

Organization and Activities of the Geoenvironmental Science Field in the Master's and Doctoral Programs in Geosciences for the Academic Year 2020

Organization

During the year from April, 2020 to March, 2021, several promotions and appointments were made so that our research and teaching activities covering geoenvironmental sciences were enforced. Following is the list of all faculty and administrative staffs with specialties:

Professors:

Asanuma, Jun, Ph.D., surface hydrology, hydrometeorology, flood risk management
Kureha, Masaaki, Ph.D., regional geography, geography of tourism, rural geography
Kusaka, Hiroyuki, D.Sc., urban climatology, mountain meteorology, applied meteorology
Matsui, Keisuke, D.Sc., cultural geography, geography of religion and tourism
Matsuoka, Norikazu, D.Sc., geomorphology, geocryology
Onda, Yuichi, D.Sc., environmental dynamics, hydrology, geomorphology, environmental radioactivity
Sugita, Michiaki, D.Sc., hydrologic sciences, surface hydrology, boundary layer meteorology
Tanaka, Hiroshi, Ph.D., atmospheric science, general circulation
Tsuji-mura, Maki, D.Sc., hydrologic sciences, groundwater hydrology, isotope hydrology
Tsutsumi, Jun, D.Sc., urban geography, regional geography of Australia, GIS
Ueda, Hiroaki, D.Sc., atmospheric science, climate dynamics
Yamanaka, Tsutomu, D.Sc., hydrologic sciences, isotope tracers, ec hydrology

Associate Professors:

Hattanji, Tsuyoshi, D.Sc., hydrogeomorphology, slope processes
Ikeda, Atsushi, D.Sc., geomorphology, geocryology
Kato, Hiroaki, D.Sc., forest hydrology, environmental radioactivity
Matsushita, Bunkei, D. Env., remote sensing, spatial information science, global environment
Ueno, Kenichi, D.Sc., atmospheric science, precipitation system, regional climatology

Assistant Professors:

Akiyama, M. Chiaki, D.Sc., geography of land use issues, spatial information science
Harada, Mariko, Ph.D., earth and planetary system science, paleoclimatology, paleoenvironment
Kubo, Tomoko, D.Sc., urban geography, geography of housing, geography of North America
Matsueda, Mio, D.Sc., atmospheric science, predictability of weather and climate
Morimoto, Takehiro, D.Sc., agricultural and rural geography, GIS and spatial information science
Parkner, Thomas, Ph.D., geomorphology, gully erosion, soil erosion, mass movements
Sekiguchi, Tomohiro, Ph.D., geomorphology, sedimentology
Takahashi, Junko, Ph.D., pedology, environmental radioactivity
Yamashita, Akio, D.Sc., regional geography, geography of urban environmental issues

Technical Staff:

Ozaki, Shiro

Administrative Staff:

Sekine, Takako

Doctor and Master's Theses

[Abbreviations]

D.Sc. Doctor of Philosophy (Science or Geoscience)
D.Env. Doctor of Philosophy (Environmental Studies)
M.Sc. Master of Science
M.Sc. (M) Master of Science in Mountain Studies
M.Eng. Master of Engineering
M.Env. Master of Environmental Science
M.A. (E) Master of Arts in Education
M.A. (A) Master of Arts in Area Studies
M.S.E.Sc. Master of Sustainable Environmental Sciences

[a] Human Geography

M.Sc. Bai, Yake (2021): Characteristics of Historical Cities from the Viewpoint of Evaluation of Tourism Resources: A Case Study of Laocheng District, Luoyang City.
M.Sc. Feng, Xuehan (2021): The Gentrification Process in the Old Town of Beijing: A Case Study

