

CURRICULUM VITAE Yoshiaki YAMAGATA, Ph.D.



Present Position

Professor, Graduate School of System Design and Management, Keio University

Visiting Professor, The Institute of Statistical Mathematics

Institute Professor (Visiting) , Chuo University Research and Development Initiative

Research scholar, Institute for Applied Systems Analysis (IIASA)

Education

- Doctor of Philosophy, the University of Tokyo (General System Studies)

Career History

1991 National Institute for Environmental Studies (NIES), Senior Researcher

2001 Cabinet Office, Council of Science and Technology Policy, Vice Director)

2006 Center for Global Environmental Research (CGER), Principal Researcher

2013 Head of Global Carbon Project Tsukuba International Office

2021 Graduate School of System Design and Management, Keio University, Professor

Research Topics

- Climate Change Risk Management
- Urban and Regional Carbon Management

International Activities

- LA, RE for IPCC (Climate Change and Land, AR6 Urban Systems etc.)
- Scientific Steering Committee (SSC) of Global Carbon Project (Future Earth)
- Editorial Board member of Journal "Applied Energy" (Elsevier)
- Editorial Board member of Journal "Environment and Planning B" (Sage)

Research and educational positions

- IIASA, Research Scholar
- Science Council of Japan (SCJ), Member (Environment)
- Institute of Statistical Mathematics (ISM), Visiting Professor
- Hokkaido University, Visiting Professor
- Univ. of Tokyo, Sophia Univ. etc. Special Lecturer

Awards

- Oze Prize 1998
- Contributor of 2007 Nobel Peace Prize (IPCC on Climate Change)
- Best Paper Award of Applied Regional Science Conference 2013

Books

- 1) Yamagata Y., Yang P.P.J.:(2020) Urban Systems Design: Creating Sustainable Smart Cities in the Internet of Things Era. Elsevier
- 2) Yamagata Y., Seya H.: (2019) Spatial analysis using big data: Methods and urban applications. Academic Press.
- 3) Yamagata Y., Sharifi A.: (2018) Resilience-Oriented Urban Planning: Theoretical and Empirical Insights. Springer
- 4) Yamagata Y., Maruyama H.: (2016) Urban Resilience – A Transformative Approach. Springer

Refereed Journals

- 1) Assessment of Waterfront Office Redevelopment Plan on Optimal Building Arrangements with Rooftop Photovoltaics: A Case Study for Shinagawa, Tokyo
Younghun Choi , Takuro Kobashi , Yoshiki Yamagata and Akito Murayama
Energies **2022**, 15(3), 883
- 2) Rapid rise of decarbonization potentials of photovoltaics plus electric vehicles in residential houses over commercial districts
Takuro Kobashia, Younghun Choia, Yujiro Hiranob, Yoshiki Yamagataa, Kelvin Sayc
Applied Energy 306 (2022) .01)
- 2) Diverse values of urban-to-rural migration: A case study of Hokuto City, Japan
YasuoTakahashi, Hiroyuki Kubota, Sawako Shigeto, TakahiroYoshida, Yoshiki Yamagata
Journal of Rural Studies 87 292-299(2021.10)
- 3) The Need for Urban Form Data in Spatial Modeling of Urban Carbon Emissions in China: A Critical Review Cai, Meng, Yuan Shi, Chao Ren, Takahiro Yoshida, Yoshiki Yamagata, Chao Ding, Nan Zhou
Journal of Cleaner Production (2021.08)
- 4) Machine learning model for predicting out-of-hospitalcardiac arrests using meteorological and chronological data Takahiro Nakashima, Soshiro Ogata, Teruo Noguchi, Yoshio Tahara, Daisuke Onozuka, Satoshi Kato, Yoshiki Yamagata, Sunao Kojima, Taku Iwami, Tetsuya Sakamoto, Ken Nagao, Hiroshi Nonogi, Satoshi Yasuda, Koji Iihara, Robert Neumar, Kunihiro Nishimura (2021.05)

