The 40th Asian Conference On Remote Sensing

ACRS 2019

October 14(Mon) ~ 18(Fri), 2019
DCC, Daejeon, Korea

40th ACRS 1980 - 2019

"Progress of Remote Sensing Technology for Smart Future"

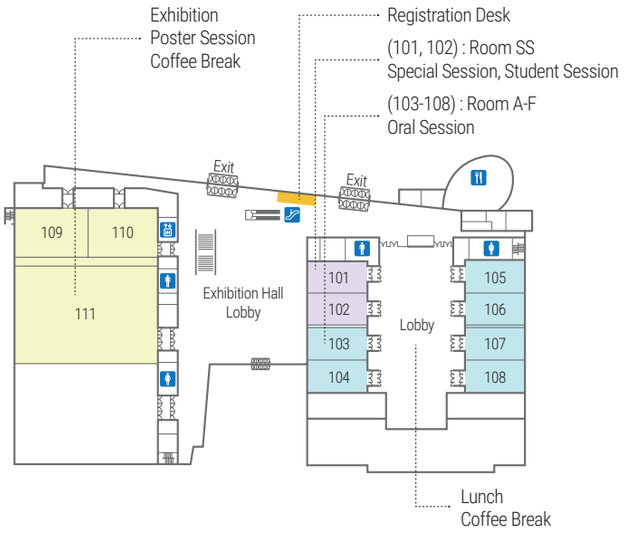
Organized by KSRS AARS 대전광역시 DAEJEON METROPOLITAN CITY

Supported by DIME KOFST KOREA TOURISM ORGANIZATION

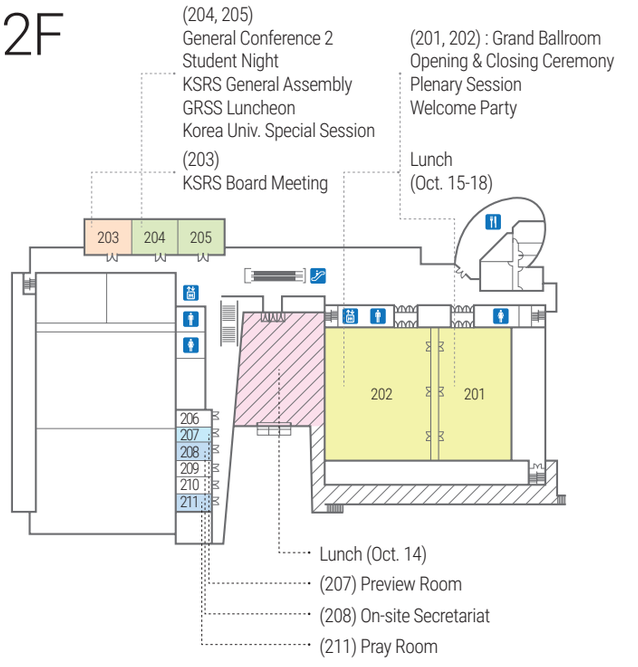
Sponsored by KARI JAXA ST Engineering

Floor Plan

1F



2F



Program at a Glance of ACRS2019

Date	October 14 (Monday)							October 15 (Tuesday)						
Time \ Room	Room A #103	Room B #104	Room C #105	Room D #106	Room E #107	Room F #108	Room SS #101+102	Room A #103	Room B #104	Room C #105	Room D #106	Room E #107	Room F #108	Room SS #101+102
08:30-09:00	Coffee Break							Coffee Break						
09:00-09:15	Registration							TuA1_1	TuB1_1	TuC1_1	TuD1_1	TuE1_1	TuF1_1	TuSS1
09:15-19:30								TuA1_2	TuB1_2	TuC1_2	TuD1_2	TuE1_2	TuF1_2	
09:30-09:45								TuA1_3	TuB1_3	TuC1_3	TuD1_3	TuE1_3	TuF1_3	
09:45-10:00								TuA1_4	TuB1_4	TuC1_4	TuD1_4	TuE1_4	TuF1_4	
10:00-10:15								TuA1_5	TuB1_5	TuC1_5	TuD1_5	TuE1_5	TuF1_5	
10:15-10:30	Opening Ceremony (#201, 202)								TuB1_6	TuC1_6		TuE1_6	TuF1_6	
10:30-10:45								Coffee Break						
10:45-11:00	Coffee Break													
11:00-11:15	Plenary 1 (#201, 202) Cheol-ho Lim (Korea Aerospace Research Institute, Korea)							TuA2_1	TuB2_1	TuC2_1	TuD2_1	TuE2_1	TuF2_1	TuSS2
11:15-11:30								TuA2_2	TuB2_2	TuC2_2	TuD2_2	TuE2_2	TuF2_2	
11:30-11:45	Plenary 2 (#201, 202) Christian Heipke (Hannover University, Germany)							TuA2_3	TuB2_3	TuC2_3	TuD2_3	TuE2_3	TuF2_3	
11:45-12:00								TuA2_4	TuB2_4	TuC2_4	TuD2_4	TuE2_4	TuF2_4	
12:00-12:15	Plenary 3 (#201, 202) Paolo Gamba (Pavia University, Italy)							TuA2_5	TuB2_5	TuC2_5	TuD2_5	TuE2_5	TuF2_5	
12:15-12:30									TuB2_6	TuC2_6	TuD2_6	TuE2_6	TuF2_6	
12:30-12:45	Lunch							Lunch / GRSS Luncheon (#204, 205)						WeSS2
12:45-13:00														
13:00-13:15														
13:15-13:30														
13:30-13:45	MoA1_1	MoB1_1	MoC1_1	MoD1_1	MoE1_1	MoF1_1	MoSS1	TuA3_1	TuB3_1	TuC3_1	TuD3_1	TuE3_1	TuF3_1	TuSS3
13:45-14:00	MoA1_2	MoB1_2	MoC1_2	MoD1_2	MoE1_2	MoF1_2		TuA3_2	TuB3_2	TuC3_2	TuD3_2	TuE3_2	TuF3_2	
14:00-14:15	MoA1_3	MoB1_3	MoC1_3	MoD1_3	MoE1_3	MoF1_3		TuA3_3	TuB3_3	TuC3_3	TuD3_3	TuE3_3	TuF3_3	
14:15-14:30	MoA1_4	MoB1_4	MoC1_4	MoD1_4	MoE1_4	MoF1_4		TuA3_4	TuB3_4	TuC3_4	TuD3_4	TuE3_4	TuF3_4	
14:30-14:45	MoA1_5	MoB1_5	MoC1_5	MoD1_5	MoE1_5	MoF1_5		TuA3_5	TuB3_5	TuC3_5	TuD3_5		TuF3_5	
14:45-15:00	MoA1_6	MoB1_6	MoC1_6		MoE1_6	MoF1_6		TuA3_6		TuC3_6			TuF3_6	
15:00-15:15	MoA1_7		MoC1_7		MoE1_7			Coffee Break						
15:15-15:30	Coffee Break													
15:30-15:45								Poster Session 1 (Exhibition Hall)						TuSS4
15:45-16:00	MoA2_1	MoB2_1	MoC2_1	MoD2_1	MoE2_1	MoF2_1	MoSS2							
16:00-16:15	MoA2_2	MoB2_2	MoC2_2	MoD2_2	MoE2_2	MoF2_2								
16:15-16:30	MoA2_3	MoB2_3	MoC2_3	MoD2_3	MoE2_3	MoF2_3								
16:30-16:45	MoA2_4	MoB2_4	MoC2_4	MoD2_4	MoE2_4	MoF2_4								
16:45-17:00	MoA2_5	MoB2_5	MoC2_5	MoD2_5	MoE2_5	MoF2_5								
17:00-17:15	MoA2_6	MoB2_6	MoC2_6	MoD2_6	MoE2_6	MoF2_6		AARS General Conference 1 (S.C. Hanok Village)						
17:15-17:30	MoA2_7			MoD2_7	MoE2_7									
17:30-18:00														
18:00-18:30	Welcome Party (#201, 202)													
18:30-														

Date	October 16 (Wednesday)							October 17 (Thursday)						
Time \ Room	Room A #103	Room B #104	Room C #105	Room D #106	Room E #107	Room F #108	Room SS #101+102	Room A #103	Room B #104	Room C #105	Room D #106	Room E #107	Room F #108	Room SS #101+102
08:30-09:00	Coffee Break							Coffee Break						
09:00-09:15	WeA1_1	WeB1_1	WeC1_1	WeD1_1	WeE1_1	WeF1_1	WEBCON (WeSS6)	ThA1_1	ThB1_1	ThC1_1	ThD1_1	ThE1_1	ThF1_1	ThSS1
09:15-19:30	WeA1_2	WeB1_2	WeC1_2	WeD1_2	WeE1_2	WeF1_2		ThA1_2	ThB1_2	ThC1_2	ThD1_2	ThE1_2	ThF1_2	
09:30-09:45	WeA1_3	WeB1_3	WeC1_3	WeD1_3	WeE1_3	WeF1_3		ThA1_3	ThB1_3	ThC1_3	ThD1_3	ThE1_3	ThF1_3	
09:45-10:00	WeA1_4	WeB1_4	WeC1_4	WeD1_4	WeE1_4	WeF1_4		ThA1_4	ThB1_4	ThC1_4	ThD1_4	ThE1_4	ThF1_4	
10:00-10:15	WeA1_5	WeB1_5	WeC1_5	WeD1_5	WeE1_5	WeF1_5		ThA1_5	ThB1_5	ThC1_5	ThD1_5	ThE1_5	ThF1_5	
10:15-10:30	WeA1_6	WeB1_6	WeC1_6		WeE1_6			ThA1_6	ThB1_6	ThC1_6	ThD1_6	ThE1_6	ThF1_6	
10:30-10:45	Coffee Break							Coffee Break						
10:45-11:00														
11:00-11:15	WeA2_1	WeB2_1	WeC2_1	WeD2_1	WeE2_1	WeF2_1	WeSS1	ThA2_1	ThB2_1	ThC2_1	ThD2_1	ThE2_1	ThF2_1	ThSS2
11:15-11:30	WeA2_2	WeB2_2	WeC2_2	WeD2_2	WeE2_2	WeF2_2		ThA2_2	ThB2_2	ThC2_2	ThD2_2	ThE2_2	ThF2_2	
11:30-11:45	WeA2_3	WeB2_3	WeC2_3	WeD2_3	WeE2_3	WeF2_3		ThA2_3	ThB2_3	ThC2_3	ThD2_3	ThE2_3	ThF2_3	
11:45-12:00	WeA2_4	WeB2_4	WeC2_4	WeD2_4	WeE2_4	WeF2_4		ThA2_4	ThB2_4	ThC2_4	ThD2_4	ThE2_4	ThF2_4	
12:00-12:15	WeA2_5	WeB2_5	WeC2_5	WeD2_5	WeE2_5	WeF2_5		ThA2_5	ThB2_5	ThC2_5	ThD2_5	ThE2_5	ThF2_5	
12:15-12:30	WeA2_6	WeB2_6		WeD2_6	WeE2_6	WeF2_6		ThA2_6	ThB2_6		ThD2_6	ThE2_6	ThF2_6	
12:30-12:45	Lunch						WeSS2		ThB2-7		ThD2-7			
12:45-13:00								Lunch / AARS General Conference 2 (#204, 205)						
13:00-13:15														
13:15-13:30														
13:30-13:45	WeA3_1	WeB3_1	WeC3_1	WeD3_1	WeE3_1		WeSS3	ThA3_1	ThB3_1	ThC3_1	ThD3_1	ThE3_1	ThF3_1	ThSS3
13:45-14:00	WeA3_2	WeB3_2	WeC3_2	WeD3_2	WeE3_2			ThA3_2	ThB3_2	ThC3_2	ThD3_2	ThE3_2	ThF3_2	
14:00-14:15	WeA3_3	WeB3_3	WeC3_3	WeD3_3	WeE3_3			ThA3_3	ThB3_3	ThC3_3	ThD3_3	ThE3_3	ThF3_3	
14:15-14:30	WeA3_4	WeB3_4	WeC3_4	WeD3_4	WeE3_4			ThA3_4	ThB3_4	ThC3_4	ThD3_4	ThE3_4	ThF3_4	
14:30-14:45	WeA3_5	WeB3_5		WeD3_5				ThA3_5	ThB3_5	ThC3_5	ThD3_5	ThE3_5	ThF3_5	
14:45-15:00	WeA3_6			WeD3_6				ThA3_6	ThB3_6	ThC3_6	ThD3_6	ThE3_6		
15:00-15:15	Coffee Break							ThA3_7	Coffee Break / KSRS Board Meeting (#203) 15:00-16:00					
15:15-15:30														
15:30-15:45	WeA4_1	WeB4_1	WeC4_1	WeD4_1	WeE4_1		WeSS4	Poster Session 2 (Exhibition Hall) / KSRS General Assembly (#204, 205) 16:00-17:00						ThSS4
15:45-16:00	WeA4_2	WeB4_2	WeC4_2	WeD4_2	WeE4_2									
16:00-16:15	WeA4_3	WeB4_3	WeC4_3	WeD4_3	WeE4_3									
16:15-16:30	WeA4_4	WeB4_4	WeC4_4	WeD4_4	WeE4_4									
16:30-16:45	WeA4_5	WeB4_5	WeC4_5	WeD4_5	WeE4_5									
16:45-17:00		WeB4_6			WeE4_6									
17:00-17:15														
17:15-17:30														
17:30-18:00														
18:00-18:30	Student Night (#204, 205)													
18:30-														

Date	October 18 (Friday)						
Time \ Room	Room A #103	Room B #104	Room C #105	Room D #106	Room E #107	Room F #108	Room SS #101+102
08:30-09:00	Coffee Break						
09:00-09:15	FrA1_1	FrB1_1	FrC1_1	FrD1_1	FrE1_1	FrF1_1	FrSS1
09:15-19:30	FrA1_2	FrB1_2	FrC1_2	FrD1_2	FrE1_2	FrF1_2	
09:30-09:45	FrA1_3	FrB1_3	FrC1_3	FrD1_3	FrE1_3	FrF1_3	
09:45-10:00	FrA1_4	FrB1_4	FrC1_4	FrD1_4	FrE1_4	FrF1_4	
10:00-10:15	FrA1_5	FrB1_5	FrC1_5	FrD1_5	FrE1_5	FrF1_5	
10:15-10:30			FrC1_6	FrD1_6		FrF1_6	
10:30-10:45	Plenary 4 (#201) Liang-Chien Chen (National Central University, China Taipei)						
10:45-11:00							
11:00-11:15	Plenary 5 (#201) Hiroaki Kuze (Chiba University, Japan)						
11:15-11:30							
11:30-11:45	Closing Ceremony (#201)						
11:45-12:00							
12:00-12:15							
12:15-12:30							
12:30-12:45	Lunch						
12:45-13:00							
13:00-13:15							
13:15-13:30							
13:30-13:45	Technical & Cultural Tour						
13:45-14:00							
14:00-14:15							
14:15-14:30							
14:30-14:45							
14:45-15:00							
15:00-15:15							
15:15-15:30							
15:30-15:45							
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16:00-16:15							
16:15-16:30							
16:30-16:45							
16:45-17:00							
17:00-17:15							
17:15-17:30							
17:30-18:00							
18:00-18:30							
18:30-							

Topic 1 *1. Remote Sensing Applications (Forestry / Environment / Agriculture / Disaster Management / Marine & Coastal / Hydrology and Water Resources / Climate Change / Urban and Regional Planning)*
MoA1, MoA2, MoB1, MoB2, MoC1, MoC2, MoD1, MoD2, TuA1, TuA2, TuA3,TuB1, TuB2, TuB3, TuC1, TuC2, TuD1, TuD2, TuD3, WeA1, WeA2, WeA3, WeA4, WeB1, WeB2, WeB3, WeB4, WeD1, WeD2, WeD3, WeD4, WeE1, WeE2, ThA1, ThA2, ThA3, ThB1, ThB2, ThB3, ThD1, ThD2, ThD3, FrA1, FrB1

Topic 2 *2. Photogrammetry and Mapping (Digital Photogrammetry)*
MoE1, MoE2, TuE1, TuE2

Topic 3 *3. GIS & GNSS (2D/3D/4D GIS Applications / Web GIS Applications / Mobile GIS Applications / GNSS Applications)*
MoF1, MoF2, TuF1, TuF2, TuF3, WeF1, WeF2, ThF1, ThF2, FrD1, FrF1

Topic 4 *4. New Sensors and Platforms (New satellite programs / UAV systems)*
TuE2, TuE3, ThF3

Topic 5 *5. Algorithms & Data Processing (Algorithms / Hyper-spectral data Processing / LIDAR Data Processing / UAV Data Processing / Data Fusion / Deep Learning for Remote Sensing Data)*
TuC3, WeC1, WeC2, WeC3, WeC4, ThC1, ThC2, ThC3, ThE1, ThE2, ThE3,ThF3, FrC1, FrE1, FrF1

Topic 6 *6. Special Issues (Convergence of New Technologies / 4th Industrial Revolution / Education for Sustainable Development)*
WeE3, WeE4, ThE1, ThF3, FrF1

Special and Student Sessions

MoSS1	Application of CAS 500-1/2 Image Utilization - 1
MoSS2	Application of CAS 500-1/2 Image Utilization - 2
TuSS1	Current Satellite Remote Sensing status and future opportunities in Asia - 1
TuSS2	Current Satellite Remote Sensing status and future opportunities in Asia - 2
TuSS3	JAXA Special Session on Sustainable Development using Japanese Satellites - 1
TuSS4	JAXA Special Session on Sustainable Development using Japanese Satellites - 2
WeSS1	KOMPSAT Satellite Imagery Commercial
WeSS2	Space for Women: Remote Sensing in Asia
WeSS3	Korea-China Forest Remote Sensing forum - 1
WeSS4	Korea-China Forest Remote Sensing forum - 2
WeSS5	White Elephant Session
WeSS6	WEBCON
WeST	Student Session
ThSS1	Interoperable Platform Using Earth Observation Data - 1
ThSS2	Interoperable Platform Using Earth Observation Data - 2
ThSS3	Research on analytical technique for satellite observation of Arctic sea ice - 1
ThSS4	Research on analytical technique for satellite observation of Arctic sea ice - 2
FrSS1	Geospatial Education and Outreach: Multi-level Education & Training

※ Korea University Special Session for H2020-EOPEN will be held on Oct. 16. (DCC 2F, #204)

ACRS2019 Web Proceedings

http://acrs2019.sigongji.com

The 40th Asian Conference on Remote Sensing

ACRS2019

14~18 October, 2019 / DCC, Daejeon, Korea

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This work was supported by the Korean Federation of Science and Technology Societies(KOFST) grant funded by the Korean government.