- of Baochaohutong.
- M.Sc. He, Danning (2021): The Establishment and Transformation of Ethnic Resources in Yokohama Chinatown: Focusing on the Action of Organizations around Celebration of Emperor Guan Yu's Birthday.
- M.Sc. Huang, Tianle (2021): Regional Difference in the Function of Chinese Grocery Stores in Tokyo.
- M.Sc. Ji, Yingqi (2021): Spatial Characteristics of Residents' Leisure Activities: A Case Study of Cangzhou City, Hebei Province.
- M.Sc. Ma, Shiwei (2021): Transformation and Maintenance of Historical Constructions in Traditional Villages Since the Reform and Opening-up: A Case Study of Xiangli Village in Shanxi Province in China.
- M.Sc. Sasaki, Reiki (2021): Challenges in Utilization of Tsunami Monuments through the Analysis of the Resident's Recognition: The Case of Shinjo Area, Tanabe City, Wakayama.
- M.Sc. Wang, Jiayao (2021): Development Factors of Migrant Entrepreneurship in Tono City, Iwate Prefecture: Focusing on the Actors Involved in the "Beer Village" project.
- M.Sc. Zhao, Jun (2021): Characteristics of Living Behavior in Chinese Agricultural Technical Intern Trainees: In the Case of Hokota City, Ibaraki Prefecture.
- M.Sc. Zhang, Lingxi (2021): Transformation of Korean Settlement Area in Beijing: Taking the Case of Wangjing Korea Town.
- M.Sc. Zhou, Yixuan (2021): Tourism Awareness of Local Organization on the Use of Religious Cultural Heritage for Tourism: A Case Study of Hidden Christian Sites in the Nagasaki Region in Sotome Area.
- [b] Regional Geography**
- D.Sc. Komuro, Jo (2020): Mechanisms for Sustaining the Local Labor Market in International Mountain Resorts: A Case Study of Whistler, Canada.
- M.Sc. Asami, Takeshi (2021): The Role of DMO in Tourism Strategy of Utilizing Local Resources: A Case Study of Minakami Town, Gunma Prefecture.
- M.Sc. Ebisawa, Hironori (2021): Site Characteristics of Ground-type Solar Panels and Its Future Possibilities for Installations on Farmland: Case Studies in Yachimata City in Chiba Prefecture.
- M.Sc. Hashizume, Ayumi (2021): Building New Relationships among Rural Residents through Urban-Rural Exchange: A Case Study of Interaction through Roadside Station Kurimoto, Katori City, Chiba Prefecture.
- M.Sc. Kano, Satoshi (2021): Building Agents' Relationship through Creating User Innovation Significance: Case Study of Kamakura Living Lab.
- M.Sc. Li, Xuan (2021): Problems and Factors of Grassland Tourism in Hulunbeier, Inner Mongolia, China: A Case Study of Chenbaluqi.
- M.Sc. Obara, Yuta (2021): Collaboration Structures of River Environment Conservation Activities and Their Regional Differences in the Arakawa River Basin.
- M.Sc. Oshimi, Takahiro (2021): The Impact of "Low-carbon Policy" on Inhabitant's Transportation Shift: The Case of Saitama City.
- M.Sc. Wu, Yuting (2021): Study on Place Attachment of Residents in the Area Where Gentrification is in Progress: A Case Study of Huangpu District, Shanghai.
- [c] Spatial Information Science**
- D.Sc. Fajar, Setiawan (2021): Long-Term Change of the Secchi Disk Depth in Indonesian Lakes Shown by Landsat TM and ETM+ Data.
- D.Sc. Liu, Fei (2021): Spatiotemporal Evaluation of Comprehensive Carrying Capacity: A Case Study Focusing on Sustainable Development of Guangdong-Hong Kong-Macao Greater Bay Area, China.
- M.Sc. Gokita, Natsumi (2021): Inter-regional Comparison of Drought Events Occurring in Vietnam.
- M.Sc. Guo, Shiyong (2021): Spatiotemporal Changes and Influencing Factors Population Ageing: A Case Study of Dalian City, Liaoning Province.
- M.Sc. Hirane, Yuya (2021): Relationship between Living Environment and Physical Activity Considering the Slope of Topography in Yokohama City.
- M.Sc. Ikeda, Takashi (2021): Development of the Model for Predicting the Daily Number of Heatstroke Patients Considering Heat Acclimatization.
- M.Sc. Kobayashi, Takafumi (2021): A Study on Tsunami Evacuation Behavior Prediction Using a Multi-agent System.

- M.Sc. Mohammad, Moslehuddin, Chowdhury (2020): Impact Assessment of Landslide Risks of Road Network in Hilly Regions of Bangladesh due to Climate Change.
- M.Sc. Otsu, Yusuke (2021): Impact of Urbanization on Short-duration Rainfall in Bangkok, Thailand.
- M.Sc. Song, Xinyu (2021): A Study on the Location of Rooftop Greening in Chiyoda Ward, Tokyo.