- 5) SolarEV City concept: building the next urban power and mobility systems
T Kobashi, P Jittrapirom, T Yoshida, Y Hirano, Y Yamagata
Environmental Research Letters 16(2) 024042-024042(2021.02)
- 6) Carbon analytics for net-zero emissions sustainable cities
Ramaswami A, Tong K, Canadell J.G, Jackson R.B, Stokes E, Dhakal S, Finch M,
Jittrapirom P, Singh N, Yamagata Y, Yewdall E, Yona L, Seto K.C Nature
Sustainability 4(6) 460-463 (2021.05)
- 7) Spatiotemporal analysis of deforestation in the Chapare region of Bolivia using
LANDSAT images Bagan H, Millington A, Takeuchi W, Yamagata Y
Land Degradation and Development 31(18) 3024-3039 (2020.12)
- 8) Estimating Building Electricity Performance Gaps with Internet of Things Data Using
Bayesian Multilevel Additive Modeling Chang S, Castro-Lacouture D, Yamagata Y
Journal of Construction Engineering and Management 146(12) (2020.12)
- 9) MIROC-INTEG-LAND version 1: A global biogeochemical land surface model with
human water management, crop growth, and land-use change
Yokohata T, Kinoshita T, Sakurai G, Pokhrel Y, Ito A, Okada M, Satoh Y, Kato E, Nitta
T, Fujimori S, Felfelani F, Masaki Y, Iizumi T, Nishimori M, Hanasaki N, Takahashi K,
Yamagata Y, Emori S Geoscientific Model Development 13(10) 4713-4747 (2020.10)
- 10) Systematizing and upscaling urban climate change mitigation
Creutzig F, Bai X, Khosla R, Viguie V, Yamagata Y
Environmental Research Letters 15(10) (2020.10)
- 11) Rethinking sustainable bioenergy development in Japan: decentralised system
supported by local forestry biomass Goh C.S, Aikawa T, Ahl A, Ito K, Kayo C,
Kikuchi Y, Takahashi Y, Furubayashi T, Nakata T, Kanematsu Y, Saito O, Yamagata Y
Sustainability Science 15(5) 1461-1471 (2020.09)
- 12) Urban land cover mapping under the Local Climate Zone scheme using Sentinel-2
and PALSAR-2 data Yune La, Hasi Bagan, Yoshiki Yamagata
Urban Climate 33 100661-100661 (2020.09)
- 13) On the Potential of 'PV + EV' for Deep Decarbonization of Kyoto's Power Systems:
Techno-Economic-Social Considerations Kobashi, Takuro, Takahiro Yoshida,
Yoshiki Yamagata, Katsuhiko Naito, Stefan Pfenninger, Kelvin Say, Yasuhiro Takeda,
Amanda Ahl, Masaru Yarime, Keishiro Hara Applied Energy Forthcoming(2020.06)
- 14) Decision support for retrofitting building envelopes using multi-objective
optimization under uncertainties Soowon Chang, Daniel Castro-Lacouture,
Yoshiki Yamagata Journal of Building Engineering 101413-101413 (2020.05)

- 15) Techno-economic assessment of photovoltaics plus electric vehicles towards household-sector decarbonization in Kyoto and Shenzhen by the year 2030
Takuro Kobashi, Kelvin Say, Jiayang Wang, Masaru Yarime, Dong Wang, Takahiro Yoshida, Yoshiki Yamagata JOURNAL OF CLEANER PRODUCTION 253 119933 (2020.4)
- 16) Energy sharing boundaries integrating buildings and vehicles tangled in spatial and temporal changes Chang S, Yoshida T, Binder R.B, Yamagata Y, Castro-Lacouture D Construction Research Congress 2020: Infrastructure Systems and Sustainability - Selected Papers from the Construction Research Congress 2020 434-443(2020)
- 17) Spatial modeling and design of smart communities Takahiro Yoshida, Yoshiki Yamagata, Soowon Chang, Vincent de Gooyert, Hajime Seya, Daisuke Murakami, Peraphan Jittrapirom, Gerasimos Voulgaris Urban Systems Design 199-255 (2020)
- 18) Modeling and design of smart buildings Soowon Chang, Perry P.J. Yang, Yoshiki Yamagata, Michael B. Tobey Urban Systems Design 59-86 (2020)
- 19) Spatial econometric models Hajime Seya, Takahiro Yoshida, Yoshiki Yamagata Spatial Analysis Using Big Data 113-158 (2020)
- 20) Spatial heat-wave assessments using geotagged Twitter data Daisuke Murakami, Yoshiki Yamagata Spatial Analysis Using Big Data 227-238 (2020)
- 21) Spatial scenario creation based on downscale methods Daisuke Murakami, Yoshiki Yamagata Spatial Analysis Using Big Data 259-270 (2020)
- 22) Mathematical preparation Hajime Seya, Yoshiki Yamagata Spatial Analysis Using Big Data 9-31 (2020)
- 23) Models in quantitative geography Daisuke Murakami, Yoshiki Yamagata Spatial Analysis Using Big Data 159-178 (2020)
- 24) Quasi real-time energy use estimation using Google's Popular Times data Takahiro Yoshida, Yoshiki Yamagata Spatial Analysis Using Big Data 271-280 (2020)
- 25) Geostatistics and Gaussian process models Daisuke Murakami, Yoshiki Yamagata, Toshihiro Hirano Spatial Analysis Using Big Data 57-112 (2020)
- 26) Evaluating walkability using mobile GPS data Yoshiki Yamagata, Daisuke Murakami, Takahiro Yoshida Spatial Analysis Using Big Data 239-257 (2020)
- 27) Yamagata Y., Yoshida T.: (2020) A “Smart Lifestyle” for the re-design of the “After Corona” urban form. Environment and Planning B: Urban Analytics and City Science,47(7), 1146-1148.
- 28) Goh CS., Saito O., Yamagata Y.: (2020) Developing sustainable bioenergy systems with local bio-resources: cases in Asia. Sustainability Science, 1-5.

