWED JOURNAL PUBLICATIONS

2022 Using large ensembles of climate change mitigation scenarios for robust insights [jointly with Guivarch C, Le Gallic T, Bauer N. (core authors) et al.], **Nature Climate Change**, 12, 428–435, [10.1038/s41558-022-01349-x](https://doi.org/10.1038/s41558-022-01349-x).

A Bayesian approach for the estimation of weight matrices in spatial autoregressive models [jointly with Piribauer P], **Spatial Economic Analysis**, 1-20, [10.1080/17421772.2022.2095426](https://doi.org/10.1080/17421772.2022.2095426).

A spatial multinomial logit model for analysing urban expansion [jointly with Piribauer P, Wögerer M], **Spatial Economic Analysis**, (in print), [10.1080/17421772.2021.1933579](https://doi.org/10.1080/17421772.2021.1933579).

2021 International trade is a key component of climate change adaptation [jointly with Charlotte J, Havlík P, Baker J (core authors) et al.], **Nature Climate Change**, (in print), [10.1038/s41558-021-01201-8](https://doi.org/10.1038/s41558-021-01201-8).

Spatial spillover effects from agriculture drive deforestation in Mato Grosso, Brazil [jointly with Kuschnig N, Crespo JC, Giljum S], **Scientific Reports** 11(1), 1-9, [10.1038/s41598-021-00861-y](https://doi.org/10.1038/s41598-021-00861-y).

A Bayesian spatial autoregressive logit model with an empirical application to European regional FDI flows [jointly with Piribauer P], **Empirical Economics**, 61(1), 231-257, doi:[10.1007/s00181-020-01856-w](https://doi.org/10.1007/s00181-020-01856-w).

Modeling European regional FDI flows using a Bayesian spatial Poisson interaction model [jointly with Piribauer P], **Annals of Regional Science**, 67, 593–616, [10.1007/s00168-021-01058-x](https://doi.org/10.1007/s00168-021-01058-x).

Land-based climate change mitigation potentials within the agenda for sustainable development [jointly with Frank S, Gusti M, Havlík P, Lauri P (core authors) et al.], **Environmental Research Letters**, 16(2), 024006, [10.1088/1748-9326/abc58a](https://doi.org/10.1088/1748-9326/abc58a).

2020 A cost–benefit analysis of implementing urban heat island adaptation measures in small- and medium-sized cities in Austria [jointly with Johnson D, See L, Oswald SM, Prokop G], **Environment and Planning B: Urban Analytics and City Science**, (in print), [10.1177/2399808320974689](https://doi.org/10.1177/2399808320974689).

