

# Organization and Activities of the Doctoral Program in Geoenvironmental Sciences for the Academic Year 2016

---

## Organization

During the year from April, 2016 to March, 2017, 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:*

Kureha, Masaaki, Ph.D., Chair, regional geography, geography of tourism, rural geography  
Asanuma, Jun, Ph.D., surface hydrology, hydrometeorology, environmental dynamics  
Kusaka, Hiroyuki, D.Sc., urban climate, local wind, numerical modeling  
Matsui, Keisuke, D.Sc., cultural geography, geography of religion and tourism  
Matsuoka, Norikazu, D.Sc., geomorphology, geocryology  
Murayama, Yuji, D.Sc., GIS, urban and transportation geography, quantitative methodology  
Sugita, Michiaki, D.Sc., hydrologic sciences, surface hydrology, boundary layer meteorology  
Tanaka, Hiroshi, Ph.D., atmospheric science, general circulation  
Tsujimura, Maki, D.Sc., hydrologic sciences, ground-water hydrology, isotope hydrology  
Ueda, Hiroaki, D.Sc., atmospheric science, climate dynamics  
Yamashita, Kiyomi, D.Sc., cultural geography, ethnic geography, China, Southeast Asia

### *Associate Professors:*

Ikeda, Atsushi, D.Sc., geomorphology, geocryology  
Tsutsumi, Jun, D.Sc., urban geography, regional geography of Australia, GIS  
Ueno, Kenichi, D.Sc., atmospheric science, precipitation system, regional climatology  
Yamanaka, Tsutomu, D.Sc., hydrologic sciences, isotope tracers, ecohydrology

### *Assistant Professors:*

Hattanji, Tsuyoshi, D.Sc., hydrogeomorphology, slope processes  
Ichikawa, Yasuo, D.Sc., rural geography, geography of France  
Kawachi, Atsushi, D. Eng., environmental hydraulics,

ecological hydraulics  
Morimoto, Takehiro, D.Sc., agricultural geography, GIS, rural geography  
Parkner, Thomas, Ph.D., geomorphology, gully erosion, soil erosion, mass movements  
Sekiguchi, Tomohiro, Ph.D., geomorphology, sedimentology  
Shinozaki, Tetsuya, Ph.D., erosion and deposition around coastal land, tsunami deposit  
Yamashita, Akio, D.Sc., regional geography, geography of urban environmental issues

### *Technical Staffs:*

Miyasaka, Kazuhito, B.A.  
Ozaki, Shiro  
Watase, Koichi, B.A.

### *Administrative Staff:*

Aita, Machiko

## Doctor and Master's Theses

### [Abbreviations]

D.Sc.	Doctor of Philosophy (Science or Geoscience)
M.Sc.	Master of Science
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

### [a] Human Geography

M.Sc.	Asami, Takashi (2017): Meaning of Place in UFO Sightings Case.
M.Sc.	Matsubara Kana (2017): Response to Localization of Shopping Districts and Regional Change in the Area around TOKYO SKYTREE.
M.Sc.	Wang Ying (2017): Characteristics of Vacation Rental "MINPAKU" in Tokyo Special Wards Where Chinese Tourists Visiting Japan Stay: Case Study of Chinese Managing "MINPAKU".
M.Sc.	Yusa, Satoru (2017): Structural Change of Inland Waters Fishery Associated with Lake Environment Changing in Lake Kasumigaura
M.Sc.	Zhou Yufang (2017): Tourism Development in the Three Gorges Region from the Perspective of Tourists Behaviors' Pattern.

## **[b] Regional Geography**

- M.Sc. Aso, Kohei (2017): The Formation and Modification of Agglomeration of Industrial Small and Medium Enterprises in Fringe Area of Southern Tokyo District: The Case of Shimonoge Area in Takatsu Ward, Kawasaki City, Kanagawa Prefecture.
- M.Sc. Kai, Souichirou (2017): Comprehensive Disaster Prevention against Tsunami in Areas with Evacuation Difficulties in Miyazaki City: Cases of Futatabi and Shimayama Districts.
- M.Sc. Kobayashi, Ai (2017): Transformation of Nagaoka Fireworks Festival as a Community Development Resource.
- M.Sc. Nagura, Kazuki (2017): A Geographical Study on the Sustainability of Ski Resort: Through the Official Competitions of Skiing in Declining Phase of Ski Tourism.
- M.Sc. Tomita, Atsushi (2016): The Formation and Sustainable System of Green Space through Volunteering Activities in a Forest Park, Kawasaki City.
- M.Sc. Yasumura, Kensuke (2017): Development of Contents Tourism in Hakodate, Hokkaido.