- 29) Murakami D., Peters GW., Matsui T., Yamagata Y.: (2020) Spatiotemporal analysis of urban heatwaves using Tukey g-and-h random field models. arXiv preprint arXiv:2004.00852
- 1) Tobey MB., Chang S., Binder RB., Yamagata Y.: (2019) Typologies of Rapid Urbanization in Developing Asian Countries: A Study of Shanghai's Rapid Urbanization and Subsequent Strategies. IOP Conference Series: Earth and Environmental Science 294 (1), 012097.
- 2) Yoshida T., Yamagata Y., Murakami D.: (2019) Individual level heat risk evaluation using GPS towards smart navigation system. Proceedings of the International Cartographic Association 2, 152.
- 3) Binder RB., Lancaster Z., Tobey MB., Jittrapirom P., Yamagata Y.: (2019) Transport modeling with a purpose: How urban systems design can bridge the gaps between modeling, planning, and design. WIT transactions on the built environment 186, 85-96.
- 4) Tobey MB., Binder RB., Yoshida T., Yamagata Y.: (2019) Urban systems design case study: Tokyo's Sumida ward. Smart Cities 2 (4), 453-470.
- 5) Tobey MB., Binder RB., Chang S., Yoshida T., Yamagata Y., Yang P.P.J.: (2019) Urban Systems Design: A Conceptual framework for planning smart communities. Smart Cities 2 (4), 522-537.
- 6) Yoshida T., Yamagata Y., Murakami D.: (2019) Energy demand estimation using quasi-real-time people activity data. Energy Procedia 158, 4172-4177.
- 7) Matsui K., Yamagata Y., Kawakubo S.: (2019) Real-time sensing in residential area using IoT technology for finding usage patterns to suggest action plan to conserve energy. Energy Procedia 158, 6438-6445.
- 8) Murakami D., Yamagata Y., Yoshida T., Matsui T.: (2019) Optimization of local microgrid model for energy sharing considering daily variations in supply and demand. Energy Procedia 158, 4109-4114.
- 9) Yamagata Y., Murakami D., Wu Y., Yang P.P.J., Yoshida T., Binder R.: (2019) Big-data analysis for carbon emission reduction from cars: Towards walkable green smart community. Energy Procedia 158, 4292-4297.
- 10) Yamagata Y., Hanasaki N., Ito A., Kinoshita T., Murakami D., Zhuo Q.: (2018) Estimating water-food-ecosystem trade-offs for the global negative emission scenario (IPCC-RCP2.6). Sustainability Science, 1-13.
- 11) Emori S., Takahashi K., Yamagata Y., Kanae S., Mori S., Fujigaki Y.: (2018) Risk implications of long-term global climate goals: overall conclusions of the ICA-RUS project. Sustainability Science, 1-11.