- The spatial econometrics of the coronavirus pandemic [jointly with Piribauer P, Wögerer M], **Letters in Spatial and Resource Sciences**, 13(3), 209-218, doi:[10.1007/s12076-020-00254-1](https://doi.org/10.1007/s12076-020-00254-1).
- Country level relationships of the human intake of N and P, animal and vegetable food and alcoholic beverages with cancer and life expectancy [jointly with Penuelas J, Obersteiner M, Huber F, Winner H, Janssens I, Ciais P, Sardans J], **International Journal of Environmental Research and Public Health**, 17(19), 7240, [10.3390/ijerph17197240](https://doi.org/10.3390/ijerph17197240).
- Harmonization of Global Land-Use Change and Management for the Period 850–2100 (LUH2) for CMIP6 [jointly with Hurtt GC, Chini L, Sahajpal R (core authors) et al.], **Geoscientific Model Development**, 13(1), 5425-5464, [10.5194/gmd-2019-360](https://doi.org/10.5194/gmd-2019-360).
- Bending the curve of terrestrial biodiversity needs an integrated strategy [jointly with Leclere D, Obersteiner M, Visconti P (core authors) et al.], **Nature**, 585 (7826), 551–556, doi:[10.1038/s41586-020-2705-y](https://doi.org/10.1038/s41586-020-2705-y).
- Global hunger and climate change adaptation through international trade [jointly with Charlotte J, Havlík P, Baker J (core authors) et al.], **Nature Climate Change**, 10(9), 829–835, doi:[10.1038/s41558-020-0847-4](https://doi.org/10.1038/s41558-020-0847-4).
- Bioeconomic transition – Fossil and biomass resource use under the Shared Socioeconomic Pathways [jointly with Asada R, Kraxner F, Fulvio Di Fulvio F, Stern T], **Journal of Industrial Ecology**, 24(5), 1059-1073, doi:[10.1111/jiec.12988](https://doi.org/10.1111/jiec.12988).
- Comparing the impact of future cropland expansion on global biodiversity and carbon storage across models and scenarios [jointly with Molotoks A, Henry R, Stehfest E, Havlík P, Alexander P, Dawson T, Smith P], **Philosophical Transactions of the Royal Society B**, 375(1794), 20190189, doi:[10.1098/rstb.2019.0189](https://doi.org/10.1098/rstb.2019.0189).
- Water resources as determinants for foreign direct investments in land – A gravity analysis of foreign land acquisitions [jointly with Cornelius H, See L], **Ecological Economics**, 170, 106516, doi:[10.1016/j.ecolecon.2019.106516](https://doi.org/10.1016/j.ecolecon.2019.106516).
- 2019 Increasing Nitrogen Export to Sea: A Scenario Analysis for the Indus River [jointly with Wang M, Tang T, Burek P (core authors) et al.], **Science of the Total Environment**, 694: 133629, doi:[10.1016/j.scitotenv.2019.133629](https://doi.org/10.1016/j.scitotenv.2019.133629)
- The vulnerabilities of agricultural land and food production to future water scarcity [jointly with Fitton N (core author) et al.], **Global Environmental Change**, 58, doi:[10.1016/j.gloenvcha.2019.101944](https://doi.org/10.1016/j.gloenvcha.2019.101944)
- Simulated impact of paleoclimate change on Fremont native American maize farming in Utah, 850–1449 CE, using crop and climate models [jointly with Balkovic J, MacDonald GM, Thomson MJ], **Quaternary International**, 507: 95-107, doi:[10.1016/j.quaint.2018.09.031](https://doi.org/10.1016/j.quaint.2018.09.031)
- 2018 The role of trade in the greenhouse gas footprints of EU diets [jointly with Havlík P, Herrero M, Kastner T, Sandström V, Valin H], **Global Food Security**, 19: 48-55, doi:[10.1016/j.gfs.2018.08.007](https://doi.org/10.1016/j.gfs.2018.08.007)
- Semi-parametric spatial autoregressive models in freight generation modeling, **Transportation Research, Part E**, 114: 121-43, doi:[10.1016/j.tre.2018.03.003](https://doi.org/10.1016/j.tre.2018.03.003)
- Climate extremes, land-climate feedbacks, and land-use forcing at 1.5°C [jointly with Hirsch AL, Guillod BP, Brovkin V, Schaller N, Seneviratne SI, Vogel MM, van Vuuren D, Wartenburger R (core authors) et al.], **Philosophical Transactions of the Royal Society A**, 376: doi:[10.1098/rsta.2016.0450](https://doi.org/10.1098/rsta.2016.0450)
- 2017 Increasing gap in human height between rich and poor countries associated to their different intakes of N and P* [jointly with Ciais P, Janssens IA, Obersteiner M, Peñuelas J, Piao S, Sardans J], **Nature - Scientific Reports**, 7(1): 17671, doi:[10.1038/s41598-017-17880-3](https://doi.org/10.1038/s41598-017-17880-3)