## **[c] Spatial Information Science**

- D. Sc. Doan Quang Van (2016): Numerical Study on Regional Climate Change due to the Past and Future Urbanization over Greater Ho Chi Minh City, Vietnam.
- D. Sc. Hou, Hao (2017): Walking Behavior and Neighborhood Environment: A Case Study in Tokyo Metropolitan Area.
- D. Sc. Subasinghe, Shyamantika (2017): Urban Process and Future Development of Colombo Metropolitan Area, Sri Lanka: An Application of Geospatial Techniques.
- M. Sc. Feng, Jingge (2017): Flight Risk Analysis for Logistics Drone Routes: A Case Study of Tsukuba City.
- M. Sc. San Cristobal, Gaston Guido (2017): Gender Differences in Spatial Mobility for Work Purposes: A Case of Study in the Tokyo Metropolitan Area.
- M. Sc. Igari, Kosuke (2016): Development of heat environment model based on three-dimensional plume model.
- M. Sc. Jiao, Bolei (2017): Progress of Urbanization in New Rural Village and Its Influence: A Case study of Huaxi Village in Jiangyin in Jiangsu Province.
- M. Sc. Shu, Mengyu (2017): Evaluation of the Giant

Panda's Habitat in Wolong Nature Reserve, Sichuan Province, China.

- M. Sc. Shimizu, Asami (2016): Development of prediction formula for the number of heat stroke patients considering regionality and seasonality.
- M. Sc. Takeshita, Kazuki (2017): Movement History of New Town Residents and Their Factors: A Case Study of Toride Chuo-Town.
- M. Sc. Wang, Ruci (2017): Dynamic Change of Land Use/Cover in Tianjin City Based on Markov and Cellular Automata Model.
- M. Sc. Azegami, Yasuhiko (2016): Comparison of planetary boundary layer schemes in WRF model for forecasting ramp phenomena in wind power generation.

## **[d] Hydrologic Sciences**

- D. Env. Ikeda, Koichi (2016): Groundwater Flow System Revealed by Hydrological and Geochemical Approaches in Ono Basin, Fukui Prefecture, Japan.
- D. Env. Nguyen, Thi Thu (2017): Groundwater and Surface Water Cycle System in Mekong Delta, Vietnam.
- M. Env. Khonsavanh, Vilaysack (2017): Dissolved Inorganic Carbon Loads from Rice and Lotus Fields to Lake Kasumigaura.
- M. Sc. Sato, Rei (2017): Tracing capture zone of tap water supply wells in a mountain-plain system.
- M. Env. Sato, Yutaro (2017): Discharge Process of Cesium in the Stream in a Headwater Catchment.
- M. Env. Hamaguchi, Shinji (2017): Evaluation of Artificial Groundwater Recharge using Paddy Field in Ono City, Fukui Prefecture, Japan.
- M. Env. Watanabe, Yasuto (2017): Modeling of Surface Water and Groundwater Cycle System in Mountainous Catchment Underlain by Granite.

## **[e] Atmospheric Science**

- D.Sc. Aizawa, Takuro (2016): New Perspectives for the Structure and Development Mechanism of the Arctic Cyclones.
- M. Sc. Sunaga, Tomohiro (2016): Analysis of the Difference between Arctic Oscillation and North Atlantic Oscillation: using Self-organizing Maps.
- M. Sc. Sakurai, Makoto (2016): Modification of the Baroclinic Instability Wave Associated with the Arctic Amplification.
- M. Sc. Terauchi, Shuhei (2016): A Study on Hybrid Data Assimilation with a Simplified Primitive-equation Global Model.
- M. Sc. Kaneko, Takaya (2016): Occurrences and En-

vironment of Mesoscale Convective Systems around the Indian Subcontinent.