I. Welcome Messages

Opening Remark from the General Chair of the ACRS2019
Honorable Mr. Tae-jeong Heo, Mayor of Daejeon;
Honorable Dr. Cheol-ho Lim, President Korea Aerospace Research Institute (KARI);
Honorable Mr. Cheolkyu Choe, President of Daejeon International Marketing Enterprise (DIME);
Honorable Dr. Cheon Kim, AARS2019 Chair, honorary member of KSRS;
Honorable Dr. Myung-Hee Jo, Prof. of Kyungpook National Univ.; honorary general chair of ACRS2019;
Honorable Dr. Shunji Murai, Prof, of Tokyo Univ.; Chairman of Asian Association on Remote Sensing (AARS);
Honorable Dr. Kohei Cho, Prof. of Tokai Univ.; General Secretary of AARS;
Honorable Dr. Paolo Gamba, President of Geoscience and Remote Sensing Society (GRSS);
Honorable Dr. Christian Heipke, President of Int. Soc. for Photogrammetry and RS (ISPRS);
Honorable Local Organizing and International Committee of the ACRS2019;
Honorable Guests, Ladies and Gentlemen.

On behalf of the Local Organizing Committee and Korean Society of Remote Sensing, I am honored to announce opening the 40th Asian Conference on Remote Sensing, ACRS2019, here in Daejeon in South Korea. We sincerely welcome all of the participants and delegates to the Conference.

Asian Association on Remote Sensing (AARS) becomes one of the largest organizations in its field in Asia. Over 29 member countries of AARS have hosted the ACRS every year since 1979. This year is particularly meaningful to us as celebrating the 40th journey of AARS.

We, Korean Society of Remote Sensing (KSRS) was founded in 1984, and we have accompanied with the academy journey of AARS by contributing to the advanced research on remote sensing and its related technology. On the basis of our role, KSRS keeps encouraging researchers to cooperate several stockholders via academic conferences and publications. KSRS will always support ACRS.

"Progress of Remote Sensing Technology for Smart Future" is a timely theme of ACRS2019. These days, we have been experiencing uncertainties and imbalances in a changing world and asked to secure our global society for future as well as current generation. We are asked to consider more comprehensive information for better decision-making in solving our facing challenges and problems such as climate change, environmental disasters, regional conflicts etc.

The remote sensing technology is a new and high technology and should contribute to solving the challenges and ensure sustainable development of our common society. Big data, Internet of Things (IOT), 4th Industrial Evolution and Artificial Intelligence (AI) have been developed by humankind and contribute to our decision-making for economic development. But these new technologies sometimes threaten the identity and dignity of our humankind, when they are used just for own purposes and interests of specific groups.

For our better future, it will be necessary for our experts from diverse fields to acknowledge differences among us and to gather wisdom for common development through space and time sharing. The ability to share spatio-temporal information based on remote sensing technology will lead us to the sustainable development of our global society. ACRS has offered us to share our knowledge on remote sensing technology and spatio-temporal information for ensuring our future prosperity. The intergenerational sharing of our experience will be also important for our common future. We are in the same space together in Daejeon for sharing our time experienced by our individuals. I hope ACRS 2019 can be a space where scientific innovation and social development relevant to remote sensing are pursued together through sharing our knowledge and experience. Please actively share your precious knowledge and experience with your beloved people in ACRS.

Through 78 sessions, and 651 presentations, I believe that ACRS2019 will offer us academic friendship and sharing-ship of our space and time through our active participation. I deeply appreciate The ACRS 2019 Organizing Committee and wish all participants enjoy your space and time in Daejeon.

Woo-Kyun Lee
General Chair of ACRS2019 Organizing Committee
President of KSRS
Professor of Korea University, Korea

Dear International Colleagues,

On behalf of the Asian Association on Remote Sensing (AARS), I would like to welcome you all to the 40th Asian Conference on Remote Sensing (ACRS) to be held from 14th to 18th October 2019 at the Daejeon Convention Center (DCC), Daejeon, Korea. The 1st ACRS was organized in Bangkok, Thailand in 1980. After 40 years, ACRS has become one of the largest remote sensing conferences in Asia. This year, the main theme of the conference is "Progress of remote sensing technology for smart future". The technology advancement in the field of remote sensing is significant. Small satellites, UAVs, cloud computing and AI are expanding the possibility of remote sensing. Various topics including data processing, GIS, GNSS, and remote sensing on many application fields will be discussed at the conference.

Actually, this is the third time for us to organize ACRS in Korea, the first time in 1986, the second time in 2003. As we all know, Korea is one of the most active countries in remote sensing in Asia and is the long-time contributor to ACRS/AARS. This time we are happy to co-organize the 40th ACRS with the Korea Society of Remote Sensing (KSRS). Two years ago, Prof. Choen Kim of Kookmin University kindly and strongly proposed to organize 40th ACRS in Daejeon, Korea. Since his plan was so well prepared including the financial support from Daejeon City, we all agreed to organize the 40th ACRS in Daejeon. Since early this year, I have exchanged so many e-mails with my friend Prof. Taejung Kim of Inha University on the ACRS preparation. Two Months ago, I have visited Daejeon and had a good discussion with the Local organizing Committee (LOC) on the preparation for ACRS2019. I was quite impressed with the good facility of DCC and the excellent team work of LOC leaded by KSRS President Prof. Woo-Kyun Lee. I have no doubt on the success of the conference. Let us get together at ACRS2019 in Daejeon, Korea and cerebrate our 40 years anniversary of ACRS!

Thank you.

Kohei Cho
General Secretary of AARS
Professor of Tokai University, Japan

Hello, Everyone! I am Professor Myung-Hee Jo of Department of Aero-Satellite Geo-Informatics Engineering and Director of Global Land Satellite Information Center of Kyungpook National University, Korea.

Dear all participants of the 40th ACRS conference and AARS members, we are very pleased and sincerely welcome to meet you at Daejeon Convention Center in Korea.

In particular, as a KSRS charter member and the first Ph.D. in the field of remote sensing in Korea, in addtion, as the first-generation researcher of the Geo-spatial Image Information area who established the Korean Association of Geographic Information Studies (KAGIS), I am very honored and it's so meaningful that the 40th ACRS conference is held in Korea.

As you know, South Korea is a small and divided country, and the earth observation satellites with the high-resolution KOMPSAT with 55cm are the most efficient equipment to acquire various information of interesting area. This causes the rapid development of the spatial image information technology in Korea based on advanced IT technology.

Furthermore, in recent era of the 4th Industrial Revolution Technology, the field of Photo-grammetric image and Geo-Science Information technologies are becoming more popular by integrating with Big data, AI, Mobile, IoT, Cloud computing, UAV and Drone. These technologies are getting essential for overcoming the climate changes not only encouraging human happiness and peace but also industrial and economic development.

For the past 40 years, remote sensing technology has advanced so significantly. In 1983, for my master course study, I used the Landsat MSS 80m resolution image and doctor thesis in 1990, the Landsat TM 30m image was applied. And also when I worked as UNCRD researcher in 1992, I used the 50m MOS image of Japan for LAOS shifting cultivation studies. After 30 years, now we can use sub meter high quality satellite image.

Until the present day, as the pioneer and specialist of education, research, business, and national policy in the field of remote sensing and spatial information, I established the three university departments to create the jobs for the talented young researchers, and actively worked as a committee member of the Korean National Science and Technology Committee on Space.

Futhermore korean government has strong interest about satellite, so we have many national based high resolution KOMPSAT series and geostationary GEO-KOMPSAT.

As a result, Korea is developing the next-generation medium-sized satellite series with the weight 500kg, and will launch the earth observation satellite with the high-resolution 50cm in 2020. In addition, the number of national satellite centers are established in Korea by all ministries related to national land management such as meteorology, ocean, environment, agriculture, water resource, forest, disaster, security and national defense.

These satellite centers will provide and service the high-quality earth observation information to not only Korean people but also foreign people all over the world.

Anyway, during this ACRS conference, we hope that you will have meaningful opportunities by sharing the research results with the people from the different countries and institutions.

Actually in recent, we had the serious damages by the typhoons, but from last week it is changed to very mild weather. In general, Korea is a so beautiful country with the different four seasons. The present autumn in Korea is famous for maple and red leaves, so you can see the plenty of autumn colored trees here.

Please enjoy Korean culture such as K-pops and Korean foods, and beautiful Korean weather. I also hope that you will make good memories and lovely friendship with each other participants during this ACRS conference.

Thank you very much.

Regards,

Myung-Hee Jo
Honorary General Chair of ACRS2019 Organizing Committee
Professor of Kyungpook National University, Korea

II. Committees

• Local Organizing Committee

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Tokyo University
(Japan)

III. Technical Program

1. Plenary Session

• Plenary Session 1

[MoPL-1] October 14(Mon), 11:00 ~ 11:30 / DCC 2F, Grand Ballroom

Earth Observation in Korea

Cheol-ho Lim *(Korea Aerospace Research Institute, Korea)*

• Biography

Dr. LIM is currently President of Korea Aerospace Research Institute (KARI) contributed by the Ministry of Science & ICT(MSIT), appointed January 2018. After taking the position, he managed the successful launching of Test Launch Vehicle (TLV) of Korea Space Launch Vehicle II (KSLV-2 or NURI) and Geostationary KOMPSAT-2A (GK-2A) last year. From 2009 to 2013, he acted as Vice President and led a number of development programs from launch vehicle NARO to Arirang satellite, Korean helicopter, etc.. Before that, between 2002 and 2009, he served as the Director of Smart UAV Development Center to develop smart unmanned aerial vehicle systems as one of the key 21st Century R&D Programs promoted by the Ministry of Science & Technology. He led the development program of tilt-rotor type unmanned aircraft with autonomous flight system and collision avoidance system, which involved hundreds of engineers from KARI, Universities and industries.

He joined KARI in 1994 after working as a leader of Computer-Aided Engineering (CAE) Research Group at Systems Engineering Research Institute under Korea Institute of Science & Technology (SERI/KIST) for eight years, where he conducted a research on CAE engineering and computer simulation applied to aerospace and automobile engineering.

He has also played an active role in various community; as President of Korean Society for Industrial & Applied Mathematics (KSIAM) in 2016, as President of Korean Society of Aeronautical & Space Sciences (KSAS) in 2011, as Pesident of Korean Society of Aviation & Aeronautics (KSAA) in 2010, as President of Korea Unmanned Vehicle Systems Association (KUVSA) in 2009, and as a committee member of Aviation and Railway Accident Investigation Board of the Ministry of Land, Infrastructure, and Transport, from 2002 to 2012. He has teaching experience as well, working as a part-time professor for the Department of Aerospace Engineering at Inha University and Gyungsang National University, and for the Department of Mechanical Engineering at Chungnam National University and Incheon University. from 1979 to 1981, he was a teaching assistant for the Department of Mechanical Engineering at Ajou University.

He holds Docteur d'Ingenieur in Mechanical Engineering from the Universite de Toulouse III (Universite de Paul Sabatier) in Toulouse, France (1986), and also the DEA & T.A. as graduate diploma in Aerospace Engineering from the Ecole Nationale Superieur de l'Espace et de l'Aeronautique (Sup'Aero) in Toulouse, France. He obtained Master of Science (1977) and Bachelor of Science (1975) degree in Aerospace Engineering from Seoul National University.

• Abstract

Earth Observation in Korea

Satellite is eye in the sky and data from satellites are absolutely necessary to monitor change detection occurring in Korea. The KARI (Korea Aerospace Research Institute), founded in 1989, has successfully realized the nation's space programs and carried out a key role in satellite development. From 1999, KARI has developed and launched low earth orbit satellites, called KOMPSAT (Korea Multi-Purpose SATellite), and geostationary satellites. The COMS (Communications, Ocean and Meteorological Satellite) was launched in 2010 and serviced value added data through the KMA (Korea Meteorological Administration) and the KIOST (Korea Institute of Ocean Science and Technology), and various weather data and marine plankton distribution data. The GK (Geostationary KOMPSAT)-2A launched in 2018 will provide more accurate weather data very quickly. In addition, GK-2B, which will be launched in early 2020 and equipped with ocean color and environmental sensors.

• Plenary Session 2

[MoPL-2] October 14(Mon), 11:30 ~ 12:00 / DCC 2F, Grand Ballroom

UAV technology for a smart future

Christian Heipke *(Hannover University, Germany)*

• Biography

Christian Heipke was born in Lüneburg, Germany in 1961. From 1980 to 1986 he studied Geodetic Sciences and Surveying at the universities of Hannover, Sydney, and Munich. He graduated from the Technical University Munich and subsequently joined the Industrieanlagen-Betriebsgesellschaft (IABG), Ottobrunn as a Research Scientist. In 1990 he became Research Fellow at the Chair for Photogrammetry and Remote Sensing, Technical University Munich. In the same year he received a Ph.D. degree (Dr.-Ing.) and in 1994 the venia legendi (Dr.-Ing. habil.), both from TU Munich.

From 1991-1994 he led the research group 'Digital Photogram- metry' at the same institution. Throughout 1995 he was a visiting professor of photogrammetry at The Ohio State University, Columbus, OH. He returned to TU Munich at the beginning of 1996 were he headed the research group 'Image matching and object
extraction'. He was awarded another visiting professorship at Ecole Polytechnique Fédérale de Lausanne, Switzerland in spring 1998.

In October 1998 he was appointed Head of the Institute of Photogrammetry and GeoInformation, Leibniz Universität Hannover, where he currently leads a group of about 25 researchers, most of them funded through grants from national and international science organisations and from industry. From 2009-2011 he served as Dean of the Faculty of Civil Engineering and Geodetic Science. In 2012 he was on sabbatical leave and worked at the IGN-MATIS research laboratory in Paris for six months.

His professional interests comprise all aspects of digital photogrammetry & remote sensing, image understanding and their connection to GIS and computer vision. His two areas of special expertise are automatic sensor orientation and object extraction from images.

Christian Heipke has successfully supervised about 35 PhD theses and has about 400 scientific publications to his name, some 90 of which appeared in peer reviewed international journals. He has acted as guest editor of major international journals in photogrammetry and remote sensing, and he is on the editorial board of various of these journals. He has organized and co-organized numerous international scientific meetings in the fields of photogrammetry, remote sensing, GIS and computer vision, in particular the biennial ISPRS Hannover Workshop on High Resolution Earth Imaging for Geospatial Information (since 1999). He has chaired Working Groups of the International Society for Photogrammetry and Remote Sensing (ISPRS) for 16 years and was vice- president of EuroSDR (European Spatial Data Research, formerly known as OEEPE) from 2004-2009, in which he was responsible for research. From 2011-2014 he was chair of the German Geodetic Commission (DGK), from 2012-2016 ISPRS Secretary General. Currently he serves as ISPRS President.

• Abstract

Unmanned aerial vehicles (UAV) have been given major attention in many areas of applications. Their most intriguing characteristic is that using UAV one can reach just about any point in the air to then carry out data collection. In particular, images can be taken from arbitrary positions, which is why UAVs equipped with cameras are sometimes called the "third eye in the sky". UAV technology has seem major leaps in development, which have led to light weight and affordable hardware systems, autonomous navigation, high speed and high band width data acquisition and processing, but also to some legal restrictions.

UAVs are also increasingly employed in photogrammetry and remote sensing. Note, that in this talk the term "remote sensing" is used rather loosely to include any sensing from a distance. Thus, data acquisition from the ground and from the air are included, as long as a physical contact is not necessary.

"Smart" solutions, for instance for cities, but also in a more general sense, are being advertised in a lot of areas, too. In this context "smart" includes

- ubiquitous networked sensing from any position (space, air, ground),
- continuous operation (24 hours a day, 7 days a week),
- accurate, reliable, safe (high integrity) processing,
- automated / autonomous monitoring (and potentially action) in real-time,
- scalable solutions.

Rather than giving a general technology overview, this talk will concentrate on one example, namely pedestrian detection, tracking and re-identification. We will describe the methods and algorithms employed as well as their general nature which makes it possible to use them in other applications as well. Using this example, we will thus show the potential of imaging from UAV, i.e. arbitrary positions, for smart solutions needed in the future.

• Plenary Session 3

[MoPL-3] October 14(Mon), 12:00 ~ 12:30 / DCC 2F, Grand Ballroom

Urban remote sensing: what is our future?

Paolo Gamba *(Pavia University, Italy)*

• Biography

Paolo Gamba is currently Full Professor of Telecommunications at the University of Pavia, Italy. He received the Laurea degree in Electronic Engineering "cum laude" from the University of Pavia, Italy, in 1989, and the Ph.D. degree in Electronic Engineering from the same University in 1993. He is a Fellow of IEEE, and from 2009 to 2013 he has served as Editor-in-Chief of the IEEE Geoscience and Remote Sensing Letters. He has been member of the AdCom and Chapter Committee Chair for the IEEE Geoscience and Remote Sensing Society from 2014 to 2016, Latin American activity Liaison in the same period, has served in 2016 as Vice President for Professional Activities, Executive Vice President, and is currently President of the same Society.

He has been the organizer and Technical Chair of the biennial GRSS/ISPRS Joint Workshops on "Remote Sensing and Data Fusion over Urban Areas" since 2001 until 2015. He also served as Technical Co-Chair of the 2010 and 2015 IEEE Geoscience and Remote Sensing Symposium, respectively in Honolulu, Hawaii, and Milan, Italy, and will be Technical Co-Chair of IGARSS 2020 in Waikaloa, Hawaii.

He has been Chair of Technical Committee 7 "Pattern Recognition in Remote Sensing" of the International Association for Pattern Recognition (IAPR) from October 2002 to October 2004 and Chair of the Data Fusion Committee of the IEEE Geoscience and Remote Sensing Society from October 2005 to May 2009.