[d] Hydrologic Sciences

- M. Env. Trinh, Dinh Duy (2020): Impact assessment of climate change on irrigation water requirements for agriculture in the Ma River Basin in Thanh Hoa Province in Viet Nam.
- M. Env. Ishikawa, Kotaro (2021): CO₂ flux estimation over Lake Kasumigaura by eddy correlation and bulk methods.
- M. Env. Bani, Iuma (2021): Sand mining influence on flooding along La Colle River in Port Vila, Vanuatu.
- M. Env. Jabbar, Abdul (2021): Runoff and inundation characteristics in a watershed with mountains and flat areas analyzed by a hydrological model.
- M. Env. Inagaki, Tomotaka (2021): Estimation of the water surface temperature of Lake Kasumigaura using Himawari-8 thermal infrared data.
- M. S.E.Sc. Saito, Mariko (2021): Groundwater Flow System in Klang River Watershed, Kuala Lumpur, Malaysia.
- M. Env. Numa, Yurina (2021): Role of Mountain Block Recharge in Groundwater at Azumino, Nagano Prefecture, Japan.
- M. Env. Yamada, Erino (2021): Groundwater and Surface Water Cycle System along Bua River, Lilongwe, Malawi.
- M. Env. Ishii, Megumi (2021): Relationship between Hydrological Characteristics and Microbe Dynamics in a Headwater Catchment.
- M. Env. Suzuki, Ryu (2021): Long Term Variation of Groundwater Hydraulic Head Distribution in Tokyo, Capital City of Japan.
- M. Env. Imaizumi, Yuki (2021): Relationship between Residence Time and Microbe Information of Spring Water in a Headwater Catchment.
- M. Sc. Adachi, Ikuya (2021): Stable (hydrogen, oxygen and boron) isotopic evolution of lithospheric water.
- M. Sc. Kawade, Marina (2021): Lake currents and heat distribution in Nishiura, Lake Kasumi-

gaura.

- M. Sc. Takahashi, Yuki (2021): Numerical modeling of groundwater flow system and lake floor springs within Lake Marunuma catchment, Gunma Prefecture.
- M. Sc. Yoshizawa, Takayuki (2021): Investigation of a new mechanism of soil water transport by isotopic tracers and numerical models: testing “Two Water Worlds” hypothesis.

[e] Atmospheric Science

- M. Sc. Kumagai, Reo (2021): Variation of Southern Annular Mode in the Stratosphere and Troposphere Associated with Sudden Stratospheric Warming in the Southern Hemisphere.
- M. Sc. Nawaji, Eita (2021): Improvement of Predictability for Atmospheric General Circulation Model Using Kalman Filter.
- M. Sc. Toyooka, Daichi (2021): The Impact of Data Assimilation on Upwind Observation Network for Forecasting the Heavy Rain.
- M. Sc. Kurihana, Takuya (2021): A Development and Verification of Data Assimilation with Fast Super-Observation System on NICAM-LETKF.
- M. Sc. Ishiyama, Ryota (2021): Analysis of Dynamical Processes of Merging in the Rapid Development of Arctic Cyclone.
- M. Sc. Itoh, Shun (2021): A Study for Extracting a Blocking High using Meridional Gradient of Potential Vorticity.
- M. Sc. Ueda, Kurara (2021): Role of the Asian summer monsoon in the ENSO seasonality.
- M. Sc. Masumoto, Daichi (2021): Seasonal modulation of the Okhotsk High in a warming climate.
- M. Sc. Kusunoki, Kenji (2021): Impact of LAI changes on the development of cold-air pool in the Sugadaira highlands.
- M.Env. Yang, Yihui (2021): Weather variabilities and effects on land surface condition at mountain observatories.
- M.Env. Zha, Tianhao (2021): Snow cover structure and effects of rain due to warm winter at Sugadaira highlands in 2019/2020.

[f] Geomorphology

- M. Sc. Hiramoto, Naoya (2021): Topographical features and subsurface structure of dolines on the Akiyoshi-dai Plateau, Japan: An approach from topographic analysis and electrical resistivity tomography.

- M. Sc. Horikawa, Yasuhiro (2021): Seasonal sediment connectivity in a large landslide scar: Case study of Yahata-Okuzure, Hokkaido, Japan.
- M. Sc. (M) Karaki, Akihito (2021): Comparison of denudation rates in mountainous basins over decades and thousands of years: A case study in Okitama Hayama, Yamagata Prefecture.
- M. Sc. Koga, Wataru (2021): Distribution of infilling rates in hollows estimated from radiocarbon dates and high-resolution DEMs: A case study of granitic mountain slopes in Hiroshima City, Hiroshima Prefecture.
- M. Sc. Shinohara, Kanami (2021): Geological controls on marine cavernous landforms along rocky coasts.

