

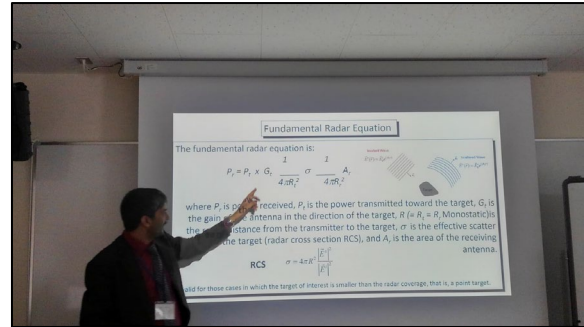
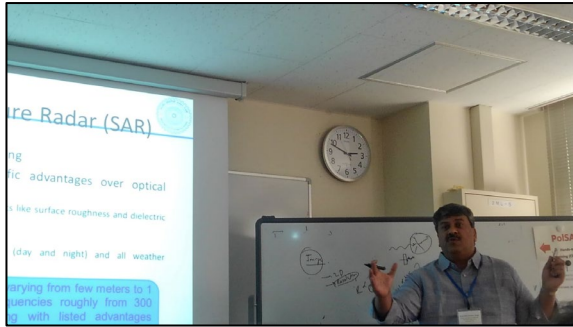
Japan-India-Russia Symposium on Geospatial data for Environmental Monitoring (JIRSGEM)-2019

Graduate School of Environmental Science, Hokkaido University
16th – 18th October 2019

JIRSGEM-2019 symposium was organized at Graduate School of Environment in Hokkaido University, Japan. All the speaker and attendees were well received by Dr. Ram Avtar. Purpose of this meeting was to discuss about advanced application of geospatial data for environment monitoring. This event also included technical sessions, poster presentation, was an open event, welcomed for all participants. The event was inaugurated by Executive Director of Global Land Programme Japan Nodal office, Prof. Teiji Watanabe. After the inauguration and welcome speech, we officially started with technical session. The technical session was followed by poster presentation on the same day. Further the event was ended with a closing remark by Prof. Shiro Tsuyuzaki. On the next day, hands on trainings on POLSAR were conducted by Dr. Ram Avtar, Prof. G. Singh and Prof. D. Singh. Eventually, on the third day, the symposium ended with the final session of Field excursion to Hokkaido University Botanical garden. Summary of each speaker and details of complete event are specified in the Annexure 1 - 2.



Day 1 – Presentation and Seminar(16th October 2019)



Day 2 – PolSAR hands on training (17th October 2019)



Day 3 – Field excursion to Hokkaido University Botanical Garden (18th October 2019)

Annexure-1

Programme Schedule (JIRSGEM-2019)

Date/Times	Event/Presentation	Resource Person
Day 1 - October 16, 2019 (Wednesday) Room E-206		
09:00-9:30	Registration	
9:30-9:40	Inauguration and welcome speech	<i>Prof. Teiji Watanabe, Executive Director, Global Land Programme Japan Nodal office, Japan</i>
9:40-9:50	Group Photo	
9:50-10:50	Technical Session-I	Chair: Prof. Gulab Singh
9:50-10:10	Remote monitoring of forest change in the north of Russia since 2000	Dr. Olga Tutubalina, Moscow State University, (MSU), Russia