He has been the Guest Editor of special issues of IEEE Transactions on Geoscience and Remote Sensing, IEEE Journal of Selected Topics in Earth Observation and Applied Remote Sensing, ISPRS Journal of Photogrammetry and Remote Sensing, International Journal of Information Fusion, Journal of Applied Remote Sensing, and Pattern Recognition Letters on the topics of Urban Remote Sensing, Remote Sensing for Disaster Management, Pattern Recognition in Remote Sensing Applications, Data Fusion, and Hyperspectral Urban Remote Sensing.

He has been invited to give keynote lectures and tutorials in several occasions about urban remote sensing, data fusion, EO data and risk management. He published nearly 160 papers in international peer-review journals and presented 300 research works in workshops and conferences.

Research Interests

a) Design of efficient algorithms to analyse EO data and extract feature to characterize urban areas and in general human settlements at multiple spatial scales and spectral wavelengths.

b) Design of data fusion techniques to exploit information coming from multiple EO and in situ data sources for environmental risk models at local, regional and global scale.
   - feature extraction, selection and combination procedures to evaluate spectral, spatial and temporal characteristics of each available data source for their comparison (e.g. change detection) or synergetic use (e.g. multivariate regression);
   - fusion of features by means of algorithms able to reconcile multiple features from both homogeneous and heterogeneous data sources (e.g. 2D/3D, vector and raster, …) and/or different scales via inference or aggregation schemes.

c) Development of novel tools to extract quantitative parameters from regional and continental remotely sensed data and to link the extracted information to risk and environmental models.
   - classification, mapping and geospatial data fusion procedures for the retrieval of parameters and information layers essential to understand the above mentioned processes.

Bibliometry		
	Researcher ID	Scopus
Number of papers cited by others	234	402
Total number of citations	4345	6190
h-index	35	40

• Abstract

Earth observation is key to understand the interactions between the humankind and the environment, and cities are the locations where this interaction is stronger. Therefore, the analysis of data collected by multiple sensors on board of satellites is moving from more traditional urban extent mapping to intra-urban change detection, and from land cover mapping to biophysical variables characterization. In turn, this highlights the possibility for urban remote sensing to provide a more and more useful characterization of urban areas, and open a glimpse to our future, helping to monitor threats to human health, such as vector borne diseases, urban heat waves and so on.

• Plenary Session 4

[FiPL-1] October 18(Fri), 10:30 ~ 11:00 / DCC 2F, Grand Ballroom

Quality Assurance for Land Monitoring Projects: A Cooperative Network

Liang-Chien Chen *(National Central University, China Taipei)*

• Biography

Liang-Chien Chen received a bachelor degree and a master degree from Department of Civil Engineering of National Cheng-Kung University (NCKU), Taiwan in 1972 and 1974, respectively. He earned a Ph.D. degree from Department of Civil Engineering, University of Illinois, Urbana, in 1985.
He joined the institute of Photogrammetry, NCKU, from 1985 to 1986. He then moved to the Center for Space and Remote Sensing Research (CRSRSR) of National Central University (NCU), Taiwan, as an associate professor during 1986-1993 and a full professor ever since 1993. He has been honored with a Distinguished Professor of NCU since 2006. He had been appointed the director of CSRSR two times, during 1995~1998 and 2010 up to 2013. He was also in charge of the satellite ground receiving station, which is an important component of the geoinformation infrastructure in Taiwan. His research activities are in digital photogranmetry, geometrical data processing for remotely sensed data, lidar processing, feature extraction, and three-dimensional object reconstruction.
Dr. Chen had been the President of the Chinese Taipei Society of Photogrammetry and Remote Sensing from 2010 to 2014. He joins a number of editorial boards of remote sensing and photogrammetry related journals.

• Abstract

Quality Assurance for Land Monitoring Projects: A Cooperative Network
Land monitoring is an indispensable work for both hazard mitigation and land management. Severe weather as caused by climate change results in increasing damages especially for those areas with dense population. On the other hand, quick landuse changes as well as urbanization make the dynamic monitoring necessary. Since the information for land monitoring is crucial, some key factors should be taken into account in the establishment of the information system. The factors, at least, include quality, timeliness, three dimensionality, and completeness with details. Among others, quality is the focus in this presentation that requires (1) sound specification, (2) solid work team, (3) optimal operation procedure, and (4) independent inspection and acceptance check.

Five examples covering entire Taiwan are summarized to demonstrate project quality assurance under solid cooperative networks that comprise governmental agencies, private sectors, institutions, and CSPRS. Governmental agencies set up the budget, specifications, and time frame along with forming a supervisory board. Private sectors are responsible for data production. Institutions and CSPRS inspect the production procedure and keep close tabs on the acceptance check.

The first example established DEM derived from airborne Lidar point clouds with 1m resolution from 2010 to 2015. To cope with fast terrain changes, the DEM is being updated and will be finished in 2020. NCKU has been in charge of the inspection and final acceptance check that met the standard of ISO2859.1-1999, AQL=1.5. The second example is a self-developed platform for monitoring land deformation using InSAR by CECI. With respect to GPS measurements, the accuracy check gives promising results both on geodetic and engineering scales. The third example describes the quality assurance, as inspected by CSPRS, for the generation of base map and laduse survey with 1/5,000 scale. The independent field check followed AQL=6.5 sampling standard. The fourth example, as performed by NCU, demonstrates the monitoring for illegal developments using satellite images bimonthly. By integrating supplementary data, an enforcement system was built for land management. It is so successful that the system has become a routine operation tool to crack down illegal land developments in Taiwan. The final example illustrates the procedure for the reconstruction of 4.8 million building models by CECI. The quality was also examined by CSPRS.

The five reported cases provide following observations. Academic institutions can also take the social responsibility by joining geoinformation projects to assure quality. CSPRS plays an important role in the inspection and acceptance check for geoinformation infrastructure. Private sectors in Taiwan are well equipped, mature, and capable to deliver quality products for sophisticated projects. It is believed that the three parties are willing and ready to collaborate with Asian counterparts.

• Plenary Session 5

[FiPL-2] October 18(Fri), 11:00 ~ 11:30 / DCC 2F, Grand Ballroom

Role of remote sensing toward a better future of our environment

Hiroaki Kuze *(Chiba University, Japan)*

• Biography

Hiroaki Kuze is professor and director of Center for Environmental Remote Sensing (CEReS), Chiba University, Japan. His major research field is the optical remote sensing of the atmosphere.
He finished the graduate school of the University of Tokyo in 1982, obtaining the Ph.D degree in physics in the field of quantum electronics. After working as a post-doctoral researcher for the Institute for Physical and Chemical Research (RIKEN), in 1984 he became a research assistant and in 1986 an associate professor in the physics department, faculty of liberal arts, Shizuoka University. During 1987-1988, he stayed at the Institute for Quantum Optics, Max-Planck Institute in West Germany as a visiting scientist. From 1995 to 2004, he worked as an associate professor of CEReS, and in 2004 he became a full professor. Between 2014 and 2016, he was the president of the Remote Sensing Society of Japan (RSSJ). Between 2010 and 2014, as well as from 2018 to the present, he serves as the director of CEReS.

• Abstract

Since the launch of Landsat-1 in 1972, the satellite observation of the Earth's surface and the atmosphere has made considerable progress.
Especially, satellite sensors such as MODIS, SPOT, and TRMM, for example, were epoch-making in that they started providing multi-band and high spatial-resolution data as well as the cross-sectional profile of liquid water in the atmosphere. Also, the progress of synthetic aperture radar (SAR) sensors have been noticeable because of their capability of observing the Earth both daytime and nighttime regardless of the cloud existence. The research community has been significantly profited from such satellite data for studying and understanding many aspects of our environment. Recently, however, with the exacerbation of climate change effects, it is required for all of us to act promptly to increase the preparedness against the possible outcomes of global warming in many different aspects, from sea-level rise to agricultural production. In this plenary talk, it will be discussed how we can make a concerted effort to enhance the role of remote sensing for realizing a more sustainable environment toward a better future.

2. Oral Session

• Guideline for Oral Presentation

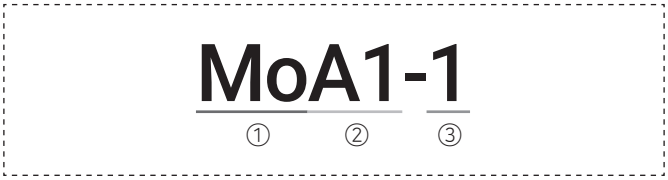
[Guideline for Session Chairs]

For each oral session, one chair or two co-chairs are assigned. When two co-chairs are assigned, please discuss how to share the session before the session starts.

As a chair or co-chairs, you are responsible to check for the presence of all presenters. When there is a no-show presentation within the session, please **DO NOT** proceed to the next presentation immediately but please **DO** wait for 15 minutes so that the follow-on presentations will start at the scheduled time.

An evaluation sheet for oral presentations will be distributed to each chair/co-chair. Please identify no-show presentations in the sheet. Also, **check for presenters' age and gender** and fill this information in the sheet. Evaluate all presentations and mark according to the Evaluation sheet. Please understand that your evaluation is very important for selecting various ACRS awards.

• How to understand the Presentation Identification Letter



① Letter assigned in Day of presentation

Mo	Tu	We	Th	Fi
October 14 (Monday)	October 15 (Tuesday)	October 16 (Wednesday)	October 17 (Thursday)	October 18 (Friday)

② Letter assigned to each room

A	B	C	D	E	F
Room #103	Room #104	Room #105	Room #106	Room #107	Room #108

③ Letter assigned in order of session and presentation

[Preparation guideline]

Each oral presentation is 15 Minutes including Q&A. Please try to keep the given amount of time for all the speakers could finish the session right on time.

- The presentation material should be either MS Power-Point or PDF files. (PPTX files are also acceptable.)
- All presenters are required to use the arranged computer in the session room.
- The file name of the presentation should begin with the program code, followed by '_oral'. File extensions should be of the usual self-describing type:
  - MoA1-1_oral.ppt (PowerPoint)
  - MoA1-1_oral.pdf (Portable Document Format)

[Before the session]

- Please visit the preview room to check your file compatibility in a session computer.
- After checking the compatibility, please upload your file in your session computer before your presentation.
- You should arrive in the session room BEFORE the beginning of session, and report to the session chairperson. Please bring your name tag or prepare a short biography for smooth introduction by session chair.

[During the session]

- The session is modulated by 1(one) or 2(two) chairperson(s). The chairperson(s) will evaluate your presentation for selecting various ACRS awards. (*Selected presenters will be awarded at the closing ceremony on October 18 (Friday)).

October 14 (Monday) / 13:30-15:15

Room A

Session Title	[MoA1] Remote Sensing of Forestry 1
Session Chairs	Prof. Kai-Yi Huang *(National Chung-Hsing University, China Taipei)* Dr. ChulHee Lim *(Korea University, Korea)*
Date	October 14 (Monday)
Time	13:30-15:15

MoA1-1 [13:30-13:45]
Assessment of shadow index using ray tracing based on a voxel model on various forest structures
Takumi Fujiwara and Wataru Takeuchi
The University of Tokyo, Japan

MoA1-2 [13:45-14:00]
Estimation of leaf area index from UAV multispectral indices and machine learning models
Asniyani Nur Haidar Abdullah, Farrah Melissa Muharam, Zed Diyana Zulkafli, Khairudin Nurulhuda, Muhamad Faiz Che Hashim, Siti Najja Mohd Zad and Mohd Razi Ismail
Universiti Putra Malaysia, Malaysia

MoA1-3 [14:00-14:15]
Extrapolating the spatial distribution of Taiwan red cypress reversely from "TERRAIN-SHELTERBELT" protecting Taiwan fir
Bao-Hua Shao, Chen-I Hsu, Chin-Jou Hsu, Ching Chuang, Nan-Chang Lo and Kai-Yi Huang
National Chung-Hsing University, China Taipei

MoA1-4 [14:15-14:30]
Pasture biomass estimation using remote sensing technology
Batbileg Bayaraa[1], Akira Hirano[2], Myagmartseren Purevtseren3, Battsengel Vandansambuu[3] and Byambasuren Damdin[1]
[1]Mongolian University of Life Sciences (MULS), Mongolia, [2]Japan International Research Center for Agricultural Sciences (JIRCAS), Japan, [3]National University of Mongolia, Mongolia

MoA1-5 [14:30-14:45]
Mapping of forest cover extent and change in the Philippines using decision tree classification on ALOS-1/2 PALSAR-1/2 mosaic data
Mari Trix Estomata and Klaus Schmitt
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Philippines

MoA1-6 [14:45-15:00]
Quantifying impact of deforestation using multi-satellite and multi-spatial model in the North Korea
ChulHee Lim[1], Hyun-Ah Choi[1,3], Francesco Vuolo[2], Hyun-Woo Jo[1], Sujong Lee[1], Sle-Gee Lee[1] and Woo-Kyun Lee[1]
[1]Korea University, Korea, [2]University of Natural Resources, Life Sciences, Austria, [3]Hanns Seidel Foundation Korea Office, Korea

MoA1-7 [15:00-15:15]
Complementary use of airborne LiDAR and terrestrial laser scanner to assess above ground biomass/carbon in ayer hitam tropical rain forest
Cora Jane C. Lawas[1], Yousif Ali Hussin[2] and Evert Henk Kloosterman[2]
[1]Central Visayas Studies Center-University of the Philippines Cebu, Philippines, [2]University of Twente, Netherlands

Room B

Session Title	[MoB1] Remote Sensing of Environment 1
Session Chair	Dr. Michelle Japitana *(Caraga State University, Philippines)*
Date	October 14 (Monday)
Time	13:30-15:00

MoB1-1 [13:30-13:45]
Application of AIRS sounding products for trend analysis of temperature, water vapor, ozone, methane and carbon-monoxide over India
Pooja Jindal[1], Pradeep Kumar Thapliyal[2] and Munn Vinayak shukla[2]
[1]Indian Institute of Remote Sensing, India, [2]Space Application Centre, India

MoB1-2 [13:45-14:00]
Assessment of population exposure to estimated PM10 concentrations in Malaysia in 2000, 2008 and 2013
Ameerah Su'ad Abdul Shakor, Mohamad Iqbal Mazeli and Muhammad Alfatih Pahrol
Ministry of Health Malaysia, Malaysia

MoB1-3 [14:00-14:15]
Evaluation of monthly water consumption and land surface temperature derived using landsat 8 and MODIS data
R. Enriquez[1], M. Rodriguez[2], A. Blanco[1], C. Cruz[1], I. Estacio[1] and L.R. Depositario[3]
[1]University of the Philippines Diliman, Philippines, [2]Ateneo de Zamboanga University, Philippines, [3]Zamboanga City Water District, Philippines

MoB1-4 [14:15-14:30]
Identifying possible planning interventions to control the increase of land surface temperature
K.G.D. Lakmali, G.M.W.L. Gunawardena and Lakshika Meetiyagoda
University of Moratuwa, Sri Lanka

MoB1-5 [14:30-14:45]
Identifying Habitats of red panda (*Ailurus f. Fulgens*) in Sakteng wildlife sanctuary, Bhutan in Maxent using climate change scenarios
Sonam Tobgay and Natapon Mahavik
Naresuan Univ., Thailand

MoB1-6 [14:45-15:00]
Assessment of air quality using portable sensors in Tokyo metro stations and underground mall
Deepanshu Agarwal and Wataru Takeuchi
The University of Tokyo, Japan

Room C

Session Title	[MoC1] Remote Sensing for Agriculture 1
Session Chairs	Dr. Norsida Man *(Universiti Putra Malaysia, Malaysia)* Dr. Etsuko Nakazono *(The University of Tokyo, Japan)*
Date	October 14 (Monday)
Time	13:30-15:15

MoC1-1 [13:30-13:45]
Mapping paddy field in east Japan using Sentinel-1 time series assisted by sentinel-2
Shimpei Inoue[1], Chinatsu Yonezawa[2] and Akihiko Ito[1]
[1]National Institute for Environmental Studies, Japan, [2]Tohoku University, Japan

MoC1-2 [13:45-14:00]
Application of remote sensing and crop modeling for rice in Andhra Pradesh, India
Emma Quicho[1], Tri Setiyono[1], Aileen Maunahan[1], Sushree Satapathy[2], Ponnurangam Ganesan[2], Kranthi Kumar[2], Ramohan Reddy[2], Gene Romuga[1], Cornelia Garcia[1], Arnel Rala[1], Sunil Medida[3], Prasuna Podila[3], Prabhu Prasadini[3], Luca Gatti[4] and Francesco Holecz[4]
[1]International Rice Research Institute (IRRI), Philippines, [2]International Rice Research Institute, IRRI-AP Office, India, [3]Acharya N.G. Ranga Agricultural University (ANGRAU), India, [4]sarmap, Switzerland

MoC1-3 [14:00-14:15]
Extraction of onion fields infected by anthracnose-twister disease in selected municipalities of Nueva Ecija using UAV imageries and object based image analysis
Ronaldo T. Alberto, Ariel R. Biagtan, Miguelito F. Isip and Jeremy Cariño E. Rivera
Central Luzon State University, Philippines

MoC1-4 [14:15-14:30]
Mapping rice paddy cropping patterns and drought impacts in Uganda using multi-temporal MODIS images from 2001 to 2018
Miwa Aoyama and Wataru Takeuchi
The University of Tokyo, Japan

MoC1-5 [14:30-14:45]
Assessment of Leaf Chlorophyll Content, Leaf Area Index and Yield of Corn (*Zea mays* L.) Using Low Altitude Remote Sensing
Rizza Lorena P. Espenido, Ronaldo B. Saludes, Moises A. Dorado and Pompe C. Sta. Cruz
University of the Philippines, Philippines

MoC1-6 [14:45-15:00]
Detection and differentiation of selected rice diseases using hyperspectral data
Jean Rochielle F. Mirandilla[1,2] and Enrico C. Paringit[1]
[1]University of the Philippines, Philippines, [2]Philippine Rice Research Institute, Philippines

MoC1-7 [15:00-15:15]
Drone services and application for paddy fertilizing and oil palm mapping for climate change
Norsida Man, Hidayah Hassim, Nabara Isah Sehu and Nik Norasma
Universiti Putra Malaysia, Malaysia

Room D

Session Title	[MoD1] Remote Sensing for Disaster Management 1
Session Chair	Prof. Chul-Uong Choi *(Bukyong National University, Korea)*
Date	October 14 (Monday)
Time	13:30-14:45