- M. Env. Ushigami, Naoto (2016): Contribution of Diabatic Heating to the Establishment of the South Asian High.
- M. Env. Takikawa, Hiroaki (2016): Air-sea Coupled Processes involved in the Seasonal Evolution of the African monsoon.
- M. Env. Nozaki, Eiichi (2016): Factors for the formation of Summertime Okhotsk High.
- M. Env. Masuda, Takamasa (2016): Future Changes in Northern Hemisphere Snowfall, Snow Amount, and Snowmelt.
- M. Env. Miwa, Kana (2016): Seasonal Modulation of Typhoon Activity during Decaying Phase of the El Niño.

#### [f] Geomorphology

- M. Sc. Aoki, Shinya (2017): Snow-induced effects on vegetation in the treeline ecotone of Mt. Kisokoma: A discussion on the surface roughness at various scales and snow distribution.
- M. Sc. Kawai, Akihiko (2017): Effects of the earthquakes on the occurrence of shallow landslides: A case in Tago Mountains in northern Ibaraki Prefecture.
- M. Sc. Nawata, Akinori (2017): Distribution of dissolution rates of limestone in solution dolines: Influence of subsurface water chemistry.
- M. Sc. Takeda, Naofumi (2017): The estimation of a rainfall index triggering landslides based on hydrological observations at Mt. Mihara, Izu-Oshima Island, Japan.

#### Research Activities

Each research group had the following research activities during the academic year 2016.

#### [a] Human Geography

##### *Research projects*

- Matsui, K., Yamashita, K. and Ichikawa, Y. (2016-2018): Geographical studies on sustainable development in Tsuchiura City and the surrounding region.
- Matsui, K. (2016- ): Theoretical and practical studies on the creation of World Heritage Sites in terms of commodification of the place, project with Kureha, M., Tsutsumi, J. and others.

##### *Research grants*

- Ichikawa, Y. (2016- ): A study of restructuring on the rural mountains of developed countries under the multi-functional regime. Grant-in-Aid for Young Scientists (B), JSPS, JPY 351,000.
- Matsui, K. (PI: Kureha, M.) (2015- ): Geographical study on the inbound tourism in Japan. Grant-in Aid for Scientific Research (B), JSPS, JPY 300,000.
- \_\_\_\_\_ (PI: Matsui, K.) (2015- ): Theoretical and practical studies on the creation of World Heritage Sites in terms of commodification of the place. Grant-in Aid for Scientific Research (A), JSPS, JPY 5,980,000.
- \_\_\_\_\_ (PI: Matsui, K.) (2016- ): Geographical study on the healing space for the Otaku. Grant-in Aid for Challenging Exploratory Research, JSPS, JPY 1,300,000.
- Yamashita, K. (2014- ): Adaptation strategy of the ethnic groups. Grant-in Aid for Scientific Research (Challenging Exploratory Research), JSPS, JPY 800,000.

##### *Overseas fieldwork*

- Ichikawa, Y. (2016, Aug.): Observation of cultural heritage in France, under JSPS grant.
- Matsui, K. (2016, Aug.): Observation of heritage tourism in China, under JSPS grant.
- Yamashita, K. (2016, Nov.-Dec.): Chinese community and Chinatowns in Singapore, under JSPS grant.

##### *Others*

- Ichikawa, Y. (2016, Apr.-Aug.): Special lecture on regional geography of Japan in Nagano Univ.
- Matsui, K. (2016, Apr.-Aug.): Special lecture on human geography in Toyo Univ.
- \_\_\_\_\_ (2016, Sep.-2017, Mar.): Special lecture on cultural geography in Rikkyo Univ.
- \_\_\_\_\_ (2016, Sep.-2017, Mar.): Special lecture on regional geography in Kyoritsu Women's Univ.
- Yamashita, K. (2016, Apr.-2017, Mar.): Special lecture on regional geography and cultural geography in Waseda Univ.
- \_\_\_\_\_ (2017, Jan.): Special lecture on human geography in Tokyo Univ.