Research Activities

Each research group had the following research activities during the academic year 2020.

[a] Human Geography

Research grants

- Akiyama, C. (PI: Akiyama, C.) (2019-2020): Study for development of a sustainable sewage treatment system for the future. Grant-in-Aid for Early-Career Scientists, JSPS, JPY 2,340,000.
- Matsui, K. (PI: Matsui, K.) (2019-2022): Geographical study on the creation of local communities in remote islands. Grant-in Aid for Scientific Research (B), JSPS, JPY 17,290,000.
- _____ (PI: Matsui, K.) (2018-): Geographical study on utilization of places and sustainable development. Donation for Scientific Research, Research and Consulting Regional Science Co. Ltd, JPY 850,000.
- _____ (PI: Kubo, T.) (2020-2021): International Cooperative Research for the Establishment of the Sustainable Urban Developmental Model: To Manage both Competitiveness and Residents' Quality of Life in Japanese Cities. The Toyota Foundation Research Grant Program, JPY 6,600,000.
- Kubo, T. (PI: Kubo, T.) (2018-2021): International comparative study on expansion of empty space in urban areas and the gap in residential environment. Grant-in-Aid for Early-Career Scientists, JSPS, JPY 4,160,000.
- _____ (PI: Kubo, T.) (2020-2021): International Cooperative Research for the Establishment of the Sustainable Urban Developmental Model: To Manage both Competitiveness and Residents' Quality

of Life in Japanese Cities. The Toyota Foundation Research Grant Program, JPY 6,600,000.

Attendance at international meetings

- Kubo, T. (2020, Apr.): Urban Affairs Association 50th Ann. Meeting. Abstract accepted, conference cancelled.
- _____ (2021, Jan.): Disparities in living conditions between city centers and shrinking suburbs: A case study of super-aging and post-growth Japan. Urban Sociology ESA RN37 4 Midterm Conference at Italy University of Bologna.

[b] Regional Geography

Research projects

- Kureha, M., Tsutsumi, J. and Yamashita, A. (2019-2021): Geographical studies on regional ecology in Ueda City and the surrounding region.
- Yamashita, A. (2018-): Causes and future prediction of heat island phenomena of rapidly growing cities in developing countries, project with Murayama, Y. (Univ. of Tsukuba).

Research grants

- Tsutsumi, J. (2019-2022): Industrial diversification in contemporary Australia in terms of the emerging Asia link. Grant-in Aid for Scientific Research (B), JSPS, JPY 15,210,000.

Others

- Kureha, M. (2020): Special lecture on socioeconomic geography in Hosei Univ.
- _____ (2020): Special lecture on geography of tourism in Rikkyo Univ.
- Tsutsumi, J. (2020): Lecture on national land development in Takasaki City University of Economics.
- _____ (2020): Methodology of fieldwork in Takasaki City University of Economics.
- _____ (2020): Lecture on disaster management in Takasaki City University of Economics.
- _____ (2020): Lecture on Regional Geography in Takasaki City University of Economics.
- _____ (2020): Lecture on Geography in Gunma University.
- _____ (2020): Special Lecture on Geography in Rikkyo University.
- _____ (2020): Seminar for 2nd year student in Rikkyo University.
- _____ (2020): Seminar for 3rd year student in Rikkyo University.
- Yamashita, A. (2020): Lectures on interdisciplinary cultural studies 3 in Rikkyo Univ.
- _____ (2020): Studies in geography 3A in Rikkyo Univ.

[c] Spatial Information Science

Research projects

Kusaka, H. (2019-2021): Environmental Restoration and Conservation Agency (ERCA), Environment Research and Technology Development Fund of the Environmental Restoration and Conservation Agency of Japan. (collaborated with Prof. M. Inatsu)

_____ (2018-2020): JSPS KAKENHI, Form Factors and Future Prediction of Heat Island Phenomenon in Rapidly Growing Cities in Developing Countries (collaborated with Prof. Y. Murayama)

_____ (2019-2022): JSPS KAKENHI, Elucidation of the synergistic effects of meteorological changes and environmental pollution through water quality by developing an integrated particle model, (collaborated with Chief researcher M. Kazino)

_____ (2019-2022): JSPS KAKENHI, Evaluation of Impacts of Agricultural Land Dynamics on the Regional Thermal Environment Using a Regional Meteorological Model, (collaborated with A. Maruyama)

_____ (2017-2020): Weathernews, Collaboration research for implementing micro-scale meteorological model.

_____ (2017-2020): Takenaka Corporation, Joint Research on Application of Data Assimilation Technology in the Field of Meteorology to Numerical Simulation Technology in the Field of Architecture.