- The determinants of regional freight transport: A spatial, semiparametric approach, **Geographical Analysis**, 49(3): 268-308, doi:[10.1111/gean.12125](https://doi.org/10.1111/gean.12125)
- Forecasting global equity indices using large Bayesian VARs* [jointly with Huber F, Piribauer P], **Bulletin of Economic Research**, 69(3): 288-308, doi:[10.1111/boer.12094](https://doi.org/10.1111/boer.12094)
- Assessing uncertainties in land cover projections [jointly with Alexander P, Prestele R, Verburg PH (core authors) et al.], **Global Change Biology**, 23(2): 767-81, doi:[10.1111/gcb.13447](https://doi.org/10.1111/gcb.13447)
- 2016 Hotspots of uncertainty in land use and land cover change projections: A global scale model comparison [jointly with Alexander P, Prestele R, Rounsevell MDA (core authors) et al.], **Global Change Biology**, 22(12): 3967-83, doi:[10.1111/gcb.13337](https://doi.org/10.1111/gcb.13337)
- 2015 The gravity model for international trade: Specification and estimation issues in the prevalence of zero flows [jointly with with Fischer MM], **Spatial Economic Analysis**, 10(4): 451-70, doi:[10.1080/17421772.2015.1076575](https://doi.org/10.1080/17421772.2015.1076575)
- 2011 Applications for asynchronous multi-agent teams in nonlinear applied spatial econometrics [jointly with Koch M], **Journal of Internet Technology**, 12(6): 1007-14, doi:[10.6138/JIT.2011.12.6.14](https://doi.org/10.6138/JIT.2011.12.6.14)
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PAPERS UNDER SUBMISSION/REVISION

- Do mining activities foster regional development? Evidence from Latin America in a spatial econometric framework [jointly with Luckeneder S, Giljum S], *Spatial Economic Analysis* (under review)
- A Bayesian panel VAR model to analyze the impact of climate change on high-income economies [jointly with Huber F, Pfarrhofer M], *Annals of Applied Statistics* (in print)
- Identifying sustainable biofuel policies for Europe: A multi-criteria assessment [jointly with Frank S, Havlík P, Valin H (core authors) et al.], **Global Change Biology** (revise & resubmit)
- A multi-model quantification of regional and global economic abatement potentials in the land sector. [jointly with Deppermann A, Havlík P (core authors) et al.], **Nature Climate Change** (under review)
- Do large estates benefit smallholder neighbors? Evidence from Malawi [jointly with Joseph J, van Dijk M], **World Development** (under review)
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PEER REVIEWING AND OTHER PROFESSIONAL ACTIVITIES

Bulletin of Economic Research, Spatial Statistics, Spatial Economic Analysis, Ecological Economics, Empirical Economics, Computational Statistics, Journal of Geographical Systems, Journal of Regional Science, Econometrics

Session organizer: Recent advances in spatial econometrics, ERSA, Lyon 2019

PRESENTATIONS AT CONFERENCES/WORKSHOPS IN THE LAST FIVE YEARS

- 2019 12th Geoffrey JD Hewings Regional Economics Workshop on Topics in Applied Regional and Spatial Economics, Topic: *A Bayesian spatial autoregressive logit model with an empirical application to European regional FDI flows*, Vienna, [Austria], October 2019

- 59th Congress, European Regional Science Association, Topic: *A Bayesian spatial autoregressive logit model with an empirical application to European regional FDI flows*, Lyon, [France], August 2019 (**session organizer**)
- 2018 20th Annual Biodiversity and Economics Conference, Topic: *How certain can we be about long-term biodiversity?*, [jointly with Valin H], Cambridge, [UK], September 2018 (**invited talk**)
- 11th Geoffrey JD Hewings Regional Economics Workshop on Topics in Applied Regional and Spatial Economics, Topic: *Bayesian hierarchical models for econometrical downscaling of agricultural land-use data*, Vienna, [Austria], October 2018
- 12th World Congress of the Regional Science Association, Topic: *The gravity model for international trade: Specification and estimation issues* [jointly with Fischer MM], Goa, [India], June 2018,
- 16th Annual Meeting of the Austrian Economic Association, Topic: *A Bayesian hierarchical approach for modeling interregional freight transportation flows*, Vienna, [Austria], May 2018
- 2017 10th International Conference on Computational and Financial Econometrics, Topic: *Estimating global crop price elasticities: A VAR approach*, London, [UK], December 2017 (**invited talk**)
- 2016 9th Geoffrey JD Hewings Regional Economics Workshop on Topics in Applied Regional and Spatial Economics, Topic: *A Bayesian hierarchical modeling approach for explaining interregional freight transportation flows: An application to US commodity flows* [jointly with Piribauer P], Vienna, [Austria], October 2016
- 56th Congress, European Regional Science Association, Topic: *The determinants of global land-use change: A Bayesian approach using the Pólya-Gamma sampler*, Vienna, [Austria], August 2016
- 10th Annual Meeting of the Austrian Economic Association, Topic: *Forecasting global equity indices using large Bayesian VARs* [jointly with Huber F, Piribauer P], Bratislava, [Slovakia], May 2016
- 2015 9th International Conference on Computational and Financial Econometrics, Topic: *Global high-resolution land-use change projections: A Bayesian multinomial logit approach with model uncertainty*, London, [UK], December 2015,
- Systems Analysis 2015 - A Conference in Celebration of Howard Raiffa, Topic: *Global high-resolution land-use change projections: A Bayesian multinomial logit downscaling approach incorporating model uncertainty and spatial effects*, Laxenburg, [Austria], November 2015
- 9th Annual Meeting of the Austrian Economic Association, Topic: *Forecasting global equity indices using large Bayesian VARs* [jointly with Huber F, Piribauer P], Klagenfurt, [Austria], June 2015