#### [b] Regional Geography

##### *Research projects*

- Kureha, M. (2015- ): A geographical study on the development of inbound tourism in Japan, project with Funck, C. (Hiroshima Univ.), etc.
- Kureha, M. and Tsutsumi, J. (2015- ): Tourism development of world heritage areas and commodification of local places, project with Matsui, K. (Univ. of Tsukuba), etc.
- Kureha, M., Tsutsumi, J. and Yamashita, A. (2015-

- 2017): Geographical studies on regional ecology in Iiyama City and the surrounding region.
- Yamashita, A. (2014- ): Assessment for tolerance to drought with the investigation of the sharp increase of biofuel raw material production and hydrological environment in Sertão, Brazil, project with Miyaoka, K. (Mie Univ.).
- \_\_\_\_\_ (2014- ): Spatial visualization of urbanization in Asian and African capital cities, project with Murayama, Y. (Univ. of Tsukuba).
- \_\_\_\_\_ (2015- ): Study on Korean urban structure for revitalization of local cities in low development period, project with Kaneko, J. (Ehime Univ.).
- Research grants*
- Kureha, M. (2015-2018): A geographical study on the development of inbound tourism in Japan. Grant-in Aid for Scientific Research (B), JSPS, JPY 4,600,000.
- Kureha, M. (2015-2018): Building model of the resort development in terms of landscape changes and local image. Grant-in Aid for Challenging Exploratory Research, JSPS, JPY 700,000.
- Tsutsumi, J. (2013-2017): A study of the coordination between Aboriginal's land resource management and tourism development by using WebGIS. Grant-in Aid for Scientific Research (C), JSPS, JPY 1,200,000.
- Overseas fieldwork*
- Kureha, M. (2016, Aug): Tourism development of world heritage areas and commodification of local places in Austria, under JSPS grant.
- \_\_\_\_\_ (2016, Sep.): Development of ski resorts in Tyrol, Austria, under JSPS grant.
- \_\_\_\_\_ (2017, Feb.): Development of ski resorts in Tyrol, Austria, under JSPS grant.
- Tsutsumi, J. (2016, Aug.-Sep.): Investigation of urban development in Melbourne, Australia, under JSPS grant.
- \_\_\_\_\_ (2017, Feb.): Development of ski resorts in Tyrol, Austria, under the grant from the University of Tsukuba (Discretionary grant from the dean of faculty).
- \_\_\_\_\_ (2017, Feb.-Mar.): Promotion of exchange program between Australian and Japanese universities, Australia, under the grant from the University of Tsukuba (Discretionary grant from the dean of faculty).
- Yamashita, A. (2016, Jul.): Urban structure in Incheon City, South Korea, under JSPS grant.
- \_\_\_\_\_ (2016, Aug.): Urban structure in local cities in South Korea, under JSPS grant.
- \_\_\_\_\_ (2016, Aug.-Sep.): Environmental and agricultural changes by irrigation development in Nordeste, Brazil, under JSPS grant.
- \_\_\_\_\_ (2017, Feb.-Mar.): Urban development in Jakarta Metropolitan Region, Indonesia, under JSPS grant.
- \_\_\_\_\_ (2017, Mar.): Land use characteristics in Buyeo and Gongju Cities, South Korea, under JSPS grant.
- Others*
- Kureha, M. (2016): Special lecture on socioeconomic geography in Hosei Univ.
- \_\_\_\_\_ (2016): Special lecture on region and tourism in the Open Air Univ. of Japan.
- \_\_\_\_\_ (2016): Special lecture on rural tourism in graduate school of Nihon Univ.
- Tsutsumi, J. (2016): Geography A in Takasaki City Univ. of Economics.
- \_\_\_\_\_ (2016): Methodology of fieldwork in Takasaki City Univ. of Economics.
- \_\_\_\_\_ (2016): Area studies 5 in Rikkyo Univ.
- \_\_\_\_\_ (2016): Regional geography A in Toyo Univ.
- \_\_\_\_\_ (2016): Regional geography B in Toyo Univ.
- \_\_\_\_\_ (2016): Human geography D in Ibaraki Univ.
- [c] Spatial Information Science**
- Research projects*
- Kusaka, H. (2015-2019): SI-CAT project, Ministry of Education, Culture, Sports, Science and Technology (MEXT) in Japan. Development of evaluation technologies of sectoral impact and adaptation measures on climate change/ Development of models of thermal environment and health impact for assessment of adaptation measures.
- \_\_\_\_\_ (2014-2018): NEDO project, Research and development on adapting technology of power system to output fluctuation/ Wind power generation prediction, Control sophistication.
- \_\_\_\_\_ (2014-2018): SIP project, Ministry of Agriculture, Forestry and Fisheries in Japan. Creation of elucidation and risk information of occurrence realities of Foehn.
- \_\_\_\_\_ (2013-2017): JSPS KAKENHI, Urban precipitation observations. (collaborated with Prof. T. Mikami)
- \_\_\_\_\_ (2012-2016): Collaborative research with TOSHIBA, weather prediction.
- Morimoto, T. (2016): Productivity and Land Use Change of Agriculture in the Mountainous Areas of Central Japan: Spatial Information Science and Field Observation.
- \_\_\_\_\_ (2016): Improvement of Usage of Field GIS in Education.