10:10-10:30	Efficient Application of Polarimetric Information with Artificial Intelligence for Mixed Pixel Analysis	Prof. Dharmendra Singh, Indian Institute of Technology Roorkee (IITR), India
10:30- 10:50	Application of UAV in agriculture and dairy (2016-2019)	Prof. Kanichiro Matsumura, Tokyo University of Agriculture, Japan
10:50-11:00	Coffee Break	
11:00-12:00	Technical Session-II	Chair: Teiji Watanabe
11:00-11:20	Glacier movement in Himalaya using DInSAR	Prof. Gulab Singh, Centre for Resource Engineering (CSRE), Indian Institute of Technology Bombay (IITB), India
11:20-11:40	Study of forest vegetation in central Sakha-Yakutia, Russia, using satellite radar imagery	Dr. Polina Mikhailyukova Moscow State University, (MSU), Russia
11:40-12:00	Glacial lakes and glacier lake outburst floods (GLOFs) in Nepal Himalaya	Mohan Chand, Graduate School of Environmental Earth Science, Hokkaido University, Japan
12:00-13:00	<i>Lunch break</i>	
13:00-14:40	Technical Session-III	Chair: Prof. Olga Tutubalina
13:00-13:20	Monitoring spatio-temporal urban expansion in Delhi and Bangladesh	Dr. Huynh Vuong Thu Minh, Dr. Ram Avtar Graduate School of Environmental Science, Hokkaido University, Japan
13:20-13:40	Multi-sensor data analysis for agricultural applications	Igor Sereda, Moscow State University, (MSU), Russia
13:40-14:00	A novel approach towards forest fragmentation susceptibility: An example from Indian Himalaya	Dr. Amit Kumar Batar*, Prof. Teiji Watanabe, Prof. Hideaki Shibata *Field Science Center for Northern Biosphere, Hokkaido University, Japan
14:00-14:20	Applications of UAVs to detect health of young oilpalm in Malaysia	Stanley Anak Suab, Dr. Ram Avtar Graduate School of Environmental Science, Hokkaido University, Japan
14:20-14:30	<i>Coffee break</i>	
14:30-15:50	Technical session-IV	Chair: Prof. Kanichiro Matsumoto
14:30-14:50	Data Processing for Remote Sensing Applications: Challenges and Issues	Dr. Ashwani Aggarwal, Electrical and Instrumentation Engineering Department, Sant Longowal Institute of Engineering and Technology, India
14:50-15:10	Mapping and analysis of forests in central Kola peninsula using Sentinel-1 SAR imagery	Anna Sozontova, Moscow State University, (MSU), Russia
15:10-15:30	Using blockchain technology to keep ownership while sharing information and data	Benjamin Collett and Franz Bergmeier Rankoshi Mountain Lab, Hokkaido, Japan
15:30-15:50	Distribution of Marine litter in Rurua, Shiretoko Peninsula	Yu Sugita Graduate School of Environmental Science, Hokkaido University, Japan
15:50-16:50	Poster and networking session with Coffee break	Chair: Prof. Dharmendra Singh/Dr. Ram Avtar
	Applications of the Robust Decision-Making Framework in Assessing Policy Measures on Urban Water Management under the Context of Climate Uncertainty and Urbanization	Nguyen Hong Duc Graduate School of Environmental Science, Hokkaido University, Japan
	Digital Building Height (DBH) Modeling by remote sensing approach: A case study on Dhaka Metropolitan Area (DMA), Bangladesh	Md. Mustafizur Rahman Graduate School of Environmental Science, Hokkaido University, Japan
	Land Surface Temperature Variations and Green Cover Loss During 1990-2019 in the Coastal City of Panaji, India	Manish Ramaiah Graduate School of Environmental Science, Hokkaido University, Japan
	Use of satellite remote sensing data in Climatology of Tropical Cyclone recurvature frequency over the Indian Ocean	Raveena Raj Graduate School of Environmental Science, Hokkaido University, Japan

	Detection of Soiling on Photovoltaic Solar Panels Using Optical satellite data on Google Earth Engine	Hitesh Supe Graduate School of Environmental Science, Hokkaido University, Japan
	Correcting Topographic Effect on Landsat-8 Images: An Evaluation of Topographic Correction Using Different DEMs in Indonesia	Deha Umarhadi Graduate School of Environmental Science, Hokkaido University, Japan
	Significant decrease of mangrove forests through the last three decades in southeastern coastal areas of Vietnam	Huynh Thi Cam Hong Graduate School of Environmental Science, Hokkaido University, Japan
16:50-17:00	<i>Closing remark</i>	<i>Prof. Shiro Tsuyuzaki, Graduate School of Environmental Science, Hokkaido University, Sapporo, Japan</i>
Day 2 – October 17, 2019 (Thursday) Room (C04-2)		
09:30-12:30	PolSAR hands-on-training-I Prof. G. Singh/Prof. D. Singh/ Dr. Avtar	
12:30-13:30	Lunch break	
13:30–15:30	PolSAR hands-on-training-II Prof. G. Singh/ Prof. D. Singh/ Dr. Avtar	
16:00- 17:00	Round table discussion	
Day 3 - October 18, 2019 (Friday)		
10:00-12:00	Field excursion to Hokkaido University Botanical Garden	