- 12) Bagan H., Li H., Yang Y., Takeuchi W., Yamagata Y.: (2018) Sensitivity of the subspace method for land cover classification. *The Egyptian Journal of Remote Sensing and Space Science*.
- 13) Li Z., Bagan H., Yamagata Y.: (2018) Analysis of spatiotemporal land cover changes in Inner Mongolia using self-organizing map neural network and grid cells method. *Science of The Total Environment*, 636, 1180-1191.
- 14) Yamagata Y., Yoshida T., Murakami D., Matsui T., Akiyama Y.: (2018) Seasonal Urban Carbon Emission Estimation Using Spatial Micro Big Data. *Sustainability* 2018, 10, 4472.
- 15) Murakami D., Yoshida T., Seya H., Griffith D., Yamagata Y.: (2017) A Moran coefficient-based mixed effects approach to investigate spatially varying relationships. *Spatial Statistics*, 19, 68-69.
- 16) Frieler K., Lange S., Piontek F., Reyer C.P.O., Schewe J., Warszawski L., Zhao F., Chini L., Denvil S., Emanuel K., Geiger T., Halladay K., Hurtt G., Mengel M., Murakami D., Ostberg S., Popp A., Riva R., Stevanovic M., Suzuki T., Volkholz J., Burke E., Ciais P., Ebi K., Eddy T.D., Elliott J., Galbraith E., Gosling S.N., Hattermann F., Hickler T., Hinkel J., Hof C., Huber V., Jägermeyr J., Krysanova V., Marcé R., Schmied H.M., Mouratiadou I., Pierson D., Tittensor D.P., Vautard R., Vliet M., Biber M.F., Betts R.A., Bodirsky B., Deryng D., Frolking S., Jones C.D., Lotze H.K., Lotze-Campen H., Sahajpal R., Thonicke K., Tian H., Yamagata Y.: (2017) Assessing the impacts of 1.5 °C global warming-simulation protocol of the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP2b). *Geoscientific Model Development*, 10(12), 4321.
- 17) Sharifi A., Chelleri L., Fox-Lent C., Grafakos S., Pathak M., Olazabal M., Moloney S., Yumagulova L., Yamagata Y.: (2017) Conceptualizing Dimensions and Characteristics of Urban Resilience: Insights from a Co-Design Process. *Sustainability*, 9(6), 1032.
- 18) Yamagata Y., Yang J., Galaskiewicz J.: (2017) State power and diffusion processes in the ratification of global environmental treaties, 1981-2008. *International Environmental Agreements: Politics, Law and Economics* 17, 4, 501-529.
- 19) Shoyama K., Yamagata Y.: (2016) Local perception of ecosystem service bundles in the Kushiro watershed, Northern Japan – Application of a public participation GIS tool. *Ecosystem Services*, 22, 139-149.
- 20) Smith P., Davis S J., Creutzig F., Fuss S., Minx J., Gabrielle B., Kato E., Jackson R B., Cowie A., Kriegler E., van Vuuren D P., Rogelj J., Ciais P., Milne J., Canadell J G., McCollum D., Peters G., Andrew R., Krey V., Shrestha G., Friedlingstein P., Gasser T., Grubler A., Heidug W K., Jonas M., Jones C D., Kraxner F., Littleton E., Lowe J., Moreira J R., Nakicenovic N., Obersteiner M., Patwardhan A., Rogner M., Rubin E.,