MoD1-1 [13:30-13:45] The geographical study on drought assessment of the central dry zone in Myanmar (case study on Minbu Town, Magway Region)
Khin Mar Yee[1], Mu Mu Than[1], Kyi Lint[1], May Myat Thu[1], Mar Lar Han[1] and Moe Thidar Htwe[2]
[1]Dagon University, Myanmar, [2]Yadanarpon University, Myanmar

MoD1-2 [13:45-14:00] Analysis on damaged areas by wildfire on Gangwon Province in 2019 using KOMPSAT-3 images
Yeji Kim, Jong Min Yeom, Hongtak Lee, Hyun-Ok Kim, Tae-byeong Chea and Jeongho Lee
Korean Aerospace Research Institute, Korea

MoD1-3 [14:00-14:15] Comparison of soil erosion between sub-watersheds of Shihmen reservoir in Taiwan
Chih-Hung Wang and Walter Chen
National Taipei University of Technology, China Taipei

MoD1-4 [14:15-14:30] Assessment of flood hazard using geospatial data and frequency ratio model in Sukhothai Province, Thailand
Kamonchat Seejata, Aphittha Yodying, Sasithon Chatsudarat, Polpreecha Chidburee, Nattapon Mahavik, Charatdao Kongmuang and Sarintip Tantanee
Naresuan University, Thailand

MoD1-5 [14:30-14:45] Pine wood nematode disease wood extraction using TripleSat satellite images based on richer convolutional features
Dongyang Yan[1], Ting Chen[1], Pengfei Yan[1], Wenwen Qi[1], Yuexia Qiao[1], Jianjun He[1], Chong Chen2
[1]Twenty First Century Aerospace Technology Co. Ltd, China, [2]Twenty First Century Aerospace Technology (Asia) Pte. Ltd, Singapore

Room E

Session Title	[MoE1] Photogrammetry and Mapping 1
Session Chair	Prof. Jiann Rau *(National Cheng Kung University, China Taipei)*
Date	October 14 (Monday)
Time	13:30-15:15

MoE1-1 [13:30-13:45] Observations and analysis of beimen sandbank surface change using multi-temporal UAV datasets
Ruli Andaru[1,2] and Jiann-Yeou Rau[1]
[1]National Cheng Kung University, China Taipei, [2]Gadjah Mada University, Indonesia

MoE1-2 [13:45-14:00] Design and performance of a wearable geospatial data acquisition system
Linh Giang Do, Kanghyeok Choi, Changjae Kim, Hyunmook Lim and Seil Kim
Myongji University, Korea

MoE1-3 [14:00-14:15] Accuracy analysis of photogrammetric stereo visual odometry according to imaging geometry
Sung-Joo Yoon and Taejung Kim
Inha University, Korea

MoE1-4 [14:15-14:30] The strategy for multi-view dense image matching and point cloud refinement
Hsuan-Hsuan Liu and Jen-Jer Jaw
National Taiwan University, China Taipei

MoE1-5 [14:30-14:45] Deformation monitoring for historical site using close-range photogrammetry technique
Pei-An Lin and Yi-Hsing Tseng
National Cheng Kung University, China Taipei

MoE1-6 [14:45-15:00] Assessment of photogrammetric volume estimation as a method for quantifying the economically valuable industrial minerals in Sri Lanka
Rajitha Malshan Athukorala[1], Hemalal Panagoda[2], Manzul Kumar Hazarika[1], Kavinda Gunasekara[1] and Sahan Rajitha Jayawardena[2]
[1]Asian Institute of Technology, Thailand, [2]University of Moratuwa, Sri Lanka

MoE1-7 [15:00-15:15] Aerial photo data provision using small format aerial photography and ground control point: case study Parangtritis tropical sand dunes, Indonesia
Fajrun Wahidil Muharram, Farid Ibrahim and Nicky Setyawan
Parangtritis Geomaritime Science Park, Indonesia

Room F

Session Title	[MoF1] GIS & GNSS 1
Session Chair	Prof. Lao-Sheng Lin *(National Chengchi University, China Taipei)*
Date	October 14 (Monday)
Time	13:30-15:00

MoF1-1 [13:30-13:45] Improving the undulation estimation accuracy by genetic algorithm based least squares support vector machine
Chia-Hsin Chen and Lao-Sheng Lin
National Chengchi University, China Taipei

MoF1-2 [13:45-14:00] Spatial distribution analysis of Leafminer (*Lyriomyzae trifolii* Burgess) in onion growing areas of Nueva Ecija using geographic information system (GIS)
Ronaldo T. Alberto, Ariel R. Biagtan and Miguelito F. Isip
Central Luzon State University, Philippines

MoF1-3 [14:00-14:15] Assessment of human mobility from taxi GPS probe data in Bangkok, Thailand
Songkorn Siangsuebchart, Sarawut Ninsawat, Apichon Witayangkurn and Surachet Pravinvongvuth
Asian Institute of Technology, Thailand

MoF1-4 [14:15-14:30] Spatial analysis of the air pollution effect on domestic violence and robbery in New South Wales
I Gede Brawiswa Putra, Pei-Fen Kuo and Hsu-Hsien Chen
National Cheng Kung University, China Taipei

MoF1-5 [14:30-14:45] GeoEDGE map engine: spatial data sharing & visualiztion tool for collavorative map editing
Anuradha Rajanayake and Dimesh Dharmathilake
GeoEDGE (Pvt) Ltd, Sri Lanka

MoF1-6 [14:45-15:00] A comparison of DEM generation from LiDAR data using LasTools and ArcMap software
Bahareh Kalantar[1], Husam A. H. Al-Najjar[2], Adel Salem Ali[3], Biswajeet Pradhan[2,4] and Shattri Mansor[3]
[1]RIKEN Center for Advanced Intelligence Project, Japan, [2]University of Technology Sydney, Australia, [3]Universiti Putra Malaysia, Malaysia, [4]Sejong University, Korea

October 14 (Monday) / 15:45-17:30

Room A

Session Title: [MoA2] Remote Sensing of Forestry 2
Session Chairs: Prof. Meriam Santillan *(Caraga State University, Philippines)*
Prof. Man Sing Wong *(The Hong Kong Polytechnic University, Hong Kong)*
Date: October 14 (Monday)
Time: 15:45-17:30

MoA2-1 15:45-16:00
Detection of dead tress with remote sensing technologies for assessing planted forests
Azlin Azmi, Norimaniah Mazelan, Mohd Fairuz Fuazi and Muhamed Kamal Azidy Musa
Malaysian Space Agency, Malaysia

MoA2-2 16:00-16:15
Using dual-polarization Sentinel-1a for mapping vegetation types in Daklak, Vietnam
Hang Le Minh[1], Truong Vu Van[1] and Tuan Tran Anh[2]
[1]Le Quy Don Technical University, Vietnam, [2]Vietnam Academy of Science, Technology, Vietnam

MoA2-3 16:15-16:30
Aboveground biomass estimation of mangroves in Siargao Island, Philippines using Sentinel-1 image
Meriam Makinano-Santillan, Charlene G. Bolastig and Jojene R. Santillan
Caraga State University, Philippines

MoA2-4 16:30-16:45
Hyperspectral estimation of leaf chlorophyll content in Moso Bamboo (*Phyllostachys pubescens*) forests
Regassa Terefe Urga[1,2], Kun-yong Yu[1,2] and Jian Liu[1,2]
[1]University Key Laboratory of Technology, Optimize Resource Utilization in Fujian Province, China, [2]Fujian Agriculture, Forestry University, China

MoA2-5 16:45-17:00
The global mangrove watch – mapping mangrove extent and change in Southeast Asia over 20 years
Ake Rosenqvist[1], Pete Bunting[2], Richard Lucas[2] and Lammert Hilarides[3]
[1]solo Earth Observation (soloEO), Japan, [2]Aberystwyth University, UK, [3]Wetlands International, Netherlands

MoA2-6 17:00-17:15
Modeling anthropogenic effects on the burn area of forest and land in Kalimantan Indonesia using random forests
Lesi Mareta[1], Rahmat Hidayat[1], Rini Hidayati[1] and Amida Lailatul Latifah[2]
[1]IPB University, Indonesia, [2]Indonesian Institute of Sciences, Indonesia

MoA2-7 17:15-17:30
Detection of structural tree defects using thermal infrared imaging
Coco Yin Tung Kwok[1], Man Sing Wong[1], Hon Li[1], Karena Ka Wai Hui[1], Florence Wan Yee Ko[2], Herman Yiu Kay Shiu[2] and Zilhan Kan[1,3]
[1]The Hong Kong Polytechnic University, Hong Kong, China, [2]Government of the Hong Kong Special Administrative Region, Hong Kong, China and [3]State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, China

Room B

Session Title: [MoB2] Remote Sensing of Environment 2
Session Chair: Prof. Chih Wu *(National Cheng Kung University, China Taipei)*
Date: October 14 (Monday)
Time: 15:45-17:15

MoB2-1 15:45-16:00
Estimating PM_{10} concentrations in the main routes of Hanoi, Vietnam by using VNREDSat-1 data
Nguyen Nhu Hung[1], Le Minh Hang[1], Tran Van Anh[2], Du Vu Viet Quan[3] and Van-Manh Pham[3]
[1]Le Quy Don Technical University, Vietnam, [2]University of Mining, Geology, Vietnam, [3]VNU University of Science, Vietnam

MoB2-2 16:00-16:15
Estimation of ground-level PM2.5 concentrations in northern Thailand from MODIS aerosol product
Sompong Liangrocapart, Suphongsa Kketkeeree, Shariff Manuthasna and Aniwat Plodpai
Mahanakorn University of Technology, Thailand

MoB2-3 16:15-16:30
Estimating particulate matter concentrations (PM10) from Aerosol optical depth over the Emirate of Abu Dhabi, United Arab Emirates
Abdelgadir Abuelgasim
United Arab Emirates University, UAE

MoB2-4 16:30-16:45
A geoinformatics-based modeling and mapping techniques for an integrated surface water quality monitoring and assessment
Michelle V. Japitana[1], Alexander T. Demetillo[1], Evelyn B. Taboada[2], Chul-soo Ye[3] and Marlowe Edgar C. Burce[2]
[1]Univ. of San Carlos, Philippines, [2]Caraga State Univ., Philippines, [3]Far East Univ., Korea

MoB2-5 16:45-17:00
Assessment of population exposure to PM2.5 and long-term mortality in Malaysia
Muhammad Alfatih Pahrol[1], Wan Rozita Wan Mahiyuddin[1], Rafiza Shaharudin[1], Mohamad Iqbal Mazeli[1], Noraishah Mohammad Sham[1], Ameerah Su'ad Abdul Shakor[1], Mohd Talib Latif[2], Mazrura Sahani[2], Nurul Amalin Fatihah Kamarul Zaman[3], Kasturi Devi Kanniah[3] and Norlen Mohamed[4]
[1]Ministry of Health, Malaysia, [2]Universiti Kebangsaan Malaysia, Malaysia, [3]Universiti Teknologi Malaysia, Malaysia, [4]Ministry of Health Malaysia, Malaysia

MoB2-6 17:00-17:15
Linkage between green space structures and mental disorder in Taiwan
Hao-Ting Chang, Chih-Da Wu and Huey-Jen Su
National Cheng Kung University, China Taipei

Room C

Session Title: [MoC2] Remote Sensing for Agriculture 2
Session Chair: Prof. Chul-Uong Choi *(Bukyong National University, Korea)*
Date: October 14 (Monday)
Time: 15:45-17:15

MoC2-1 15:45-16:00
Assessment of drought impact on rice paddy field in North Korea from 2007 to 2019
Etsuko Nakazono and Wataru Takeuchi
The University of Tokyo, Japan

MoC2-2 16:00-16:15
Development of a satellite-based modular mapping and assessment program for rice production for the Philippines: the MAPALAY project experience
Carla Mae Arellano, Rusty Lopez, Enrico Paringit and Czar Jakiri Sarmiento
University of the Philippines, Philippines

MoC2-3 16:15-16:30
Evaluation of RapidEye, Sentinel-2 and Landsat-8 imageries in rice terrace extraction using machine learning algorithms
Hang Thi Do, Venkatesh Raghavan and Go Yonezawa
Osaka City Univ., Japan

MoC2-4 16:30-16:45
Targeting dissemination of submergence tolerant rice in Assam, India: a geomatics approach
D. D. Sinha1, A. N. Singh[1], Tri D. Setiyono[2] and U. S. Singh[3]
[1]International Rice Research Institute, India, [2]International Rice Research Institute, Philippines, [3]International Potato Center, India

MoC2-5 16:45-17:00
Application of multitemporal Sentinel-1 Synthetic Aperture Radar (SAR) data to assess rain-fed rice growth in the upper Chi-river Basin, Thailand
Aimamorn Kongarsa and Chattichai Waisurasingha
Khon Kaen University, Thailand

MoC2-6 17:00-17:15
Remote sensing monitoring of crop disease based on fusion of different image scales
Wei-guo Li
Jiangsu Academy of Agricultural Sciences, China

Room D

Session Title	[MoD2] Remote Sensing for Disaster Management 2
Session Chair	Prof. Jaehyung Yu *(Chungnam National University, Korea)*
Date	October 14 (Monday)
Time	15:45-17:30

MoD2-1 15:45-16:00
Comparison of Bingham mine landslide DSMs using Pleiades Tri-stereo satellite data
Philip Cheng
PCI Geomatics, Canada

MoD2-2 16:00-16:15
LiDAR-based flood hazard simulation in northeastern Luzon River Basins, Philippines
Januel P. Floresca
Isabela State University, Philippines

MoD2-3 16:15-16:30
Backscattering analysis of typhoon-induced landslides using Sentinel-1 C-band SAR data
Yu-Ching Huang and Shou-Hao Chiang
National Central University, China Taipei

MoD2-4 16:30-16:45
Mapping secondary surface deformation related to the 2018 sulawesi earthquake via Synthetic Aperture Radar offset tracking
Won-Kyung Baek and Hyung-Sup Jung
University of Seoul, Korea

MoD2-5 16:45-17:00
Land surface temperature (LST) as a part of space based multi-parametric approach for (earthquake) precursor studies (S-MAPS)
Nabendu Raul[1], Madhumita Jana[1] and P.K. Champatiray[2]
[1]IIT, India, [2]IIRS, India

MoD2-6 17:00-17:15
A fire risk map for protected areas of Mongolia: Tujiin Nars NP, Khan Khentii SPA and Bogd Khan SPA
Elbegjargal Nasanbat[1,2], Ochirkhuyag Lkhamjav[2], Amanjol Bulkhbai[1,2], Chuluunbaatar Tsevee-Oirov[3], Odbayar Mishigdorj[1,2] and Erdenetuya Magsar[2,4]
[1]Information, Research Institute of Meteorology Hydrology, Environment, Mongolia, [2]Mongolian Geospatial Association, Mongolia, [3]The Ministry of Environment, Tourism, Mongolia, [4]National Agency for Meteorology, Environmental Monitoring, Mongolia

MoD2-7 17:15-17:30
The Study of Landslide susceptibility using GIS based on rainfall deriving from TRMM over Northern Thailand
Sasithon Chatsudarat, Aphittha Yodying, Kamonchat Seejata, Polpreecha Chidburee, Nattapon Mahavik, Charatdao Kongmuang and Sarintip Tantanee
Naresuan University, Thailand

Room E

Session Title	[MoE2] Photogrammetry and Mapping 2
Session Chairs	Prof. Tee-Ann Teo *(National Chiao Tung University, China Taipei)* Prof. Changjae Kim *(Myongji University, Korea)*
Date	October 14 (Monday)
Time	15:45-17:30

MoE2-1 15:45-16:00
Stereo visual navigation based on network adjustment of relative orientation parameters
Kuan-Ying Lin, Yi-Hsing Tseng and Kai-Wei Chiang
National Cheng-Kung University, China Taipei

MoE2-2 16:00-16:15
A hybrid approach for building candidate extraction from high-resolution satellite imagery
Hyowon An[1], Changjae Kim[1], Hyosung Lee[2] and Daesik Shin[3]
[1]Myongji Univ, Korea, [2]Sunchon National Univ, Korea, [3]Agency for Defense Development, Korea

MoE2-3 16:15-16:30
Skeleton-based automatic road network extraction from an orthophoto colored point cloud
Elyta Widyaningrum[1,2] and Roderik C. Lindenbergh[1]
[1]Delft University of Technology, Netherlands, [2]Geospatial Information Agency, Indonesia

MoE2-4 16:30-16:45
Western lampung probabilistic Tsunami hazard model: investgations by aerial photogrammetry and remote sensing data
Arliandy P. Arbad[1], W. Takeuchi[2], S. Jonathan[3], M. Jamilah[4], Achmad Ardy[5] and Chusna Meimuna[6]
[1]Kampus Baru UI Depok, Indonesia, [2]The University of Tokyo, Japan, [3]Institute Technology of Sumatera, Indonesia, [4]Diponegoro University, Indonesia, [5]Lampung University, Indonesia, [6]The University of Indonesia, Indonesia

MoE2-5 16:45-17:00
Mapping traffic signboard from mobile mapping systems using deep learning approach
Pei-Cheng Chen and Tee-Ann Teo
National Chiao Tung University, China Taipei

MoE2-6 17:00-17:15
Spatial distribution for the ancient mounted tombs using uav UAV digital maps in Fukuoka
Yukiya Taniguchi[1], Susumu Ogawa[2] and Toshiro Harunari[3]
[1]University of Tokyo, Japan, [2]Institute of Spatial Technology, Japan, [3]Nagasaki Univ, Japan

MoE2-7 17:15-17:30
A methodology to obtained 3D thermograph of a building for a better building inspection
N. S. Ishak[1], M. Nadzri Md Reba[1], A. Ahmad[1], N. N. Sarbini[1], Tong, K. F.[2] and Jerry O. H. J.[2]
[1]Universiti Teknologi Malaysia, Malaysia, [2]Andes Consultants Pte Ltd, Singapore

Room F

Session Title	[MoF2] GIS & GNSS 2
Session Chair	Prof. Lao-Sheng Lin *(National Chengchi University, China Taipei)*
Date	October 14 (Monday)
Time	15:45-17:15