_____ (2020): Pacific Consultants Co., Ltd, Collaborative Research for Support services for formulation of adaptation plan in Vietnam in 2020

Morimoto, T. (2020): Productivity and Land Use Change of Agriculture in the Mountainous Areas of Central Japan: Spatial Information Science and Field Observation.

_____ (2020): Urbanization and land use/cover change in peri-urban zones in Tokyo Metropolitan Area.

_____ (2020): Causes and future prediction of heat island phenomena of rapidly growing cities in developing countries, a project under JSPS.

_____ (2020): Urban Expansion and its Impact on Urban Disasters in Rapidly Urbanizing South Asian Cities, a project under JSPS.

Research grants

Kusaka, H. (2019-2021): Environment Research and Technology Development Fund of the Environmental Restoration and Conservation Agency of Japan. Environmental Restoration and Conservation Agency, ERCA, JPY 10,000,000 (2020)

_____ (2019-2022): Elucidation of the synergistic effects of meteorological changes and environmental pollution through water quality by developing an integrated particle model, JSPS KAKENHI, JPY 900,000 (2020)

_____ (2019-2022): Evaluation of Impacts of Agricultural Land Dynamics on the Regional Thermal Environment Using a Regional Meteorological Model, JSPS KAKENHI, JPY 600,000 (2020)

_____ (2018-2020): Form Factors and Future Prediction of Heat Island Phenomenon in Rapidly Growing Cities in Developing Countries. (JSPS KAKENHI) JPY 300,000 (2020).

_____ (2017-2020): Collaboration research for implementing micro-scale meteorological model Weathernews, JPY 995,520 (2017-2020).

_____ (2017-2020): Joint Research on Application of Data Assimilation Technology in the Field of Meteorology to Numerical Simulation Technology in the Field of Architecture. Takenaka Corporation, JPY 550,000 (2020).

_____ (2020): Collaborative Research for Support services for formulation of adaptation plan in Vietnam in 2020. Pacific Consultants Co., Ltd, JPY846,154 (2020).

Matsushita, B. (PI: Matsushita, B.) (2017-2021): Estimating global primary production of lakes using a new remote sensing method. Grant-in Aid for Scientific Research (B), JSPS, JPY 17,550,000.

_____ (PI: Fukushima, T.) (2017-2021): Study on shoaling of hypolimnetic oxygen-deficient water in tropical meromictic lakes. Grant-in Aid for Scientific Research (B), JSPS, JPY 1,625,000.

Morimoto, T. (2018-2020): Causes and Future Prediction of Heat Island Phenomena of Rapidly Growing Cities in Developing Countries. Grant-in-Aid for Scientific Research B, JSPS, JPY 350,000. (Representative: Murayama, Y.).

_____ (2019-2021): Urban Expansion and its Impact on Urban Disasters in Rapidly Urbanizing South Asian Cities. Grant-in-Aid for Scientific Research for JSPS Research Fellows (International Research Fellow), JSPS, JPY500,000 (2020).

Visited researchers

Dr. Ranagalage, Manjula Mahinda as a JSPS International Postdoctoral Fellow for Research in Japan from the Rajarata University of Sri Lanka. Sep. 2019 - Aug. 2021 (Host researcher: Morimoto, T.).

Others

Matsushita, B. (2018-): Associate Editor of ISPRS Journal of Photogrammetry & Remote Sensing.

[d] Hydrologic Sciences

Research projects

- Asanuma, J. (2014-): Hydro-Meteorological studies with Multi-satellite sensors and Multidimensional approaches at Mongolian Grassland (Hydro4m, JAXA G-COM Research Announcement).
- _____ and others (2019-2020): Investigating damages and after typhoon Hagibis in Kanto region. (under financial support by the River foundation).
- Tsujimura, M. (2019-): Groundwater Flow System in Tokyo Area.
- _____ (2019-): Contribution of Mountain Block Recharge to Groundwater in Plain Area.
- _____ (2016-): Application Microbe Information to Groundwater Flow System Research.
- Yamanaka, T. (2018-2020): Monitoring Stable and Radioactive Isotopes in Precipitation and River Water in the Chikuma Basin (with ICHARM).