Murayama, Y. (2016): Spatial visualization of urbanization in Asian and African capital cities, project under JSPS.

\_\_\_\_\_ (2016): Transformation of urban volume and ecosystem services in the mega-cities of Southeast Asia. Grant-in-Aid for Challenging Exploratory Research, JSPS, JPY 1,100,000.

\_\_\_\_\_ (2016): Land-use classification in mega cities in developing countries, project under Statistical Data Bank, University of Tsukuba.

\_\_\_\_\_ (2016): Population estimation of rapidly growing cities in Southeast Asia using GIS/RS, project under JSPS.

\_\_\_\_\_ (2016): New development of spatial analysis functions connecting geographical information science and urban engineering, project under JSPS.

\_\_\_\_\_ (2016): Publication and development of open-access e-learning material for GIS education, project under JSPS.

#### *Research grants*

Kusaka, H. (2015-2019): Development of evaluation technologies of sectoral impact and adaptation measures on climate change/ Development of models of thermal environment and health impact for assessment of adaptation measures. Ministry of Education, Culture, Sports, Science and Technology (MEXT) in Japan, Social Implementation Program on Climate Change Adaptation Technology (SI-CAT), JPY 4,675,000 (2016).

\_\_\_\_\_ (2014-2018): Research and development on adapting technology of power system to output fluctuation/ Wind power generation prediction, Control sophistication. New Energy and Industrial Technology Development Organization (NEDO), JPY 2,300,000 (2016).

\_\_\_\_\_ (2014-2018): Creation of elucidation and risk information of occurrence realities of Foehn. Ministry of Agriculture, Forestry and Fisheries in Japan, the Cross-ministerial Strategic Innovation Promotion Program (SIP), JPY 200,000 (2016).

\_\_\_\_\_ (2013-2017): Elucidation of occurrence factor in summer heat island, tropical cyclone and local heavy rain in the Tokyo metropolitan area. Urban precipitation observations (JSPS KAKENHI), JPY 200,000 (2016).

\_\_\_\_\_ (2012-2016): Weather prediction for solar photovoltaic generation and Meteorological disaster prediction. Collaborative research with TOSHIBA, JPY 1,000,000 (2016)

Murayama, Y. (2016): Spatial visualization of urbanization in Asian and African capital cities. Grant-in-Aid

for Scientific Research B, JSPS, JPY 2,600,000.

\_\_\_\_\_ (2016): Transformation of urban volume and ecosystem services in the mega-cities of Southeast Asia. Grant-in-Aid for Challenging Exploratory Research, JSPS, JPY 1,100,000.

\_\_\_\_\_ (2016): Land-use classification in mega cities in developing countries. Statistical Data Bank Project, University of Tsukuba, JPY 500,000.

\_\_\_\_\_ (2016): Publication and development of open-access e-learning material for GIS education. Grant-in-Aid for Scientific Research A, JSPS (Representative: Oguchi, T.).

\_\_\_\_\_ (2016): New development of spatial analysis functions connecting geographical information science and urban engineering, project under JSPS, JPY 100,000 (Representative: Asami, Y.).

#### *Overseas fieldwork*

Murayama, Y. (2017, Feb.-Mar.): Urbanization in Indonesia, under JSPS grant.