MoF2-1 15:45-16:00
Study on mitigating the systematic errors between the announced orthometric heights in different years by corrector surface models
Chia-Hsin Chen, Lao-Sheng Lin, Wei-Jun Wang and Yan-Yi Wu
National Chengchi University, China Taipei

MoF2-2 16:00-16:15
GIS-based methodology on techno-economic potential assessment of sugarcane residues in Medellin, Cebu, Philippines
Wenyville Galang[1, 2], Ian Dominic Tabañag[1] and Michael Loretero[1]
[1]University of San Carlos, Philippines, [2]Holy Name University, Philippines

MoF2-3 16:15-16:30
Geospatial Resource Information System for Decentralized Planning & Decision Support in Himachal Pradesh, India
Meher Kaushal[1], Sunil Sharma[2] and Brijesh Saklani[3]
[1]SRM Institute for Science & Technology Chennai, India, [2]Haryana Space Application Centre (HARSAC), India, [3]State Council for Science Technology & Environment, India

MoF2-4 16:30-16:45
A citizen volunteered application for rural commuters to manage traffic congestion- potentials for a GIS based mobile application
Granie R Jayalath[1] and Sureka Chethani[2]
[1]Roads Development Authority, Sri Lanka, [2]University of Colombo, Sri Lanka

MoF2-5 16:45-17:00
Heuristic automatic georeferencing of digitally captured sketch maps for community and participatory GIS
Punyapat Sessomboon and Sally E. Goldin
King Mongkut's University of Technology Thonburi, Thailand

MoF2-6 17:00-17:15
Spatial optimization and land use allocation based on carrying capacity using cellular automata
Sitarani Safitri, Irawan Sumarto, Akhmad Riqqi and Albertus Deliar
Inst. Tech. of Bandungm, Indonesia

October 15 (Tuesday) / 09:00-10:30

Room A

Session Title [TuA1] Remote Sensing of Forestry 3
Session Chair Dr. Nguyen Duong *(VAST, Viet Nam)*

Date October 15 (Tuesday)
Time 09:00-10:15

TuA1-1 09:00-09:15
Evaluation of vegetation indices (VIs) to detect twister disease of onion using Sentinel-2 imagery
Ronaldo Alberto, Miguelito Isip and Ariel Biagtan
Central Luzon State University, Philippines

TuA1-2 09:15-09:30
Mapping natural forest by Landsat multitemporal image data - case study in Kon Tum province of Vietnam
Nguyen Dinh Duong
Vietnam Academy of Science and Technology, Vietnam

TuA1-3 09:30-09:45
Optimum three layers for change detection using Landsat images
Essam Hassan Hamza, Mohamed Ahmed Gomaa and Hassan Elsaid Elhifnawy
Military Technical College, Egypt

TuA1-4 09:45-10:00
Forest classification by tree species with UAV data and U-Net
Ei Matsui, Masahiko Nagai, Yumiko Nagai, Tsuyoshi Eguchi, Shoji Okamoto and Yoshiki Mizukami
Yamaguchi University, Japan

TuA1-5 10:00-10:15
Analyzing the relationship between land cover and land surface temperature (LST) distribution in the mount papandayan Area, West Java
Tin Widyani Satriawan, Endah Sulistyawati and Agung Budi Harto
Institut Teknologi Bandung, Indonesia

Room B

Session Title [TuB1] Remote Sensing of Environment 3
Session Chair Prof. Jungho Im *(UNIST, Korea)*

Date October 15 (Tuesday)
Time 09:00-10:30

TuB1-1 09:00-09:15
PM_{10} and NO_2 concentration variations in indonesia using geospatial technologies: a case study
Liadira Kusuma Widya[1,2], Chih-Da Wu[2,3], Ya-Ping Hsiao[1] and Lalu Muhamad Jaelani[2]
[1]The Univ. of Tainan, China Taipei, [2]The Univ. of Surabaya, Indonesia, [3]National Health Research, China Taipei

TuB1-2 09:15-19:30
Estimation and analysis of aerosol optical thickness (AOT) in metro manila from 2015 to 2018 using remote sensing and GIS
Ricardo Marlo S. Juangco, Arlan S. Pagcu, Roseanne V. Ramos and Ayin M. Tamondong
The Univ. of Quezon City, Philippines

TuB1-3 09:30-09:45
Spatiotemporal change analysis of the protected areas: a case study-igneada floodplain forests
Emre Çolak[1], Merve Toker[2] and Filiz Sunar[3]
[1]ITU, Turkey, [2]Ministry of Agriculture and Forestry, Turkey, [3]ITU, Turkey

TuB1-4 09:45-10:00
Impact assessment of urbanization on air quality in Colombo, Sri Lanka
Lilangi Varunika Wijesinghe and Wataru Takeuchi
The University of Tokyo, Japan

TuB1-5 10:00-10:15
Spatial estimation of methane emission from rice fields using sentinel-1A SAR data and MODIS satellite data
N.S. Sudarmanian, S. Pazhanivelan and M. Venkatesan
The Univ. of Coimbatore, India

TuB1-6 10:15-10:30
Estimation of ground SO_2 concentration through the synergistic use of satellite data and numerical models
Yoo-jin Kang, Hyun-young Choi, Jung-ho Im, Eun-na Jang, Jung-hee Lee and Yeon-su Lee
The Univ. of Ulsan, Korea

Room C

Session Title [TuC1] Remote Sensing for Agriculture 3
Session Chairs Dr. Pazhanivelan Sellaperumal *(Tamil Nadu Agricultural University, India)*
Dr. Jing Wang *(Jiangsu Academy of Agricultural Sciences, China)*

Date October 15 (Tuesday)
Time 09:00-10:30

TuC1-1 09:00-09:15
Estimating corn (*Zea Mays* l.) LAI using UAV-derived vegetation indices
Jayson O. Fumera, Ronaldo B. Saludes, Moises A. Dorado and Pompe C. Sta. Cruz
The Univ of Laguna, Philippines

TuC1-2 09:15-19:30
Modeling inter-annual and seasonal distribution of crop depredation by wild asian elephants in eastern THAILAND during 2009 to 2017
Nuntikorn Kitratporn and Wataru Takeuchi
The Univ. of Tokyo, Japan

TuC1-3 09:30-09:45
Regional rice yield estimation based on assimilation of remote sensing data and crop growth model with ensemble KALMAN method
Jing Wang, Kun Yu, Bihui Lu and Miao Tian
Jiangsu Academy of Agricultural Sciences, China

TuC1-4 09:45-10:00
Title bolded (times new roman, 14 point type, centered, capitalized every words, with the exception of units of measure or other specialty terms that are recognized and used in lowercase form)
Woo-Kyun Lee[1], Seong-Woo Jeon[1] and Taejung Kim[2]
[1]The Univ. of Seoul, Korea, [2]The Univ. of Incheon, Korea

TuC1-5 10:00-10:15
Assessment of agricultural land-cover change in NUEVA ECIJA using geographic information system and remote sensing technologies
Edmark Bulaong, Eliza E. Camaso, Annie Melinda Paz Alberto and Katrina Mapanao
The Univ. of Muñoz, Philippines

TuC1-6 10:15-10:30
Verification of color indices obtained from digital cameras for estimation of rice growth statuses under various conditions
Yukie Tanaka, Keisuke Katsura and Megumi Yamashita
Tokyo University of Agriculture and Technology, Japan

Room D

Session Title	[TuD1] Remote Sensing for Disaster Management 3
Session Chair	Dr. Alice Laborte *(International Rice Research Institute, Philippines)*
Date	October 15 (Tuesday)
Time	09:00-10:15

TuD1-1 09:00-09:15
Assessment of urban vulnerability to earthquake hazard for tabriz city, NW IRAN USING ANP-ANN model
Mohsen Alizadeh[1], Amin Beiranvand Pour[2,4], Bahareh Kalantar[3] and Aidy M Muslim[4]
[1]Universiti Teknologi, Malaysia, [2]Korea Polar Research Institute, Korea, [3]Goal-Oriented Technology Research Group, Japan, [4]Universiti Malaysia Terengganu, Malaysia

TuD1-2 09:15-09:30
Analysis of spatial and temporal characteristics of drought and flood based on precipitation temperature index at winter wheat growth stages
Miao Tian and Jing Wang
Institute of Agricultural Information, China

TuD1-3 09:30-09:45
Integrated approach in determining building risk to TSUNAMI HAZARD : a case study of Penang, Malaysia
Sabrina Shahri, Zuraimi Suleiman, Shahruddin Ahmad, Nurul Nadia Abd Malek and Hana Mohamed Jamil
Malaysian Space Agency, Malaysia

TuD1-4 09:45-10:00
Predicting potential forest fire occurrences in the state of uttarakhand, India using maxent species distribution modelling
Souradeepa Naskar
Tata Institute of Social Sciences, India

TuD1-5 10:00-10:15
Delineating flood extent and flood-prone rice areas in the Philippines using synthetic aperture radar
Alice Laborte[1], Jeny Raviz[1], Sonia Asilo[2], Mary Rose Mabalay[2], Neale Paguirigan[1], Juanito Maloom[2], Mabel Barroga[2], Jesiree Elena Ann Bibar[2], Meriam Coñado[2], Eve Daphne Radam[2], Jovino de Dios[2] and Eduardo Jimmy Quilang[2]
[1]International Rice Research Institute, Philippines, [2]Philippine Rice Research Institute, Philippines

Room E

Session Title	[TuE1] Photogrammetry and Mapping 3
Session Chairs	Prof. Taejung Kim *(Inha University, Korea)* Prof. Khairul Nizam Abdul Maulud *(Universiti Kebangsaan Malaysia, Malaysia)*
Date	October 15 (Tuesday)
Time	09:00-10:30

TuE1-1 09:00-09:15
A preliminary study on updating a detected traffic cone's coordinates obtained from a stereo camera on a pseudo high definition map database
Miguel Luis R. Lagahit and Yi-Hsing Tseng
National Cheng Kung University, China Taipei

TuE1-2 09:15-19:30
High accuracy digital surface model (DSM) generation, orthorectification and mosaicking using phase one aerial cameras
Philip Cheng
PCI Geomatics, Canada

TuE1-3 09:30-09:45
Photogrammetric 3D modelling potential comparison of SFM-based new generation image matching software
Umut Gunes SEFERCIK, Feride TANRIKULU and Can ATALAY
Zonguldak Bülent Ecevit University, Turkey

TuE1-4 09:45-10:00
Investigation of palu tunnel deformations along the creeping section (hazar-palu segment) of the east anatolian fault, Turkey by terrestrial laser scanner
Ugur Dogan[1], Bulent Bayram[1], Semih Ergintav[2], Alper Yigitoglu[1], Ziyadin Cakir[3], Cengiz Zabci[3] and Hayrullah Karabulut[2]
[1]Yildiz Technical University, Turkey, [2]Bogazici University, Turkey, [3]Istanbul Technical University, Turkey

TuE1-5 10:00-10:15
A concrete bridge crack size measurement procedure based on unmanned aerial vehicle and image registration
Hsuan-Yi Li and Chih-Yuan Huang
National Central University, China Taipei

TuE1-6 10:15-10:30
Grassland coverage and biomass estimation based on major quadrat from UAV photogrammetry
BAO Nisha, LIU Shanjun and MAO Yachun
Northeastern University, China

Room F

Session Title	[TuF1] GIS & GNSS 3
Session Chair	Dr. Narong Pleerux *(Burapha University, Thailand)*
Date	October 15 (Tuesday)
Time	09:00-10:30

TuF1-1 09:00-09:15
Site suitability analysis of diversion dams in quezon, Philippines using multi-criteria decision analysis and GIS
Bryan M. Baltazar, Ronaldo B. Saludes, Moises A. Dorado and Pompe C. Sta. Cruz
UPLB, Philippines

TuF1-2 09:15-19:30
A study on the development of the urban waters flooding simulation system using Unity3d
Yeong-Cheol Choi, Dae-Ik Kang, Sung-Chan Oh and Kyeong-Hwan Choi
GEO C&I Co., Ltd, Korea

TuF1-3 09:30-09:45
On-road parking in Taipei city: spatial analysis of policy impact
Meng-Chin Tsai, Stephan van Gasselt and Tzu-Chin Lin
National Chengchi University, China Taipei

TuF1-4 09:45-10:00
Calculation of the number of peaks in the thousand hills area of southern JAVA using national DEM, focal maxima function and topography slope classification method
Heri Sutanta and Amalia Tiera
Universitas Gadjah Mada, Indonesia

TuF1-5 10:00-10:15
3D cadastral information system using CGA code and city engine for multi stories building with different vertical ownership ID's, a case of Adama, Ethiopia
A.S.Mohammed Abdul Athick[1] and Manikandan Sathyanarayanan[2]
[1]National Central University, China Taipei, [2]National Taiwan University, China Taipei

TuF1-6 10:15-10:30
Web-based application for housing suitability identification
Jesterlyn Q. Timosan and Melbert R. Bonotan
Caraga State University, Philippines

October 15 (Tuesday) / 11:00-12:30

Room A

Session Title: [TuA2] Remote Sensing of Forestry 4

Session Chair: Prof. Kyusung Lee *(Inha University, Korea)*

Date: October 15 (Tuesday)
Time: 11:00-12:15

TuA2-1 11:00-11:15
A combination method based on CSF and minimum weighted graph cuts to determine location and height of Individual tree from airborne LiDAR data
Cao Yujie[1], Cheng Xiaojun[1], Shan Rui[2], Li Jintao[1], Yang Zexin[1] and Huang Kai[1]
[1]Tongji Univ, China, [2]Qingdao Institute of Marine Geology, China

TuA2-2 11:15-11:30
Evaluation of Matang Mangrove forest loss and gain in 10 years time using multi-temporal satellite derived vegetation index
Mohd Fairuz Fuazi, Muhamad Zulfazli Zakaria and Azlin Azmi
Malaysian Remote Sensing Agency, Malaysia

TuA2-3 11:30-11:45
Listvenite occurrences in the fault zones of Northern Victoria Land, Antarctica: aster-based mapping approach
Amin Beiranvand Pour[1,2], Yongcheol Park[1], Jong Kuk Hong[1], Aidy M Muslim[3] and Biswajeet Pradhan[3]
[1]Korea Polar Research Institute, Korea, [2]Universiti Malaysia Terengganu, Malaysia, [3]University of Technology Sydney, Australia

TuA2-4 11:45-12:00
Canopy height model estimation using airborne laser radar and high resolution image in Borneo tropical reserve forest
Mohd Yussainy Md Yusop[1,2], Mohd Nadzri Md Reba[1] and Mohd Rizaludin Mahmud[1]
[1]Universiti Teknologi Malaysia, Malaysia, [2]Forestry Department of Peninsular Malaysia, Malaysia

TuA2-5 12:00-12:15
Mangrove leaf area index (LAI) mapping using worldview-2 imagery in Perancak Estuary, Bali, Indonesia
Aldo Restu Agi Prananda[1], Muhammad Kamal[1] and Denny Wijaya Kusuma[2]
[1]Universitas Gadjah Mada, Indonesia, [2]The Ministry of Maritime Affairs and Fisheries, Indonesia

Room B

Session Title: [TuB2] Remote Sensing of Environment 4

Session Chairs: Prof. Jungho Im *(UNIST, Korea)*
Dr. Khin Yee *(Dagon University, Myanmar)*

Date: October 15 (Tuesday)
Time: 11:00-12:30

TuB2-1 11:00-11:15
Estimation 1 km MODIS land surface temperature under cloudy conditions for humid summer days
Cheolhee Yoo[1], Jungho Im[1], Dongjin Cho[1], Naoto Yokoya[2] and Junshi Xia[2]
[1]UNIST, Korea, [2]RIKEN, Japan

TuB2-2 11:15-11:30
Calculating sediment yield using HEC-HMS in pilan and matiao watershed in Southern Philippines
Joseph E. Acosta, Richard M. Logronio, Ace Niño B. Guieb and Gus Kalli R. Oguis
The Univ. of Davao City, Philippines

TuB2-3 11:30-11:45
Time series analysis of aersol optical depth over the arabian peninsula from modis data 2003-2018
Amna Alnaqbi and Abdelgadir Abuelgasim
The Univ. of Al Ain, UAE

TuB2-4 11:45-12:00
Environmental implications of wheat residue burning -a case study of Haryana state, India
R.S. Hooda, Nidhi Kundu and Preksha Singh
HARSAC, India

TuB2-5 12:00-12:15
Air quality assessment of Yangon city
Khin Mar Yee[1], Mu Mu Than[1], Kyi Lint[1], Mar Lar Han[1], Ye Lin Aung[1] and Thu Thu Htwe[2]
[1]Dagon University, Myanmar, [2]Ministry of Natural Resources and Environmental Conservation, Myanmar

TuB2-6 12:15-12:30
Wetland information system using geo-informatics in Himachal Pradesh, India
Sharma Alka[1], Panigrahy Sushma[2], Singh T. S.[2], Patel J. G[2] and Tanwar H[1]
[1]SCSTE, India, [2]ISRO, India

Room C

Session Title: [TuC2] Remote Sensing for Agriculture 4

Session Chair: Prof. Anjin Chang *(Texas A&M University-Corpus Christi, United States of America)*

Date: October 15 (Tuesday)
Time: 11:00-12:30

TuC2-1 11:00-11:15
Assessment of cropland use in the AKKOL district of Kazakhstan using MODIS NDVI time-series data
Aigul Bekbayeva, Farabi Yermekov, SholpanValiyeva and Jay Sagin
The Univ. of Nur-Sultan, Kazakhstan

TuC2-2 11:15-11:30
Single crop phenotyping using unmanned aerial system (UAS) data
Anjin Chang[1], Jinha Jung[1] and Juan Landivar[2]
[1]The Univ. of Corpus Christi, USA, [2]Texas A&M AgriLife Research and Extension Center, USA

TuC2-3 11:30-11:45
Physio-climatic classification of bangladesh's rice paddy field for alternate wetting and drying (AWD)
Md Rahedul Islam and Wataru Takeuchi
The Univ. of Tokyo, Japan

TuC2-4 11:45-12:00
Automatic mapping of crop intensity and seasonal dynamics across south Asia using 15 years of MODIS imagery
Bhogendra Mishra
Paschimanchal Campus, Nepal