Research grants

- Asanuma, J. and Aida, K. (2019-): Reconstructing Validation System of Satellite Soil Moisture Products (JAXA G-COM Research Announcement).
- Sugita, M. (2021-2025): Establishment of measurement technology of lake surface flux from a small ship and determination the spatial flux variability. Grant-in-Aid for Scientific Research (B) of the Japan Society for the Promotion of Science.
- Tsujimura, M. (2020-2024): Cycle System between Groundwater and Surface Water Revealed by Multi Tracer Approach in Klang River Basin, Malaysia. Joint International Research (B) of KAKENHI (Grants-in-Aid for Scientific Research), Japan Society for the Promotion of Science.
- _____ (2020): Evaluation of Groundwater Flow System and Water Resources in Mountainous Catchments Focusing on Residence Time and Microbe. Suntory Global Innovation Center Limited.
- _____ (2020): Groundwater Flow System in Tokyo Area. Tokyo Metropolitan Government.
- Yamanaka, T. (2019-2023): Evaluation of Hydrological Components by Dynamic Isoscape Models and Its Multifaceted Developments. Grant-in-Aid for Scientific Research (B) of the Japan Society for the Promotion of Science.

Visited researchers

- Mr. Youssef Mohammed Youssef from Suez University, Oct. 2018-2021 (Host researcher: Sugita, M.).

[e] Atmospheric Science

Research projects

- Tanaka, H. L. (2007-): Joint study of NICAM (AORI,

the University of Tokyo).

- _____ (2009-): Normal mode of the atmosphere (University of Humburg).
- _____ (2013-): Volcanic ash prediction by PUFF model (DPRI, Kyoto University).
- _____ (2018-): Analysis of Atmospheric Blocking (University of Missouri-Columbia).
- Ueda, H. (2019-): Joint study of MRI-CGCM (Japan Meteorological Agency).
- Ueno, K. (2017-): Joint study of PMM 8thRA (JAXA).

Research grants

- Ueda, H. (2020): Research grant Project for University-Industry Cooperation Strengthening in Tsukuba, University of Tsukuba.
- Ueno, K. (2020): Joint study of JAXA PMM 8thRA, (PI by K. Ueno) JPY 681,000.

Attendance at international meetings

- Ueno, K. (2020, Jul.): Virtual meeting on Education Workgroup and Curriculum and Graduate Competence Survey (Invited), July 30, hosted by ICI-MOD Kathmandu, Nepal.

Others

- Fujita, S. and Ueno, K. (2020, Dec.): An award of best poster for students in the sixth domestic workshop of mountain sciences, Tsukuba.

[f] Geomorphology

Research projects

- Hattanji, T. (2016-): Improving prediction models for shallow landslides based on channel-head mapping using LiDAR DEMs, project with Tanaka, Y. (Komazawa Univ.), Doshida, S. (National Research Institute of Fire and Disaster) and Furuichi, T. (Forest Research and Management Organization)
- _____ (2017-): Interaction of weathering, water erosion and landsliding in the Yahata Okuzure, Hokkaido, project with Parkner, T. (Univ. of Tsukuba)
- Ikeda, A. (2008-): Permafrost monitoring on Mt. Fuji, project with Iwahana, G. (IARC-UAF), Imaizumi, F. (Shizuoka Univ.)
- _____ (2017-): Geomorphological study on moor, grassland and shrub in a subalpine zone on heavily snow-covered mountains, project with Sasaki, N. (Univ. of Tsukuba).
- Matsuoka, N. (2004-): Arctic periglacial geomorphology, international project with Christiansen, H.H. (Univ. Centre in Svalbard, Norway) and Watanabe, T. (Kitami I.T.)
- _____ (2017-): Multi-method approach to model-

ling erosion of high-relief mountains, international project with Stoffel, M., Ballesteros, J. (Univ. of Geneva), Imaizumi, F. (Shizuoka Univ.), Matsuishi, Y. (Kyoto Univ.), Kariya, Y. (Senshu Univ.), Nishii, R. (Niigata Univ.) and Ikeda, A.

- _____ (2020-): Rocky coast geomorphology, project with Shinohara, K.[†] (Univ. of Tsukuba).
- Parkner, T. (2014-): Gully erosion on unstable hillslopes in the East Coast Region, North Island, New Zealand.
- _____ (2017-): Interaction of weathering, water erosion and landsliding in the Yahata Okuzure, Hokkaido, project with Hattanji, T. (Univ. of Tsukuba)
- Sekiguchi, T. (2007-): Self-organization of 3D-patterned bedforms under complex oscillatory flow.
- _____ (2010-): Study on ripple transition under unsteady oscillatory flows.
- _____ (2013-): An experiment on sedimentary process of onshore tsunami deposit, project with Yamaguchi, N. (Ibaraki Univ.)