#### *Attendance at international meetings*

Morimoto, T. (2016, Jul.): The 24th Colloquium of the Commission on the Sustainability of Rural Systems, IGU, Liege, Belgium.

\_\_\_\_\_ (2016, May): Japan Geoscience Union Meeting 2016. Chiba, Japan.

#### *Visited researchers*

Dr. Ronald C. Estoque from JSPS, Apr. 2016- Mar. 2017 (Host researcher: Murayama, Y.).

## **[d] Hydrologic Sciences**

### *Research projects*

Asanuma, J. and Aida, K. (2014- ): Hydro-Meteorological studies with Multi-satellite sensors and Multidimensional approaches at Mongolian Grassland (Hydro4m, JAXA G-COM Research Announcement).

\_\_\_\_\_ (2014- ): Development of turbulence measurement methodologies with Doppler sodar and sonic anemometer for AWS. (with Sonic inc.)

\_\_\_\_\_ and Aida, K. (2016-2018): Validating measurements of surface soil moisture from satellite images, cooperative research (with NEC)

Tsujimura, M. (2015- ): Spatial and Temporal Variation of Residence Time in Groundwater and Spring Water in Headwater Catchments Underlain by Different Lithology.

\_\_\_\_\_ (2016- ): Application Microbe Information to Groundwater Flow System Research.

Tsujimura, M. and Asanuma, J. (2012-2017): Interdisciplinary Study on Environmental Transfer of Radionuclides from the Fukushima Daiichi NPP Accident (ISET-R).

### *Research grants*

- Asanuma, J. and Aida, K. (2014-2016): Multi-scale Validations of AMSR2 Products with In-situ Observations at Mongolian Grassland and Modeling Outputs (JAXA G-COM Research Announcement).
- \_\_\_\_\_ (2014-2017): Land surface data assimilation experiments with in-situ large-scale observations, Grant-in-Aid for Scientific Research (B) of the Japan Society for the Promotion of Science.
- \_\_\_\_\_ and Aida, K. (2016-2018): Validating measurements of surface soil moisture from satellite images, cooperative research with NEC.
- Sugita, M. (2015-2020): Grant-in-Aid for Scientific Research (C) of the Japan Society for the Promotion of Science.
- Tsujimura, M. (2016-2019): Evaluation of Groundwater Residence Time Using Multi Tracers and Numerical Simulation Approaches in Headwater Catchments. Grant-in-Aid for Scientific Research (B) of the Japan Society for the Promotion of Science.
- \_\_\_\_\_ (2016): Water resources evaluation in mountainous area focusing on residence time and storage volume of groundwater. Suntory Global Innovation Center Limited.
- \_\_\_\_\_ (2016): Water environment research. Ono City, Fukui Prefecture.
- Yamanaka, T. (2015-2019): Improving evaluation of water balance at mountainous catchments with combined use of isotopic tracers and numerical models. Grant-in-Aid for Scientific Research (B) of the Japan Society for the Promotion of Science.

### *Overseas fieldwork*

- Asanuma, J. and Aida, K. (2016, Sep.): Field investigation and instruments maintenance at Semi-arid grassland in Mongolia (under, MAHASRI and Hydro4m project).

### *Attendance at international meetings*

- Asanuma, J. (2017, Jan.): Joint PI Meeting of Global Environment Observation Mission 2016, 2017/1/12-16, Tokyo.
- \_\_\_\_\_ (2016, Aug.): JUC supports to the MDRM program: Messages from Japanese Universities, Seminar on Disaster Risk Management & Open day for MDRM, 2016/08/02
- Tsujimura, M. (2016, Apr.): General Assembly of European Geophysical Union, 2016/4/17-22, Vienna, Austria.
- \_\_\_\_\_ (2016, Oct.): 24th UNESCO IHP-Regional Steering Committee Meeting in Conjunction with the International and National Water Dialogue on the Delivery of SDG 6 in Mongolia and Wider

Asia and the Pacific Region. 2016/10/24-26, Ulaanbaatar, Mongolia.

\_\_\_\_\_ (2016, Dec.): Expert Meeting on “Water Harvesting and Groundwater Recharge” by UNESCO Regional Center on Capacity Development and Research in Water Harvesting. 2016/12/10-11, Khartoum, Sudan.