TuC2-5 12:00-12:15
Application of multi-temporal radarsat-2 backscattering for monitoring of paddy-planting stages in Malaysia
Muhammad Nazir Siham, Noryusdiana Mohamad Yusoff, Zuraimi Suleiman and Nurul Aina Abdul Aziz
Malaysian Remote Sensing Agency, Malaysia

TuC2-6 12:15-12:30
Remote sensing based rice crop insurances as an operational service in India using sentinel 1a and ORYZA crop simulation model
S. Pazhanivelan[1], K.P.Ragunath[1], N.S. Sudarmanian[1], R. Kumaraperumal[1], Tri setiyono[2] and E.D. Quicho[2]
[1]The Univ. of Tamil Nadu, India, [2]International Rice Research Institute, Philippines

Room D

Session Title	[TuD2] Remote Sensing for Disaster Management 4
Session Chair	Prof. Mazlan Hashim *(Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Malaysia)*
Date	October 15 (Tuesday)
Time	11:00-12:30

TuD2-1 11:00-11:15
Integration of sentinel-2 spectral information with high spatial resolution planetscope imagery for wildfire damage assessment
Minho Kim and Yongil Kim
Seoul National Univ., Korea

TuD2-2 11:15-11:30
Satellite-based detection of oil spill signature residual using synergy multispectral images of landsat-8 OLI and landsat-7 ETM+
Jamal Jasim Abdulla Althawadi and Mazlan Hashim
Universiti Teknologi Malaysia, Malaysia

TuD2-3 11:30-11:45
Flood risk assessement as affected by land use change for policy intervention : case of quaioit river watershed in Northern Philippines
Carlos Pascual and Julius Jimenez
Mariano Marcos State University, Philippines

TuD2-4 11:45-12:00
Flood hazard assessment using fuzzy analytic hierarchy process: a case study of bang rakam model in Thailand
Aphittha Yodying, Kamonchat Seejata, Sasithon Chatsudarat, Polpreecha Chidburee, Nattapon Mahavik, Charatdao Kongmuang and Sarintip Tantanee
Naresuan University, Thailand

TuD2-5 12:00-12:15
Landslide risk assessment in part of Ukhimath, Rudraprayag district, Uttarakhand, India
Shivangi
Tata Institute of Social Science, India

TuD2-6 12:15-12:30
Pest and plant disease identification in greenhouse using UAV images
Tzu-Ming Feng and Chao-Hung Lin
National Cheng Kung University, China Taipei

Room E

Session Title	[TuE2] New Sensors and Platforms 1
Session Chairs	Prof. Yi-Hsing Tseng *(National Cheng Kung University, China Taipei)* Dr. Wenjuan Zhang *(Aerospace Information Research Institute, CAS, China)*
Date	October 15 (Tuesday)
Time	11:00-12:30

TuE2-1 11:00-11:15
Low-cost UAV for determination of horizontal and vertical coordinates changes near coastal area
Khairul Nizam Abdul Maulud, Faiz Arif and Abdul Aziz Ab Rahman
Universiti Kebangsaan Malaysia, Malaysia

TuE2-2 11:15-11:30
Age estimate for the mounded tomb of Himiko by shape analysis
Susumu Ogawa[1], Yukiya Taniguchi[2] and Toshiro Harunari[3]
[1]Institute of Spatial Technology, Japan, [2]Univ. of Tokyo, Japan, [3]Nagasaki Univ, Japan

TuE2-3 11:30-11:45
Evaluation of GK2A AMI radiometric performance after the launch
Kyoung-Wook Jin and Koon-Ho Yang
Korea Aerospace Research Institute, Korea

TuE2-4 11:45-12:00
Image simulation for GF-5 visual and infrared multispectral sensor
Zhang Wenjuan[1], Shi Mengmeng[2], Zhang Bing[1,3], Li Yunduan[4] and Dai Haishan[4]
[1]Institute of Remote Sensing and Digital Earth, China, [2]Xi'an University of Science and Technology, China, [3]University of Chinese Academy of Sciences, China, [4]Shanghai Institute of Satellite Engineering, China

TuE2-5 12:00-12:15
A drone-based system for small-scale rice field monitoring
Baba Barus[1], Chiharu Hongo[2], Bambang H. Trisasongko[1] and La Ode S. Iman[1]
[1]Bogor Agricultural University, Indonesia, [2]Chiba University, Japan

TuE2-6 12:15-12:30
Quantifying diwata-1 and diwata-2 image degradation through spatial resolution using edge detection method
Olivar. Fritz Rhaem, Vergel. Kaye Kristine and Magallon. Benjamin
University of the Philippines, Philippines

Room F

Session Title	[TuF2] GIS & GNSS 4
Session Chair	Prof. Pei-Fen Kuo *(National Cheng Kung University, China Taipei)*
Date	October 15 (Tuesday)
Time	11:00-12:30

TuF2-1 11:00-11:15
Integration of GIS, GPS AND CCTV into a tracking APP system: developing a search tool for missing seniors with dementia
Pei-Fen Kuo and Chui-Sheng Chiu
Cheng Kung University, China Taipei

TuF2-2 11:15-11:30
An application of HEC-RAS model and geographic information system on flood maps analysis: case study of Upper Yom River
Sutthipat Wannapoch[1], Sarintip Tantanee[1], Sombat Chuenchooklin[1], Kamonchat Seejata[1] and Weerayuth Pratoomchai[2]
[1]Naresuan University, Thailand, [2]King Mongkut's University of Technology Thonburi, Thailand

TuF2-3 11:30-11:45
Harnessing the potential of mobile devices as field data collection tool in a satellite-based rice monitoring system
Arnel B. Rala, Tri Setiyono, Gene Romuga, Emma Quicho, Cornelia Garcia, Aileen Maunahan and Emmali Manalo
International Rice Research Institute, Philippines

TuF2-4 11:45-12:00
Applying geographical information system to identify evacuation zones in case of tsunami in Da Nang city, Vietnam
Bui Quang Binh
Institute of Regional Sustainable Development, Vietnam

TuF2-5 12:00-12:15
Genealogical aggregation and ancestral domain management: a web-based GIS implementation in a developing country
Vicente A. Pitogo[1], Glenn H. Lahayon[2] and Giovanni T. Esma[1]
[1]Caraga State University, Philippines, [2]Office of the Civil Defense, Philippines

TuF2-6 12:15-12:30
On the consistency of GIPSY-X and GIPSY-OASIS with samples
Ding-jyun Wang and Peter T.Y. Shih
National Chiao Tung University, China Taipei

October 15 (Tuesday) / 13:30-15:00

Room A

Session Title [TuA3] Remote Sensing of Forestry 5

Session Chair Prof. Kyusung Lee *(Inha University, Korea)*

Date October 15 (Tuesday)
Time 13:30-15:00

TuA3-1 13:30-13:45
Forest clearance monitoring with dual polarized SAR data in the Peatlands of Insular southeast Asia
Chenghua Shi and Soo Chin Liew
National University of Singapore, Singapore

TuA3-2 13:45-14:00
Mapping and estimation of grass above-ground Biomass (GAB) using Sentinel 2A satellite data
Isa Muhammad Zumo[1,2,3] and Mazlan Hashim[1,2]
[1]Geoscience & Digital Earth Centre, Malaysia, [2]Universiti Teknologi Malaysia, Malaysia, [3]Federal Polytechnic, Nigeria

TuA3-3 14:00-14:15
Potential of hyperspectral remote sensing data in assessing chlorophyll content of mature oil palm with linear discriminant analysis classifier
Amiratul Diyana Amirruddin, Farrah Melissa Muharam, Mohd Hasmadi Ismail, Mohd Firdaus Ismail and Tan Ngai Paing
Universiti Putra Malaysia, Malaysia

TuA3-4 14:15-14:30
Analysis of land use/land cover change in Daknong province using multi-temporal satellite images and Markov
Nguyen Thi Thanh Huong[1], Ngo Thi Thuy Phuong[1] and Nguyễn Thị Hồng Điệp[2]
[1]Tay Nguyen Univ, Vietnam, [2]Can Tho Univ, Vietnam

TuA3-5 14:30-14:45
Remote sensing monitoring of land use/cover change in the Nakhon Ratchasima Plateau, Thailand based on long time Sequence Landsat satellite imagery
Rui Xi and Zhanyu Liu
Hangzhou Normal University, China

TuA3-6 14:45-15:00
Vegetation indices comparison for Mangrove above-ground carbon stock estimation using worldview-2 image in Perancak Estuary, Bali, Indonesia
Dian Utari[1], Muhammad Kamal[1] and Frida Sidik[2]
[1]Universitas Gadjah Mada, Indonesia, [2]The Ministry of Maritime Affairs and Fisheries Jembrana, Indonesia

Room B

Session Title [TuB3] Remote Sensing of Hydrology and Water Resources 1

Session Chair Prof. Wonkook Kim *(Pusan National University, Korea)*

Date October 15 (Tuesday)
Time 13:30-14:45

TuB3-1 13:30-13:45
Subsurface water level observation of croplands in Myanmar with KBDI
Kyaw Sann Oo[1] and Wataru Takeuchi[2]
[1]Kayah Phoo Group Company Limited, Myanmar, [2]The Univ. of Tokyo, Japan

TuB3-2 13:45-14:00
Characteristics of 2-d convective structure in Yom-nan river basin, Thailand: an analysis using radar data on heavy rainfall events
Nattapon Mahavik, Sasithon Chatsudarat, Aphittha Yodying and Kamonchat Seejata
The Univ. of Phitsanulok, Thailand

TuB3-3 14:00-14:15
Water environment suitability for mari-culture using landsat image 8 OLI/TIRS
Karunia Pasya K, Shafa Arum Wulandari, Shelly Yeni Saputri, Yuana Dysa Permatasari, Zulfian Isnaini Cahya, Wirastuti Widyatmanti and Muhammad Chaidir Undu
The Univ. of Yogyakarta, South Sulawesi

TuB3-4 14:15-14:30
Comparison of global forecast systems to field data using GIS and its application on watershed management and community development
Engr. Mark Paulo Alcala
The Univ. of Quezon City, Philippines

TuB3-5 14:30-14:45
A study on the applicability of rededge-m camera for water color observation
Wonkook Kim[1] and Sunghun Jung[2]
[1]The Univ. of Busan, Korea, [2]The Univ. of Dongshin, Korea

Room C

Session Title [TuC3] SAR Data Processing

Session Chair Dr. Iman Heidarpour Shahrezaei *(Korea Polar Research Institute (KOPRI), Korea)*

Date October 15 (Tuesday)
Time 13:30-15:00

TuC3-1 13:30-13:45
SAR processing by chirp scaling algorithm(CSA) based general algorithm
Dong-Hyun Kim, Do Chul Yang, Ho Ryung Jung and Dong Han Lee
Korea Aerospace Research Institute, Korea

TuC3-2 13:45-14:00
Automated extraction of water bodies from alos-2 images using u-net and rough training set
Vaibhav Katiyar and Masahiko Nagai
The Univ. of Yamaguchi, Japan

TuC3-3 14:00-14:15
Comparative accuracy assessment of LiDAR and ifsar dem on stratified terrain types
Joseph E. Acosta, Gus Kali R. Oguis and Abigail June L. Agus
The Univ. of Davao City, Philippines

TuC3-4 14:15-14:30
Investigation of ununiform ship phase observed in high-resolution tandem-X ATI-SAR using electromagnetic simulation
Seungchul Lee, Duk-jin Kim and Ki-mook Kang
School of Earth and Environmental Sciences, Korea

TuC3-5 14:30-14:45
A reflection symmetry approximation of multi-look polarimetric SAR data and its application to freeman-durden decomposition
Wentao An[1,2] and Mingsen Lin[1,2]
[1]National Satellite Ocean Application Service, China, [2]SOA, China

TuC3-6 14:45-15:00
A deep neural network slope reduction model on Sentinel-1 images for water mask extraction
Marios Mpakratsas, Anastasia Moumtzidou, Ilias Gialampoukidis, Stefanos Vrochidis and Ioannis Kompatsiaris
Centre for Research and Technology Hellas, Greece

Room D

Session Title	[TuD3] Remote Sensing for Disaster Management 5
Session Chair	Prof. Shou-Hao Chiang *(Center for Space and Remote Sensing Research, National Central University of Taiwan, China Taipei)*
Date	October 15 (Tuesday)
Time	13:30-14:45

TuD3-1 13:30-13:45
Measuring land subsidence in Bangkok and its Vicinity area using sentinel-1 SAR data for InSAR iime series analysis
Anuphao Aobpaet[1], Pattama Phodee[2] and Angkana Pumpuang[1]
[1]Kasetsart University, Thailand, [2]Burapha University, Thailand

TuD3-2 13:45-14:00
The role of environmental and epidemiological in mapping susceptibility malaria disease in Ranau district using remote sensing and GIS
Shimatun Jumani Ibrahim[1], Norimaniah Mazelan[1], Zuraimi Suleiman[1], Jenarun Jelip[2], Mohd Hafizi Abdul Hamid[2], Hazil Sardi Soliano[1], Ong Chia Ching[2] and Ahmad Shah Ibrahim[2]
[1]Malaysian Remote Sensing Agency, Malaysia, [2]Ministry of Health, Malaysia

TuD3-3 14:00-14:15
The use of soil moisture active passive (SMAP) data for LARGE-SCALE Fire management over Gang-won Province
Ju-Hyoung, Lee
Korea University, Korea

TuD3-4 14:15-14:30
Effects of topographic datasets on physically based landslide model at a hyper local slop
Azizi Dermawan and Shou-Hao Chiang
National Central University, China Taipei

TuD3-5 14:30-14:45
The recent situation of space technologies for monitoring and management disaster
Mohamad Rukieh
AAFAQ Establishment for Trading and Consulting, Syria

Room E

Session Title	[TuE3] PNew Sensors and Platforms 2
Session Chairs	Dr. Manzul Hazarika *(Asian Institute of Technology, Thailand)* Dr. Gay Jane Perez *(University of the Philippines Diliman, Philippines)*
Date	October 15 (Tuesday)
Time	13:30-14:30

TuE3-1 13:30-13:45
Satellite attitude offset estimation for kompsat-6
Dochul Yang, Byoung-Gyun Lim and Donghyun Kim
Korea Aerospace Research Institute, Korea

TuE3-2 13:45-14:00
Effects of orbit degradation to DIWATA-2 data products and operations
Monay, Kristian R. and Magallon, Benjamin Jonah P.
University of the Philippines Diliman, Philippines

TuE3-3 14:00-14:15
Low cost high accurate areal mapping with custom built RTK drone
Sasanka L. Madawalagama, Manzul K. Hazarika and Kavinda Gunasekara
Asian Institute of Technology, Thailand

TuE3-4 14:15-14:30
Evolution of remote sensing: what's next?
Abhineet Jain
Maxar, Singapore

Room F

Session Title	[TuF3] GIS & GNSS 5
Session Chair	Prof. Changjae Kim *(Myongji University, Korea)*
Date	October 15 (Tuesday)
Time	13:30-15:00

TuF3-1 13:30-13:45
Effect of climate change on site suitability and reliability of small farm reservoir in Oriental Mindoro, Philippines
Kobe Conrad R. Abellera, Ronaldo B. Saludes, Michel G. Acosta, Roger A. Luyun Jr. and Rossana Marie C. Amongo
University of the Philippines Los Baños, Philippines

TuF3-2 13:45-14:00
Exploring the topographic characteristics of settlement toponyms in Taiwan
Jinn-Guey Lay[1], Cheng-Ru Chen[2], Chia-Jung Wu[3], Wei-Chia Huang[1] and Ray Y. Chuang[1]
[1]National Taiwan University, China Taipei, [2]National Central University, China Taipei, [3]Tunghai University, China Taipei

TuF3-3 14:00-14:15
Identification of road accident recurrence in Sri Racha district, Chon Buri province
Narong Pleerux and Attawut Nardkulpat
Burupha University, Thailand

TuF3-4 14:15-14:30
Use of open data kit and android devices for fast and easy data collection - a case study from the Philippines
Ubo Pakes[1,3], Rhea Subong[2], Mary Ann Gumban[2], Klaus Schmitt[1] and Mari Trix Estomata[1]
[1]Deutsche Gesellschaft für Internationale Zusammenarbeit, Philippines, [2]University of the Philippines Iloilo, Philippines, [3]University of the Philippines Cebu, Philippines

TuF3-5 14:30-14:45
Dynamic indoor space reconstruction using temporal point clouds
Riku Nozaki and Masafumi Nakagawa
Shibaura Institute of Technology, Japan

TuF3-6 14:45-15:00
A modified DRASTIC model in GIS for assessing groundwater vulnerability to nitrate contamination in Malolos City, Bulacan, Philippines
Riku Nozaki and Masafumi Nakagawa
University of the Philippines Diliman, Philippines

October 16 (Wednesday) / 09:00-10:30

Room A

Session Title	[WeA1] Remote Sensing for Regional Study 1
Session Chair	Prof. Wataru Takeuchi *(University of Tokyo, Japan)*
Date	October 16 (Wednesday)
Time	09:00-10:30

WeA1-1 09:00-09:15

Geological mapping in Morozumi Range and Helliwell Hills areas, Northern Victoria Land (NVL), Antarctica using remote sensing imagery

Amin Beiranvand Pour[1,2], Yongcheol Park[1], Jong Kuk Hong[1], Aidy M Muslim and Biswajeet Pradhan[3]

[1]Korea Polar Research Institute, Korea, [2]Universiti Malaysia Terengganu, Malaysia, [3]University of Technology Sydney, Australia

WeA1-2 09:15-09:30

Object-based land USE/LAND cover change detection using spatio - temporal images - a case study in Metropolitan City of Istanbul, Turkey

Taskin Kavzoglu, Elif Ozlem Yilmaz and Hasan Tonbul

Gebze Technical University, Turkey

WeA1-3 09:30-09:45

Analyzing spatial variability of soil properties using GIS-based geostatistical method for a cluster of five villages of Telangana State, India

Abhilash Maryada and T.Vijaya Lakshmi

JNTUH, India

WeA1-4 09:45-10:00

Debris flow susceptibility mapping and exposure assessment in Uttarakhand State, India