Research grants

- Hattanji, T. (2020): Development of spatio-temporal analysis of shallow landslides: Collaboration of process geomorphology with historical geomorphology and spatial information science. Grant-in-Aid for Scientific Research (B), JSPS, JPY 1,800,000.
- Ikeda, A. (2020): Topographical controls on dominant vegetation and historical botany in subalpine zone under snow-rich climate. Grant-in-Aid for Scientific Research (C), JSPS, JPY 1,950,000.
- Matsuoka, N. (2020): Validating the usage of patterned ground as a periglacial climate indicator, JSPS, JPY 1,500,000.
- _____ (2020): Developing evaluation methods of long-term debris flow risks, based on the prediction of source area, JSPS, JPY 300,000.
- Shinohara, K.[†] and Matsuoka, N. (2020): Systematic classification and interpretation of marine erosional landforms along Izu Peninsula. Research Grants from Izu Peninsula Geopark, JPY 300,000.

Attendance at international meetings

- Matsuoka, N. (2021, Mar.): Arctic Science Summit Week 2021, Lisbon, Portugal (online).

Visited Researchers

- Dr. Anyuan Li (Shaoxing University, China), 23rd Jan. 2020.– 22nd Jan. 2021.

[g] Environmental Dynamics

Research projects

- Onda, Y. (2013-): CYCL Project, Improvement of the forecast models of the dispersion and assessment of the impact of Radionuclides in the environment. AMORAD II project, Joint research with Insutitute De Radioprotection ET De Surute Nucleaire (IRSN).
- _____ (2015-): Study on Elucidation and Modeling of Migration Mechanism of Radioactive Cesium Accumulated in Forest and Soil. Contact Research Project with Japan Atomic Energy Agency (JAEA).
- _____ (2016-): Establishment of Assistive Technology for Environmental Management after the Chernobyl Disaster. Science and Technology Research Partnership for Sustainable Development (SATREPS), Project with Nanba, K. (PI, Fukushima Univ.)
- _____ (2018-): Development of an emergency groundwater utilization system for disasters and critical droughts. Cross-ministerial Strategic Innovation Promotion Program (SIP) Strengthening national resilience (disaster prevention and mitigation), project with Oki, T. (PI, Univ. Tokyo)

Research grants

- Onda, Y. (2013-): CYCL Project, Improvement of the forecast models of the dispersion and assessment of the impact of Radionuclides in the environment. AMORAD II project, (IRSN), JPY 6,000,000 (2020).
- _____ (2015-): Study on Elucidation and Modeling of Migration Mechanism of Radioactive Cesium Accumulated in Forest and Soil. Contact Research Project with Japan Atomic Energy Agency (JAEA), JPY 15,000,000 (2020).
- _____ (2016-): Establishment of Assistive Technology for Environmental Management after the Chernobyl Disaster. Science and Technology Research Partnership for Sustainable Development (SATREPS), Project with Nanba, K. (PI, Fukushima Univ.), JPY 6,000,000 (2020).
- _____ (2018-): Development of an emergency groundwater utilization system for disasters and critical droughts. Cross-ministerial Strategic Innovation Promotion Program (SIP) Strengthening national resilience (disaster prevention and mitigation), project with Oki, T. (PI, Univ. Tokyo), JPY 4,000,000 (2020).
- _____ (2019-2020): Advanced research to elucidate the dynamics and effects of environmental radioactivity. Contract Research Project, IER at Fukus-

hima University FY2020 Collaborative Research Promotion Program, JPY 2,000,000 (2020).

_____ (2019-2020): Measurement and modeling of radioactive runoff in forests and water systems. Joint Research Project, Fukushima University, JPY 2,000,000 (2020).

Kato, H. (2020-2022): Elucidation of Forest-Water Interactions Using Environmental Isotope Tracers and Development of a Material Circulation Analysis Method. Grant-in-Aid for Scientific Research (C) of the Japan Society for the Promotion of Science, JSPS, JPY 1,200,000 (2020).

Takahashi, J. (2020-2022): Evaluation of Radiocesium Bioavailability in Forest Soil Considering Spatial Heterogeneity. Grant-in-Aid for Early-Career Scientist, JSPS, JPY 1,000,000 (2020).