## **[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 Ljubljana).
- \_\_\_\_\_ (2016): Application of PUFF model for TNSC and USC of JAXA (TNSC, JAXA).
- \_\_\_\_\_ (2013- ): Volcanic ash prediction by PUFF model (SATREPS, Kyoto University).
- \_\_\_\_\_ (2015- ): Norway and Japan Education and Research Partnership (NORPAN, Univ. Bergen).
- Ueda, H. (2016- ): Joint study of MRI-CGCM (Japan Meteorological Agency).
- \_\_\_\_\_ (2016- ): Palaeoclimate Modelling Intercomparison Project (PMIP)
- \_\_\_\_\_ (2016- ): Pliocene Model Intercomparison Project (PlioMIP)
- Ueno, K. (2016- ): Joint study of PMM 8thRA (JAXA)
- \_\_\_\_\_ (2016- ): Joint study of solid precipitation measurement (Gifu Univ.)

### *Research grants*

- Tanaka, H. (2015-2016): Kuchinoerabu-jima Volcanic Ash Project 2015, JSPS, (PI by Iguchi) JPY 300,000.
- \_\_\_\_\_ (2016): Application of PUFF model for TNSC and USC of JAXA, TNSC/JAXA, (PI by HL Tanaka) JPY 1,260,000.
- Ueda, H. (2016-2017): Program for Risk Information on Climate Change, Ministry of Education, Culture, Sports, Science and Technology, JPY 178,538,900.
- Ueno, K. (2016- ): Joint study of JAXA PMM 8thRA, (PI by K. Ueno) JPY 1,712,162.

### *Attendance at international meetings*

- Ueda, H. (2016, Aug.): CASPO seminar of Scripps Institute of Oceanography, University of California, San Diego, USA.
- \_\_\_\_\_ (2016, Dec.): 2016 AGU Fall Meeting, San Francisco, CA, USA, 2016
- Ueno, K. (2016, Jul.): International symposium on mountains in Japan and world, July 23, Tokyo, Japan.
- \_\_\_\_\_ (2016, Aug.): International workshop on land surface multi-spheres processes of Tibetan Plateau.

Aug. 8-10, Xining, China.

\_\_\_\_\_ (2017, Mar.): The 1st international symposium of river basin studies. March 7, Gifu University, Japan.

#### *Visited researchers*

Dr. B. Su (Univ. of Twente, Netherland), June, 2016  
(Host researcher: Ueno, K.).

#### *Others*

Ueno, K and Ando, N. (2016, Sep.): An award of annual best paper by the Japanese Society of Snow and Ice.

### **[f] Geomorphology**

#### *Research projects*

Hattanji, T. (2009- ): Estimating long-term chemical weathering rate in granitic areas of Japan using cosmogenic radio nuclides and geochemical analysis, project with Matsushi, Y. (Kyoto Univ.)

\_\_\_\_\_ (2009- ): Monitoring subsurface water response to heavy rainfall for prediction of slope stability in landslide-prone areas, project with Wakatsuki, T. (NIED)

\_\_\_\_\_ (2013- ): Hydrogeomorphic factors triggering shallow landslides in the Izu Ohshima Island, project with Terajima T. (Kyoto Univ.) and Matsushi, Y. (Kyoto Univ.)

\_\_\_\_\_ (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. (Hokkaido U.)

Ikeda, A. (2008- ): Permafrost monitoring on Mt. Fuji, project with Iwahana, G. (IARC-UAF)

\_\_\_\_\_ (2012- ): Ground temperature monitoring in Nishikoma Research Forest, project with Tanaka, K. (Univ. Tsukuba) and Kobayashi, H. (Shinshu Univ.)

Matsuoka, N. (2004- ): Arctic periglacial geomorphology, international project with Christiansen, H. H. (Univ. Centre in Svalbard, Norway), Humlum, O. (Univ. Oslo, Norway) and Watanabe, T. (Kitami IT)

\_\_\_\_\_ (2007- ): Monitoring rock slope deformation and failure in the Japanese Alps, project with Nishii, R. (Niigata Univ.)

\_\_\_\_\_ (2013- ): Experimental study on Martian landscape, project by the geomorphological research group.