Rajitha Sachinthaka, Kavinda Gunasekara, Lakmal Deshapriya and Kuo CHieh Chao

Asian Institute of Technology, Thailand

WeA1-5 10:00-10:15

Land cover classification and change detection using landsat images and maximum likelihood classification: the case of Davao City, Southern Philippines (1996-2016)

Jesselle Lyn C. de Ramos and Joseph E. Acosta

University of the Philippines Mindanao, Philippines

WeA1-6 10:15-10:30

Geophysical changes detection by remote sensing in Alaminos river Pangasinan, Philippines

Annie Melinda Paz-Alberto, Edmark P. Bulaong, Ranilo B. Lao and Eleazar V. Raneses

Central Luzon State University, Philippines

Room B

Session Title	[WeB1] Remote Sensing of Hydrology and Water Resources 2
Session Chair	Dr. Tharapong Phetprayoon *(Nakhon Ratchasima Rajabhat University, Thailand)*
Date	October 16 (Wednesday)
Time	09:00-10:30

WeB1-1 09:00-09:15

An integrated geoinformatics techonology with hydrological model to impact assessment of land use change on runoff in the upper Lam Ta Khong watershed

Tharapong Phetprayoon

Nakhon Ratchasima Rajabhat University, Thailand

WeB1-2 09:15-09:30

Irrigation monitoring using remote sensing, GIS and hydrologic models in a NIA-UPRIIS turn-out service area during the 2018 dry season

Pristine E. Mabalot[1] and Enrico C. Paringit[2]

[1]Philippine Rice Research Institute, Philippines, [2]University of the Philippines, Philippines

WeB1-3 09:30-09:45

Drainage canal map detection of tropical peatlands over Indonesia by PALSAR-2 image

Daiki Shimizu, Wataru Takeuchi and Haemi Park

The University of Tokyo, Japan

WeB1-4 09:45-10:00

Review of urban water resilience in Java island, utilizing CHIRPS data modeling

Theresia Retno Wulan, Yosef Prihanto and Taufik Hidayatullah

Geospatial Information Agency (BIG) , Indonesia

WeB1-5 10:00-10:15

A study on the importance-based calculation of river facility maintenance cycle

Eung-Joon Lee, Seung-Wook Choi, Jang-Bae Lee and Hyeoung-Wook Choi

GEO C&I Co., Ltd, Korea

WeB1-6 10:15-10:30

Earth observations to monitor water budgets for river basin management: case study in Murray–Darling Basin

Kalum Priyanath Udagepola

Scientific Research Development Institute of Technology Australia, Australia

Room C

Session Title	[WeC1] Algorithms for Remote Sensing Application 1
Session Chair	Prof. Hoonyol Lee *(Kangwon National University, Korea)*
Date	October 16 (Wednesday)
Time	09:00-10:30

WeC1-1 09:00-09:15

Accounting for temporal information from dense time-series coarse-scale satellite data for spatio-temporal downscaling

Yeseul Kim and No-Wook Park

Inha University, Korea

WeC1-2 09:15-09:30

Study on extracting precipitation information using infrared bands of Himawari-8

Yuko Kishida, Keiji Imaoka, Hidenori Shingin and Kakuji Ogawara

Yamaguchi University, Japan

WeC1-3 09:30-09:45

Comparative analysis on interpolation methods for bathymetric data gaps

Joseph E. Acosta, Vicente Calag, Zarah Jean Diche, Christine Lou Lazaga, Trisha Mae Lopena, Daisuke Tatsuda and Gus Kali R. Oguis

University of the Philippines Mindanao, Philippines

WeC1-4 09:45-10:00

Anatomy of overlay analysis in examining vulnerability factors of flooded area in Bago region, Myanmar

Mu Mu Than[1], Khin Mar Yee[1], Kyi Lint[1], Tin Tin Mya[2] and Thidar Win[3]

[1]Dagon Univ, Myanmar, [2]Pathein Univ, Myanmar, [3]East Yangon Univ, Myanmar

WeC1-5 10:00-10:15

On the development an object-oriented tracking method for thunderstorms during summer monsoon season based on radar reflectivity over the middle of Thailand

Nattapon Mahavik, Sasithon Chatsudarat, Aphittha Yodying and Kamonchat Seejata

Naresuan University, Thailand

WeC1-6 10:15-10:30

Primary cloudbow retrieval of cloud droplet size distribution from POLDER

Huazhe Shang[1,2], Husi Letu[2], Jérôme Riedi[1], François-Marie Bréon[3]

[1]Univ. Lille, France, [2]Chinese Academy of Sciences, China, [3]Laboratoire des Sciences du Climat et de l'Environnement, France

Room D

Session Title	[WeD1] Remote Sensing for Disaster Management 6
Session Chair	Dr. Younghyun Cho *(K-water (Korea Water Resources Corporation), Korea)*
Date	October 16 (Wednesday)
Time	09:00-10:15

WeD1-1 09:00-09:15
Validating the agricultural drought impacts in the Philippines during the 2019 El Niño
Odette B. Enricuso, Gay Jane P. Perez, Raymond Jess G. Goliat, Harry Casimir E. Merida, Cara Patricia I. Canlas and Arlo Jayson C. Sabuito
University of the Philippines Diliman, Philippines

WeD1-2 09:15-09:30
Landslide susceptivbility modeling with frequency ratio, logistic regression, artificial neural network and the combination method
Van-Trung Chu, Shou-Hao Chiang and Than-Huang Lin
National Central University, China Taipei

WeD1-3 09:30-09:45
Tropical cyclone genesis detection using COMS data with machine learning approaches
Seongmun Sim and Jungho Im
Ulsan National Institute of Science and Technology, Korea

WeD1-4 09:45-10:00
Spectral simulation on remote sensing reflectance of petroleum-contaminated water body using hydrolight
Junjie Yang, Miaofen Huang, Weijian Luo, Yang Zhuang, Bingcai Chen and Zhonglin Wang
Guangdong Ocean University, China

WeD1-5 10:00-10:15
Analyzing the relationship between soil water triggering index and landslide frequency- a case study of Typhoon Morakot
Hung-Chu Ho and Shou-Hao Chiang
National Central University, China Taipei

Room E

Session Title	[WeE1] Machine Learning for Remote Sensing Applications 1
Session Chair	Prof. Chih-Da Wu *(National Cheng Kung University, China Taipei)*
Date	October 16 (Wednesday)
Time	09:00-10:30

WeE1-1 09:00-09:15
Image recognition applied to the Zhuoshui river basin runoff variations
Chia-Cheng Yeh[1,2], Yang-Lang Chang[2], Jin-Cheng Fu[1] and Chun-Mao Huang[1]
[1]National Science and Technology Center for Disaster Reduction, China Taipei, [2]National Taipei University of Technology, China Taipei

WeE1-2 09:15-09:30
Integration of self-organizing map and machine learning methods to extract shorelines from Landsat-8 images
Bulent Bayram[1] and Abdulkadir Ince[2]
[1]Yildiz Technical University, Turkey, [2]SolvoTek Engineering and IT Services, Turkey

WeE1-3 09:30-09:45
Updating cadastral maps using deep convolutional networks and hyperspectral imaging
Ah-Ram Song, Seula Park and Yong-Il Kim
Seoul National University, Korea

WeE1-4 09:45-10:00
Hyperspectral image classification using spectral LSTM networks
Simranjit Singh and Singara Singh Kasana
Thapar Institute of Engineering and Technology, India

WeE1-5 10:00-10:15
Genetic algorithm for Tsunami impacts on water mass variations
Maged Marghany
Geomatika University College, Malaysia

WeE1-6 10:15-10:30
Particle swarm optimization algorithm for automatic detection of internal wave of 2004 Tsunami
Maged Marghany
Geomatika University College, Malaysia

Room F

Session Title	[WeF1] GIS & GNSS 6
Session Chair	Prof. Anjin Chang *(Texas A&M University-Corpus Christi, United States of America)*
Date	October 16 (Wednesday)
Time	09:00-10:15

WeF1-1 09:00-09:15
Mapping of ground-level ozone distribution and determining suitable locations for monitoring stations in the national capital region, Philippines
Areanne Katrice K. Umali, Iris Anne M. Ventura and Edgardo G. Macatulad
University of the Philippines, Philippines

WeF1-2 09:15-09:30
The spatial relationship between weather and oncidium production
Hafsah Fatihul Ilmy, Pei-Fen Kuo and Tzu-En Huang
National Cheng Kung University, China Taipei

WeF1-3 09:30-09:45
Investigation and mapping the relationship between 4g signal strength and topography for different operators
Eyup Kaya, Sinasi Kaya and Dursun Zafer Seker
ITU, Turkey

WeF1-4 09:45-10:00
Automated land cover and elevation profiling using transect resource map
Melbert R. Bonotan and Rolyn C. Daguil
Caraga State University, Philippines

WeF1-5 10:00-10:15
Factor analysis and spatial pattern of convenience store in Nakhon Pathom, Thailand
Suriporn Charungthanakij[1], Intareeya Sutthivanich[2] and Udomvit Maneewan[2]
[1]Silpakorn University, Thailand, [2]Suranaree University of Technology, Thailand

October 16 (Wednesday) / 11:00-12:30

Room A

Session Title	[WeA2] Remote Sensing for Regional Study 2
Session Chair	Prof. Wataru Takeuchi *(University of Tokyo, Japan)*
Date	October 16 (Wednesday)
Time	11:00-12:30

WeA2-1 11:00-11:15
Cartometric mapping methods of village boundary in tegineneng sub-district, pasawaran regency, Lampung Province, Indonesia
Theresia Retno Wulan[1], Yosef Prihanto[1,2] and Taufik Hidayatullah[1]
[1]Geospatial Information Agency, Indonesia, [2]Universitas Indonesia, Indonesia

WeA2-2 11:15-11:30
Estimated location of yamatal country with remote sensing
Haruhiro Shiraish[1], Susumu Ogawa[2] and Yukiya Taniguchi[3]
[1]Fishery Agency, Japan, [2]Institute of Spatial Technology, Japan, [3]The University of Tokyo, Japan

WeA2-3 11:30-11:45
Utilization of sentinel satellite for vertical deformation monitoring in Semangko Fault-Indonesia
Atriyon Julzarika[1,2] and Harintaka[1]
[1]Universitas Gadjah Mada, Indonesia, [2]Indonesian National Institute of Aeronautics and Space, Indonesia

WeA2-4 11:45-12:00
Land suitability assessment for Poultry farms in Davao City using geographic information system (GIS) and Fuzzy Analytic Hierarchy Process (FAHP)
Ken Neth Marie Labra, Joseph Acosta, Leo Manuel Estaña and Maynard Usares
University of the Philippines Mindanao, Philippines

WeA2-5 12:00-12:15
The use of drone photogrammetry and Multi-criteria Decision Making (MCDM) to evaluate of dengue breeding area in Khon Kaen City, Thailand
Thatsalak Phongsuriyachay and Chattichai Waisurasingha
Khon Kaen University, Thailand

WeA2-6 12:15-12:30
Land use dynamics and landscape change pattern on the patch dry afromontane forest hydrology of Northern Ethiopia
Belay Manjur[1,2], Sungeun Cha[1] and Woo-Kyun Lee[1]
[1]Korea University, Korea, [2]Ethiopian Environment and Forest Research Institute, Korea

Room B

Session Title	[WeB2] Remote Sensing of Hydrology and Water Resources 3
Session Chair	Dr. Junhwa Chi *(Korea Polar Research Institute, Korea)*
Date	October 16 (Wednesday)
Time	11:00-12:30

WeB2-1 11:00-11:15
Geospatial analysis of land use change as affected by groundwater hydrology using SWAT-MODFLOW modeling
Carlos Pascual and Julius Jimenez
Mariano Marcos State University, Philippines

WeB2-2 11:15-11:30
Evaluation of SEBAL and metric based evapotransporation in arid region of Samail, Oman
Ahsan Ali and Yaseen Al-Mulla
Sultan Qaboos University, Oman

WeB2-3 11:30-11:45
Extent and cause of the shrinkage of Loktak Lake in Imphal Valley, NE India: insights from integrated remote sensing- and field-based investigations
Pradeep K Goswami and Alexander Singh Kshetrimayum
Kumaun University, India

WeB2-4 11:45-12:00
Systematic assessment of watershed geomorhology using digital terrain analysis for detecting gullies, riparian areasm and upland depressions
Joseph E. Acosta[1], Ace Niño B. Guieb and Gus Kali R. Oguis
[1]University of the Philippines Mindanao, Philippines

WeB2-5 12:00-12:15
Modelling of land use land cover dynamics for water yield using remotes sensing within a watershed
Babangida Ba iya[1,2] and Mazlan Hashim[1]
[1]Universiti Teknologi Malaysia, Malaysia, [2]Federal Polytechnic, Nigeria

WeB2-6 12:15-12:30
Feature extraction and analysis of river change detection based on remote sensing images
Yu-Chan Lee[1], Fang-Shii Ning[1] and Hao-Che Ho[2]
[1]National Chengchi University, China Taipei, [2]National Taiwan University, China Taipei

Room C

Session Title	[WeC2] Algorithms for Remote Sensing Application 2
Session Chair	Prof. Yongil Kim *(Seoul National University, Korea)*
Date	October 16 (Wednesday)
Time	11:00-12:15

WeC2-1 11:00-11:15
Determination of parameters for evergreen broadleaf forests in gross primary production capacity estimation algorithm
Aika Wakai, Rinako Yoshioka and Kanako Muramatsu
Nara Women's University, Japan

WeC2-2 11:15-11:30
A preliminary study on utilizing 3D vector terrain data for satellite visibility analysis in urban area
Ya-Hsuan Lu and Jen-Yu Han
National Taiwan University, China Taipei

WeC2-3 11:30-11:45
Hotspot analysis on marketing assessment of mobile phone shops within Dagon Myotit (North)
Kyi Lint[1], Khin Mar Yee[1], Mu Mu Than[1], May Myat Thu[1], Mar Lar Han[1] and Moe Thidar Htwe[2]
[1]Dagon University, Myanmar, [2]Yadanarpon University, Myanmar

WeC2-4 11:45-12:00
The distribution of supercooled water clouds from Himawari-8 measurements and optical properties of its particles
Ziming Wang[1,2], Husi Letu[1] and Huazhe Shang[1,3]
[1]Chinese Academy of Sciences, China, [2]University of Chinese Academy of Sciences, China, [3]Univ. Lille, France

WeC2-5 12:00-12:15
Adaptive change detection method with Bayesian approach for very-high resolution satellite images
Donna Monica
Indonesian National Institute of Aeronautics and Space, Indonesia

Room D

Session Title	[WeD2] Remote Sensing for Disaster Management 7
Session Chair	Prof. Chul-Soo Ye *(Far East University, Korea)*
Date	October 16 (Wednesday)
Time	11:00-12:15

WeD2-1 11:00-11:15
Offsetting the increase in soil erosion due to rising R-factors by decreasing C-factors of bare lands
Tse-Wei Lo and Walter Chen
National Taipei University of Technology, China Taipei

WeD2-2 11:15-11:30
Observing 2018 M_w 6.4 Hualien earthquake surface displacement with SBAS InSAR and GNSS
Chun-Kai Hung and Peter T.Y. Shih
National Chiao Tung University, China Taipei

WeD2-3 11:30-11:45
Development of decision-making tools for drought monitoring and early warning in Kyrgyzstan
Sugyeong Park, Sea Jin Kim, Eunbeen Park, Hangnan Yu, Sungeun Cha, Hyun-Woo Jo, Chul-Hee Lim, Halim Lee and Woo-Kyun Lee
Korea University, Korea

WeD2-4 11:45-12:00
Integration of multi-satellite indices for drought monitoring in diverse climate zone over East Asia
Bokyung Son[1], Sumin Park[1], Jungho Im[1,2], Seohui Park[3] and Yinghai Ke[3]
[1]Ulsan National Institute of Science and Technology (UNIST), Korea, [2]State University of New York College of Environmental Science and Forestry, USA, [3]Capital Normal University, China

WeD2-5 12:00-12:15
Spatiotemporal evaluation of historical drought in the Philippines
Michael Angelo P. Valete[1], Gay Jane P. Perez[1], Odette B. Enricuso[1] and Josefino C. Comiso[1,2]
[1]University of the Philippines Diliman, Philippines, [2]NASA Goddard Space Flight Center, United States

WeD2-6 12:15-12:30
Application of GPM imerg satellite-based precipitation products for flood runoff simulation in a DAM Watershed
Younghyun Cho, Joon-Woo Noh and Eul-Rae Lee
K-water Research Institute, Korea

Room E

Session Title	[WeE2] Machine Learning for Remote Sensing Applications 2
Session Chairs	Prof. Bulent Bayram *(Yildiz Technical University, Turkey)* Dr. Singara Singh *(Thapar Institute of Engineering and Technology, India)*
Date	October 16 (Wednesday)
Time	11:00-12:30

WeE2-1 11:00-11:15
A neural network-based land use regression model to estimate spatial-temporal variability of Nitrogen dioxide
Pei-Yi Wong[1], Chih-Da Wu[1,2] and Huey-Jen Su[1]
[1]National Cheng Kung University, China Taipei, [2]National Health Research Institutes, China Taipei

WeE2-2 11:15-11:30
Efficiency of different machine learning methods for shoreline extraction from UAV images
Bulent Bayram[1], Dursun Zafer Seker[2] and Burak Akpinar[1]
[1]Yildiz Technical University, Turkey, [2]Istanbul Technical University, Turkey

WeE2-3 11:30-11:45
Comparison of LUR-based and ANN-based $PM_{2.5}$ concentration estimation over Taipei metropolis
Dewinta Heriza, Chao-Hung Lin and Chih-Da Wu
National Cheng Kung University, China Taipei

WeE2-4 11:45-12:00
The application of machine learning algorithms to estimate forest canopy cover
Wim Ikbal Nursal, Felliks Tampinongkol, Sahid Hudjimartsu, Yudi Setiawan and Lilik Budi Prasetyo
IPB University, Indonesia

WeE2-5 12:00-12:15
Neural network for higher wind speed estimation from multi-parameter radar altimetry data
Syarawi Sharoni[1,2] and Mohd Nadzri Md Reba[1]
[1]Universiti Teknologi Malaysia, Malaysia, [2]Universiti Sains Malaysia, Malaysia