Organizers:

- Faculty of Environmental Earth Science, Hokkaido University, Japan
- GLP Japan Nodal Office
- Moscow State University, Russia
- Indian Institute of Technology Roorkee, India
- Indian Institute of Technology Bombay, India

Convener:

Dr. Ram Avtar (Assistant Professor), Graduate School of Environmental Earth Science, Hokkaido University, Japan

Co-convener:

Prof. Watanabe Teiji, Hokkaido University, Japan

Annexure-2

Summary of speakers

9:50 - Dr. Olga Tutubalina

Monitoring of forest changes caused because of climatogenic factors. Analysis involved use of MODIS LAI, GSV, UAV survey (100m) technologies. The study's purpose was to determine an algorithmic relation between tree species, height, Above Ground Biomass (AGB) and Diameter at Breast Height (DBH).

10:10 - Prof. Dharmendra Singh

Introducing fusion technique that could help in monitor agricultural land at low cost. This technique combines information from satellite Landsat-8 data and drone data, to generate high resolution and high precision results.

10:30 – Prof. Kanichiro Matsumura

Describing new application of UAV in agricultural field by measuring and determining highly fertilized area. Details of techniques utilized like BNDVI to make observation in

sync with harvesting season at the given test site. Details of integrating satellite data with UAV data for better data output.

11:00 - Prof. Gulab Singh

Tracking Glacier movement using DInSAR technology. More than 9000 glaciers could be monitored by incorporating pixel tracking and offset tracking methods. It also discussed how phase information is helpful in detecting glacier movements.

11:20 - Dr. Polina Mikhailyukova

Discussing detection of different types of tree species in forest using SAR technology. Applied H alpha dual Pol Decomposition.

11:40 – Mohan Chand

Detection of change in glacier and glacier lake outburst flood over the years using Landsat image collection and UAV survey.

13:00 - Dr. Ram Avtar

Application of SAR in monitoring rice cropping in Vietnamese Mekong Delta region. Identifying different types of rice cropping system distributed across the region.

13:20 – Igor Sereda

Utilization of UAV and satellite multi sensor for agricultural applications. Use of GNDVI (Green Normalized Differential Vegetation Index) and SAFY (Simple Algorithm For Yield) to estimate yield production.

13:40 - Dr. Amit Batar

Detection of non-healthy forest area also know as fragmentation of forest using Remote sensing. Incorporating Landsat 5 and Landsat 8 satellite images to generate model.

14:00 – Stanley Anak Suab

Monitoring Oil palm farm to determine health of plants using UAV. Measuring crown projection area and NDVI to further classify trees into different categories of health indexes.

14:30 – Dr. Ashwani Aggarwal

Discussing Challenges and issues faced while processing of data generated from Remote sensing technologies. Wide range of applications as well as their preprocessing methods were examined.

14:50 – Anna Sozontova

Using Sentinel -1 SAR data for mapping vegetation area in central Kola peninsula. Discusses how some limitations of using Radar data.

15:10 – Benjamin Collette and Franz Bergmeier

Introduces Rankoshi Mountain Labs and its core aspects like Education, Technology and Incubator. It also introduces its blockchain technology implemented in their system for better data security.

15:30 – Yu Sugita

Detection of marine litters at and around the shore of outlying region of Shiretoko Peninsula in Hokkaido prefecture of Japan. It emphasizes the use of Remote sensing technology in effective spotting of litters in remote areas.