\_\_\_\_\_ (2014- ): Systematic understanding of mountain landform dynamics in the Japanese and Swiss Alps, international project with Stoffel, M., Trappman, D. (Univ. of Bern), Imaizumi, F. (Shizuoka Univ.) and Ikeda, A.

Parkner, T. (2014- ): Gully erosion on unstable hillslopes in the East Coast Region, North Island, New Zealand.

\_\_\_\_\_ (2013- ): Evaluation of class response systems in G30 lectures, project with Pietzner, V. (Univ. Oldenburg, Germany)

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. (2016): Improving prediction models for shallow landslides based on channel-head mapping using LiDAR DEMs. Grant-in-Aid for Scientific Research (C), JSPS, JPY 1,400,000.

Ikeda, A. (2016): Geomorphic history of glacial and periglacial environments on the Japanese Alps: An estimation using digital elevation data and present conditions. Grant-in-Aid for Scientific Research (C), JSPS, JPY 2,600,000.

\_\_\_\_\_ (2016): Research workshop: multi-approach to reveal permafrost dynamics. Grant for collaboration, Inst. Low Temp. Sci., Hokkaido Univ., JPY 429,000.

Matsuoka, N., Ikeda, A., Imaizumi, F. and Nishii, R. (2016): Systematic understanding of mountain landform dynamics: comparison between Japanese and Swiss Alps, JSPS, JPY 2,340,000.

#### *Overseas fieldwork*

Matsuoka, N. (2016, Jun.): Landscape dynamics of polar permafrost in Svalbard.

Matsuoka, N. and Ikeda, A. (2016, Jul.-Aug.): Periglacial observations in the Swiss Alps and Svalbard, toward systematic understanding of mountain landform dynamics and planetary geomorphology (under JSPS grant).

Parkner, T. (2016, Sep.): Ground truthing of aerial photo interpretation on gully development on the North Island of New Zealand to understand gully erosion on unstable slopes.

#### *Attendance at international meetings*

Matsuoka, N. (2016, Jun.): 11th International Conference on Permafrost, Potsdam, Germany.

Parkner, T. (2016, May): 7th International Symposium on Gully Erosion, Purdue University, West Lafayette, USA.

#### *Visited Researchers*

Dr. Markus Stoffel, Dr. Daniel Trappman and Mr. Michael Fehlmann (Univ. Bern, Switzerland), 23rd

Sep.–6th Oct. 2016.  
Mr. Li Anyuan (Univ. Chinese Academy of Sciences),  
1st Oct. 2015–30th Sep. 2016.

### [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  
GEOSS: Global Earth Observation System of Systems  
GI: Geophysical Institute  
GISA: GIS Association in Japan  
IARC: International Arctic Research Center  
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, Uni-  
versity 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

### 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) and in 2015 for the next five years (from 2015 to 2019) 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.

University of Tsukuba supported a student group exchange program in 2016 called ‘Habatake Tsukuba Students’ and the general circulation group were granted for visiting IARC/UAF. Six graduate students (T. Sunaga, T. Aizawa, M. Sakurai, S. Terauchi, T. Sasaki, T. Ohtsuka) and two undergraduate students (T. Kurihana, and A. Endoh) visited UAF in November 2016 for one week. They participated in Scientific Seminar hosted by IARC, attended graduate level classes in UAF, and visited Poker Flat Research Range. Dr. Hajo Eicken, Director of IARC, served as the contact person, and Dr. M. Nicole took care of their schedule during their stay.

- (1) Exchange of Researchers: None
- (2) Exchange of Graduate Students: T. Sunaga, T. Aizawa, M. Sakurai, S. Terauchi, T. Sasaki, T. Ohtsuka, T. Kurihana, and A. Endoh.
- (3) Collaborative Research:  
Research on Arctic Oscillation, PI: H.L. Tanaka (Univ. of Tsukuba).
- (4) Exchange of scientific documents:  
Tsukuba Geo-environmental Science, Vol.11, 2015, Univ. of Tsukuba.  
Geophysical Institute Biennial Report, 2016, Univ. of Alaska.  
Geophysical Institute Quarterly, 2016 Univ. of Alaska.