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 - 22) Seya H., Yamagata Y., Nakamichi K.: (2016) Creation of municipality level intensity data of electricity in Japan. *Applied Energy*, 162, 1336-1344.
 - 23) Kraxner F., Aoki K., Kindermann G., Leduc S., Albrecht F., Liu J., Yamagata Y.: (2016) Bioenergy and the city – What can urban forests contribute? *Applied Energy*, 165, 990-1003.
 - 24) Seya H., Nakamichi K., Yamagata Y.: (2016) The residential parking rent price elasticity of car ownership in Japan. *Transportation Research Part A: Policy and Practice*, 85, 123-134.
 - 25) Yamagata Y., Murakami D., Minami K., Arizumi N., Kuroda S., Tanjo T., Maruyama H.: (2016). Electricity Self-Sufficient Community Clustering for Energy Resilience. *Energies*, 9(7), 543.
 - 26) Sharifi A., Yamagata Y.: (2016) Principles and criteria for assessing urban energy resilience: A literature review. *Renewable and Sustainable Energy Reviews*, 60, 1654-1677.
 - 27) Yamagata Y., Murakami D., Yoshida T., Seya H., Kuroda S.: (2016) Value of urban views in a bay city: Hedonic analysis with the spatial multilevel additive regression (SMAR) model. *Landscape and Urban Planning*, 151, 89-102.
 - 28) Kusaka H., Suzuki-Parker A., Aoyagi T., Adachi S., Yamagata Y.: (2016) Assessment of RCM and urban scenarios uncertainties in the climate projections for August in the 2050s in Tokyo. *Climatic Change*, 137(3-4), 427-438.
 - 29) Sharifi A., Yamagata Y.: (2016) On the suitability of assessment tools for guiding communities towards disaster resilience. *International Journal of Disaster Risk Reduction*, 18, 115-124.
 - 30) Yamagata Y., Murakami D., Seya H.: (2016) A Spatially - Explicit Scenario for Achieving “Wise Shrink” Toward Eco – Urbanism. *Articulo - Journal of Urban Research*, 14.
 - 31) Fuss S., Jones CD., Kraxner F., Peters GP., Smith P., Tavoni M., van Vuuren D., Canadell JG., Jackson RB., Milne J., Moreira JR., Nakicenovic N., Sharifi A., Yamagata Y.: (2016) Research priorities for negative emissions. *Environmental Research Letters*, 11, 115007, 2-12.
 - 32) Creutzig F., Agoston P., Minx JC., Canadell JG., Andrew RM., Quéré CL., Peters GP., Sharifi A., Yamagata Y., Dhakal S.: (2016) Urban infrastructure choices structure

climate solutions. *Nature Climate Change*, 6(12), 1054-1056.

- 33) Hayashi M., Saigusa N., Oguma H., Yamagata Y., Takao G.: (2015) Quantitative assessment of the impact of typhoon disturbance on a Japanese forest using satellite laser altimetry. *Remote Sensing of Environment*, 156, 216-225.
- 34) Hayashi M., Saigusa N., Yamagata Y., Hirano T.: (2015) Regional forest biomass estimation using ICESat/GLAS spaceborne LiDAR over Borneo. *Carbon Management*, 6, (1-2), 19-33.
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- 36) Bagan H., Yamagata Y.: (2015) Analysis of urban growth and estimating population density using satellite images of nighttime lights and land – use and population data. *GIScience & Remote sensing*, 52(6), 765-780.
- 37) Yamagata Y., Murakami D., Seya H.: (2015) A comparison of grid – level residential electricity demand scenarios in Japan for 2050. *Applied Energy*, 158, 255-262.
- 38) Sharifi A., Yamagata Y.: (2015) Roof ponds as passive heating and cooling systems: A systematic review. *Applied Energy*, 160, 336-357.
- 39) Shoyama K., Yamagata Y.: (2014) Predicting land-use change for biodiversity conservation and climate-change mitigation and its effect on ecosystem services in a watershed in Japan. *Ecosystem Services*, 8, 25-34.
- 40) Matsui K., Ochiai H., Yamagata Y.: (2014) Feedback on electricity usage for home energy management: A social experiment in a local village of cold region. *Applied Energy*, 120, 159-168.
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- 44) Seya H., Tsutsumi M., Yamagata Y.: (2014) Weighted – Average Least Squares Applied to Spatial Econometric Models: A monte Carlo Investigation. *Geographical Analysis*, 46(2), 126-147.

- 45) Bagan H., Yamagata Y.: (2014) Land-cover change analysis in 50 global cities by using a combination of Landsat data and analysis of grid cells. *Environmental Research Letters*, 9, 064015, 13pp.
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- 47) Kinoshita T., Iwao K., Yamagata Y.: (2014) Creation of a global land cover and a probability map through a new map integration method. *International Journal of Applied Earth Observation and Geoinformation*, 5(28), 70-77.
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- 52) Nakamichi K., Yamagata Y., Seya H.: (2013) CO2 Emissions Evaluation Considering Introduction of EVs and PVs under Land-use Scenarios for Climate Change Mitigation and Adaptation – Focusing on the Change of Emission Factor after the Tohoku Earthquake -. *Journal of the Eastern Asia Society for Transportation Studies*, 10, 1025-1044.
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Science and Urban Economics, 43(3), 429-444.

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