TEACHING EXPERIENCE

Undergraduate

Applied Econometrics 3, Bachelor Program Economics, Vienna University of Economics and Business, Summer 2022, [in German and English]

Applied Econometrics 3, Bachelor Program Economics, Vienna University of Economics and Business, Summer 2020, [in German]

Sustainable economics: Regional inequalities and development, Bachelor Program in Business, Economic and Social Sciences, Vienna University of Economics and Business, Summer 2014 and winter 2014, [in German]

Tourism Geography, Bachelor Program in Business, University of Applied Sciences Krems, Winter 2014 - summer 2016, [in English]

Technological change, politics of location and globalization, Bachelor Program in Business, Economic and Social Sciences, Vienna University of Economics and Business, Winter 2013, summer 2014 and winter 2014, [in German]

Graduate

Environmental Economics, Master of Advanced International Studies, Diplomatic Academy of Vienna, Winter 2022, [in English]

Environmental Economics, Master of Advanced International Studies, Diplomatic Academy of Vienna, Winter 2020, [in English]

Spatial Economics, Master Program Economics, Vienna University of Economics and Business, Winter 2018, [in English]

Transportation Geography and Modeling, Master Program Supply Chain Management, Vienna University of Economics and Business, Summer 2014 - winter 2014, [in English]

Interdisciplinary Seminar in Economic Geography jointly with MM Fischer, Master program Social Sciences, Vienna University of Economics and Business, Winter 2012, winter 2013 and winter 2014, [in German]

SUPERVISION OF STUDENTS

IIASA's Young Scientists Summer Program (doctoral level)

Sebastian Luckeneder, "Mining, land use, and regional income in Brazil: Economic and environmental perspectives on resource-dependent development", 2021

Daniel Johnson, "Economic valuation of adaptation scenarios to mitigate the urban heat island effect in small and medium-sized cities ", 2019

Rory Gibbs, "Interacting effects of agricultural, climate and socioeconomic change on Lassa fever in West Africa", 2019

Joseph Julian, "Do large estates benefit smallholder neighbors? Evidence from Malawi", 2019

Raphael Asada, "Bioeconomic Transition: Fossil fuels and biomass consumption under the shared socioeconomic pathways", 2018

Cornelius Hirsch, "The Rush for Foreign Land – Agro-ecological drivers of foreign direct investments in land", 2017

Vilma Sandström, "The role of trade in the greenhouse gas footprints of EU diets", 2017

Marcus James Thompson, "Pre-columbian Native American maize farmers as a model for future subsistence farmer response to climate change", 2016

Master students

Nikolas Kuschnig, "Deforestation, spillover effects, spatial econometrics, agriculture, soybean, land use change", University of Economics and Business, (completed 2019)

Sebastian Luckeneder, "The Impact of Mining Activities – a Spatial Econometric Approach", University of Economics and Business, (completed 2019)

Paul Habjanic, "Spatial dependencies in tourism geography", University of Applied Sciences Krems, (completed 2015)