Attendance at international meetings

Onda, Y. (2020, May.): EGU General Assembly 2021, Vienna, Austria (Online)

_____ (2020, Jul.): JpGU-AGU Joint Meeting 2020, Chiba, Japan (Online)

_____ (2020, Nov.): Annual Meeting of GSJ 2019 (online)

_____ (2020, Dec.): AGU Fall Meeting 2020, America (Online)

Kato, H. (2020, Jul.): JpGU-AGU Joint Meeting 2020, Chiba, Japan (Online)

Takahashi, J. (2020, Jul.): JpGU-AGU Joint Meeting 2020, Chiba, Japan (Online)

Visited Researchers

Ms. MIKAILOVA Rena (Russian Institute of Radiology and Agroecology, Russian Federation Jan/2020-Feb/2021) Host Researcher Onda, Y.

GI: Geophysical Institute

GISA: GIS Association in Japan

IARC: International Arctic Research Center

ICHARM: International Center for Water Hazard and Risk Management

IPCC: Intergovernmental Panel on Climate Change

IPY: International Polar Year

IGU: International Geographical Union

JAXA: Japan Aerospace Exploration Agency

JICA: Japan International Cooperation Agency

JSPS: Japan Society for the Promotion of Science

JST: Japan Science and Technology Agency

KAGIS: Korean Association of Geographic Information Studies

MAHASRI: Monsoon Asia Hydro-Atmosphere Scientific Research and Prediction Initiative

MAS: Mongolian Academy of Sciences

MEXT: The Ministry of Education, Culture, Sports, Science and Technology of Japan

MHLW: Ministry of Health, Labour and Welfare

MRI: Meteorological Research Institute (Japan)

NSF: National Science Foundation

RIHN: Research Institute for Humanity and Nature

TERC: Terrestrial Environment Research Center, University of Tsukuba

TRMM: Tropical Rainfall Measuring Mission

UAF: University of Alaska, Fairbanks

WERC: Water and Environmental Research Center

UNESCO: United Nations Educational, Scientific and Cultural Organization

UNESCO-IHP: International Hydrological Programme for UNESCO

[Symbol]

† Students, research assistants, researchers and fellows belonging to the research group

[Acronyms]

ACCU: Asia/Pacific Cultural Centre for UNESCO

AGU: American Geophysical Union

CAMP: CEOP Asia-Australia Monsoon Project

CAS: Chinese Academy of Sciences

CEOP: Coordinated Enhanced Observation Period

CliC: Climate and Cryosphere

CREST: Core Research for Evolutional Science and Technology

EGU: European Geosciences Union

GCCA: Global Change: Connection to the Arctic

GEWEX: Global Energy and Water Cycle Experiment

GEOS: Global Earth Observation System of Systems

**Activity Report for Academic Exchange and Cooperation
between University of Tsukuba, Japan and University of
Alaska Fairbanks, U.S.A.**

An agreement for Academic Exchange and Cooperation has been established on 11 January, 2000 between the Institute of Geoscience, the Doctoral Program in Geoscience of the University of Tsukuba, Japan and the International Arctic Research Center (IARC), the Geophysical Institute (GI) of the University of Alaska Fairbanks (UAF), U.S.A. (see the Annual Report, 2000). The agreement was successfully extended in 2005 for the five years (from 2005 to 2009), in 2009 for the next five years (from 2010 to 2014), in 2015 for the next five years (from 2015 to 2019) and in 2019 for the next five years under the new contract names of the Graduate School of Life and Environmental Sciences, the Center for Computational Sciences (CCS) of the University of Tsukuba, Japan. The agreement includes (1) exchange of professors and research scholars, (2) exchange of graduate students, (3) collaborative research and joint academic meetings, and (4) exchange of scientific documents, publications, and information. The agreement will be effective for a period of five years, and may be renewed for another period by mutual agreement.

There was no exchange activity by the breakout of COVID-19. In December 2020, Tanaka, H.L. attended the internet meeting of Awarding Ceremony organized by IARC.

- (1) Exchange of Researchers: None.
- (2) Exchange of Graduate Students: None.
- (3) Collaborative Research: Research on Arctic Oscillation, PI: H.L. Tanaka (Univ. of Tsukuba).
- (4) Exchange of scientific documents:
 - Tsukuba Geo-Environmental Science, Vol.14, 2019, Univ. of Tsukuba.
 - Geophysical Institute Biennial Report, 2019, Univ. of Alaska.
 - Geophysical Institute Quarterly, 2019 Univ. of Alaska.