WeE2-6 12:15-12:30
Machine learning approaches to estimate chlorophyll-a concentration using GOCI satellite data
Hyun-Young Choi[1], Young-Jun Kim[1] and Jungho-Im[1,2]
[1]Ulsan National Institute of Science and Technology (UNIST), Korea, [2]State University of New York College of Environmental Science and Forestry, USA

Room F

Session Title	[WeF2] GIS & GNSS 7
Session Chairs	Prof. Pei-Fen Kuo *(National Cheng Kung University, China Taipei)* Dr. Sameer Saran *(IIRS ISRO, India)*
Date	October 16 (Wednesday)
Time	11:00-12:30

WeF2-1 11:00-11:15
Rapid acquisition and analysis of disaster information from social media
You-Rui Liu and Pai-Hui Hsu
National Taiwan University, China Taipei

WeF2-2 11:15-11:30
Time series analysis of groundwater levels using geographic information systems in Al Ain region, in the united information systems in Al Ain region, in the United Arab Emirates
A. Abuelgasim and M. Elkamali
United Arab Emirates University, UAE

WeF2-3 11:30-11:45
Twitter analytics for integrated research in biodiversity
Sameer Saran[1], Laksh Singla[2] and Priyanka Singh[1]
[1]ISRO, India, [2]Birla Institute of Technology and Science Pilani, India

WeF2-4 11:45-12:00
Participatory geographic information system (PGIS) for developed the online map of historical source in World War II, Pak Phraek Road Community, Kanchanaburi, Thailand
Komsan Sriboonruang, Narong Punkong and Malinee Kumkrua
Kanchanaburi Rajabhat University, Thailand

WeF2-5 12:00-12:15
Development of dengue outbreak monitoring system using GIS and mobile reporting
Junrie B. Matias and Jesterlyn Q. Timosan
Caraga State University, Philippines

WeF2-6 12:15-12:30
Spatial patterns identification of land prices using spatial cluster analysis methods for submarket allocation
Alfita Puspa Handayani, Albertus Deliar and Irawan Soemarto
Institut Teknologi Bandung, Indonesia

October 16 (Wednesday) / 13:30-15:00

Room A

Session Title	[WeA3] Platforms for Remote Sensing Applications 1
Session Chairs	Dr. Tao Sun *(Ministry of Water Resources, China)* Dr. Manzul Hazarika *(Geoinformatics Center, Thailand)*
Date	October 16 (Wednesday)
Time	13:30-15:00

WeA3-1 13:30-13:45
Framework design of information management and supervision platform on soil and water conservation
Tao Sun[1], Hui Li[1], Yu Zhao[2], Chang jun Liu[1], Zhe Dong[1] and Xia Zhang[1]
[1]China inst. of water resources and hydropower research, China, [2]Beijing Soil and Water Conservation Center, China

WeA3-2 13:45-14:00
Evaluating the accuracy of satellite derived bathymetry
Ratna Sari Dewi, Prayudha Hartanto, Yustisi Lumban-Gaol, Aldino Rizaldy, Ayu Nur Syafii, Nadya Oktaviani, Intan Pujawati, Nursugi, Ati Rahadiati and Sandi Aditya
Geospatial Information Agency, Indonesia

WeA3-3 14:00-14:15
Implementation of integrated geospatial platform, database, and applications for disaster risk management in Uttarakhand
Ashok Dahal, Pratichhya Sharma and Dr. Manzul Kumar Hazarika
Asian Institute of Technology, Thailand

WeA3-4 14:15-14:30
Designing the data infrastructure with macro and micro sensing for building disaster resilience
Masanori Muto and Naohiko Kohtake
Keio University, Japan

WeA3-5 14:30-14:45
Future benefits of micro satellite constellation images for railway
Claire NICODEME
SNCF, France

WeA3-6 14:45-15:00
Introducing: a layman's interpretation guide to Synthetic Aperture Radar (SAR) data
Ake Rosenqvist
solo Earth Observation, Japan

Room B

Session Title	[WeB3] Remote Sensing of Hydrology and Water Resources 4
Session Chair	Dr. Mu Than *(Dagon Univ, Myanmar)*
Date	October 16 (Wednesday)
Time	13:30-14:45

WeB3-1 13:30-13:45
Arsenic contamination in groundwater in Kyonpyaw area, Ayeyarwady region
Mu Mu Than, Khin Mar Yee, Kyi Lint, May Myat Thu and Malar Han
Dagon Univ, Myanmar

WeB3-2 13:45-14:00
Assessment of river diversion on water adequacy using GOOGLE EARTH ENGINE - A TSANGPO BRAHMAPUTRA RIVER case study
Guneet Mutreja[1], Abhra Singh[2] and Shailesh Deshpande[3]
[1]Tata Consultancy Services, India, [2]Department of Geography, India, [3]Tata Consultancy Services, India

WeB3-3 14:00-14:15
Comparison of geospatial technologies for monitoring and evaluation of irrigation networks
Mark Edwin Tupas, Mark Paulo Alcala, Mary Ann Calleja, Panji Brotoisworo and Alex John Escobido
University of the Philippines, Philippines

WeB3-4 14:15-14:30
A method for constructing reservoir area-storage-elevation curve using sentinel-1 radar remote sensing image
Nguyen Quoc Hiep[1], Nguyen Anh Hung[1], Do Hoai Nam[1], Hyeoung-Wook Choi[2] and Gi-Ho Kim[3]
[1]Ministry of Agriculture and Rural Development, Vietnam, [2]GEO C&I Co., Ltd, Korea, [3]Korea Water Resource Corporation, Korea

WeB3-5 14:30-14:45
Quantify the wandering river floodplain vegetation response to hydrogeomorphology in high-1 latitude arid regions using MODIS-NDVI time series
Xarapat Ablat[1,2], Gaohuan Liu[1], Qingsheng Liu[1] and Chong Huang[1]
[1]Chinese Academy of Sciences, [2]University of Chinese Academy of Sciences, China

Room C

Session Title	[WeC3] Algorithms for Remote Sensing Application 3
Session Chair	Dr. Dongseok Shin *(Satrec Initiative Co., Ltd, Korea)*
Date	October 16 (Wednesday)
Time	13:30-14:30

WeC3-1 13:30-13:45
Detecting building boundary using residual U-Net
Suhong Yoo, Jisang Lee, Junsu Bae and Honggyoo Sohn
Yonsei Univ, Korea

WeC3-2 13:45-14:00
A self-calibration method for terrestrial laser scan
Tengfei Zhou[1], Xiaojun Cheng[1] and Rui Shan[1,2]
[1]Tongji University, China, [2]China Geological Survey, China

WeC3-3 14:00-14:15
Retrieval of surface solar radiation from Himawari-8 measurements
Run Ma[1,2] and Husi Letu[1]
[1]Chinese Academy of Sciences, China, [2]University of Chinese Academy of Sciences, China

WeC3-4 14:15-14:30
Shoreline extraction using data mining technique: a case study at northeast coast of peninsular Malaysia
Syaifulnizam Abd Manaf, Norwati Mustapha, Md Nasir Sulaiman, Nor Azura Husin and Helmi Zulhaidi Mohd Shafri
Universiti Putra Malaysia, Malaysia

Room D

Session Title [WeD3] Remote Sensing for Disaster Management 8

Session Chair Prof. Hoonyol Lee *(Kangwon National University, Korea)*

Date October 16 (Wednesday)

Time 13:30-15:00

WeD3-1 13:30-13:45
GIS integrated system in developing a framework of methodological approach for disaster management in Malaysia
M.Zainora Asmawi[1], Zaini Nordin[2], Nor Shah Mohd Saad[2] and Megat Sahrir Zainal[3]
[1]International Islamic University Malaysia, Malaysia, [2]Integrated Geoplanning Sdn Bhd, Malaysia, [3]Environmental Planning Group Sdn Bhd, Malaysia

WeD3-2 13:45-14:00
Mapping and monitoring burned area/ vegetation clear-cut in Riau of Sumatra from time series fo Sentinel-1 data
Ping CHEN, Soo Chin LIEW and Leong Keong KWOH
National University of Singapore, Singapore

WeD3-3 14:00-14:15
Landslides detection from satellite imagery using a deep learning technique
Yung-ming Tsai and Kuo-Chen Chang
National Taiwan Normal University, China Taipei

WeD3-4 14:15-14:30
Development of LiDAR-based flood footprint map of October 2017 Zamboanga city flooding due to low pressure area
Isnailah S. Ontong, Julemer Ann G. Aying, Rowald Z. Baluyut, Emir V. Epino and Mario S. Rodriguez
Ateneo de Zamboanga University, Philippines

WeD3-5 14:30-14:45
Makasar flood area detection using Sentinel-1 GRD satellite image with use of change index and ESA-SNAP
Dadan Ramdani[1,2]
[1]Badan Informasi Geospasial (Geospatial information Agency), Indonesia, [2]Universitas Pakuan (Pakuan University), Indonesia

WeD3-6 14:45-15:00
Observation of surface subsidence by interferometric SAR time series analysis in Chiba Prefecture
Ryota Aoto, Keiji Imaoka, Hidenori Shingin and Kakuji Ogawara
Yamaguchi Univ, Japan

Room E

Session Title [WeE3] Special Issues 1

Session Chair Prof. Anjana Vyas *(CEPT University, India)*

Date October 16 (Wednesday)

Time 13:30-14:30

WeE3-1 13:30-13:45
Thailand youth innovation internship program: satellite telecommunication engineer
Warinthorn Kiadtikornthaweeyot[1], Natthawat Hongkarnjanakul[1], Thanchanok Khlongkhlaew[1], Prayat Puangjaktha[2] and Peerapong aramsoontornsuk[3]
[1]Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand, [2]Chiang mai University, Thailand, [3]Mahanakorn university of technology, Thailand

WeE3-2 13:45-14:00
Core processing for analysis ready data of KOMPSAT 3A image: absolute atmospheric correction
Kiwon Lee[3], Yongseung Kim[2], Kwangseob Kim[1] and Sun-Gu Lee[2]
[1]Hansung University, Korea, [2]Korea Aerospace Research Institute, Korea

WeE3-3 14:00-14:15
Unobtrusive mobile push technology in location broadcasting
Vicente A. Pitogo, Rolyn C. Daguil and Jesterlyn Q. Timosan
Caraga State University, Philippines

WeE3-4 14:15-14:30
Geovisualizations for adaptation strategy formulation at Western Mongolia
Balt Suvdantsetseg[1], Bolor Kherlenbayar[2], Myagmarsurem Altanbagana[2] and Khurel Nominbolor[3]
[1]Sustainable development institute for western region of Mongolia, Mongolia, [2]Institute of Geography and Geoecology, Mongolia, [3]Institute for Strategic Studies, Mongolia

October 16 (Wednesday) / 15:30-17:00

Room A

Session Title	[WeA4] Platforms for Remote Sensing Applications 2
Session Chair	Dr. Junhwa Chi *(Korea Polar Research Institute, Korea)*
Date	October 16 (Wednesday)
Time	15:30-16:45

WeA4-1 15:30-15:45
Demonstrating an operational workflow for crisis mapping based on satellite Imagery
Arnd Berns and Alexander Klaus
GAF AG, Germany

WeA4-2 15:45-16:00
Applications of remote sensing indices for property price estimation
Sihao Ge and Shih-Yuan Lin
NCCU, China Taipei

WeA4-3 16:00-16:15
Mapping of the potential sites for electric ferry operation using Geographic Information System (GIS) for green inter-island transport
Eleonor V. Palconit[1,2] and Michael Lochinvar S. Abundo[1,3]
[1]University of San Carlos, Philippines, [2]Ateneo de Davao University, Philippines, [3]Nanyang Technological University, Singapore

WeA4-4 16:15-16:30
Land evaluation mapping of sidrap wind power plant location using remote sensing and GIS
Yunus Isnaeni, Agnes Putri Devinta, Anwar Wahyudin, Atika Ratnaningsih, Rakhmat Dwi Putra, Wedha Ratu Della, Wirastuti Widyatmanti, Sudaryatno and Retnadi Heru Jatmiko
Universitas Gadjah Mada, Indonesia

WeA4-5 16:30-16:45
Control of settlements in unsuitable lands: with special reference to Ratnapura District
Sandhya Bambarand
Urban Development Authority, Sri lanka

Room B

Session Title	[WeB4] Remote Sensing for Urban and Regional Planning 1
Session Chairs	Prof. Zulkiflee Abd Latif *(Universiti Teknologi MARA, Malaysia)* Dr. Moung Jin Lee *(Korea Environment Institute, Korea)*
Date	October 16 (Wednesday)
Time	15:30-17:00

WeB4-1 15:30-15:45
Land use mapping and monitoring in Lamchiengkrai watershed using remote sensing data, Nakhon Ratchasima, Thailand
Intareeya Sutthivanich[1], Sasikarn Plaiklang[2], Udomvit Maneewan[1], Suriporn Charungthanakij[3] and Songporn Pramam[2]
[1]Suranaree University of Technology,Thailand, [2]Rambhaibarni Rajabhat University, Thailand, [3]Silpakorn University, Thailand

WeB4-2 15:45-16:00
Land use and land cover change detection for urban sprawl analysis of Mumbai Metropolitan Region (MMR)
Varsha Bhosale and Archana Patankar
University of Mumbai, India

WeB4-3 16:00-16:15
The relation of land surface temperature and vegetation indices based on Landsat imagery
Rika Hernawati and Soni Darmawan
Institut Teknologi Nasional, Indonesia

WeB4-4 16:15-16:30
Urban growth assessment and its impact on deforestation at national botanical park, Malaysia using remote sensing and GIS techniques
Nurul Ain Mohd Darus and Zulkiflee Abd Latif
Universiti Teknologi MARA (UiTM), MALAYSIA

WeB4-5 16:30-16:45
Evaluating impervious area in north-west Delhi
Mandvi Misra[1], Deepak Kumar[1] and Sulochana Shekhar[2]
[1]AMITY University, India, [2]Central University of Tamil Nadu, India

WeB4-6 16:45-17:00
Analysis of spatial-temporal data for urban land use changes in municipality of Nakhonratchsima City, Thailand
Yaowaret Jantakat[1], Sasikarn Plaiklang[1] and Worapon Arree[1]
[1]RBRU Univ, Thailand, [2]RMUTI Univ, Thailand

Room C

Session Title	[WeC4] Algorithms for Remote Sensing Application 4
Session Chair	Dr. Dongseok Shin *(SaTReC Initiative, Korea)*
Date	October 16 (Wednesday)
Time	15:30-16:45

WeC4-1 15:30-15:45
Nonlinear relative radiometric normalization for Landsat 7 and Landsat 8 imagery
Lino Garda Denaro and Chao Hung Lin
National Cheng Kung University, China Taipei

WeC4-2 15:45-16:00
The efficiency of GSD normalization for object detection in aerial images
Taegoo Kim, Ildoo Kim, Jonghyuck Park and Jihoon Lee
Kakao Brain, Korea

WeC4-3 16:00-16:15
Preliminary tests on non-metric camera self-calibration by using wavelet additional parameters
Jun-Fu Ye and Jaan-Rong Tsay
National Cheng Kung University, China Taipei

WeC4-4 16:15-16:30
Massive point cloud processing on Hadoop: challenges and proposed solution
Minh Hieu Nguyen, Sanghyun Yoon, Sangyoon Park and Joon Heo
Yonsei University, Korea

WeC4-5 16:30-16:45
Classification of LiDAR point cloud using machine learning classifier approach
Mochamad Irwan Hariyono and Aldino Rizaldy
Geospatial Information Agency, Indonesia

Room D

Session Title	[WeD4] Remote Sensing of Climate Change 1
Session Chairs	Dr. Seonyoung Park *(Korea Aerospace Research Institute(KARI), Korea)* Prof. Minha Choi *(Sungkyunkwan University, Korea)*
Date	October 16 (Wednesday)
Time	15:30-16:45

WeD4-1 15:30-15:45
Impact assessment of surface dryness and snow cover on wildfires in Far East Russia
Haemi Park and Wataru Takeuchi
The University of Tokyo, Japan

WeD4-2 15:45-16:00
Assessing length of growing period as an indicator of climate change
Ragunath Kaliaperumal, Pazhanivelan Sellaperumal and Kumaraperumal Ramalingam
Tamilnadu Agricultural University, India

WeD4-3 16:00-16:15
Spatio-temporal assessment of monthly GPM and TRMM: A preliminary study in coastal and inland at Sabah and Sarawak, Malaysia
Muhammad Izuan Nadzri[1], Aidy M Muslim[1], Mohammad Shawkat Hossain[1], Mou Leong Tan[2] and Mohd Sofiyan Sulaiman[1]
[1]Universiti Malaysia Terengganu, Malaysia, [2]Universiti Sains Malaysia, Malaysia

WeD4-4 16:15-16:30
Climate change and its impact on Glaciers in Hindu Kush region: a case study of Yarkhun Valley, Chitral Pakistan
Alamgeer Hussain[1], Jay Sagin[2], Aigul Bekbayeva[3] and Muhammad Abid[4]
[1]Directorate of Education Gilgit-Baltistan, Pakistan, [2]Nazarbayev University, Kazakhstan, [3]S. Seifullin Kazakh Agro Technical University, Kazakhstan, [4]COMSATS University Islamabad, Pakistan

WeD4-5 16:30-16:45
MODTRAN-based retrieval of aerosol optical thickness over Chiba area from Himawari-8/AHI visible images
Zixuan Xue, Nofel Lagrosas and Hiroaki Kuze
Chiba University, Japan

Room E

Session Title	[WeE4] Special Issues 2
Session Chair	Prof. Mazlan Hashim *(Universiti Teknologi Malaysia, Malaysia)*
Date	October 16 (Wednesday)
Time	15:30-17:00

WeE4-1 15:30-15:45
Harnessing earth observation system for fast-realizing Sustainable Development Goal (SDG) on clean water and sanitation
Mazlan Hashim, Mohd Rizaludin Mahmud, Mohd Nadzri Reba and Nurul Nadia Yahya
Universiti Teknologi Malaysia, Malaysia

WeE4-2 15:45-16:00
Temporal and spatial analysis of criminal path of different types of serial sexual offenders
Hsu-Hsien Chen[1], Pei-Fen Kuo[1] and Sheng-Ang Shen[2]
[1]National Cheng Kung University, China Taipei, [2]Central Police University, China Taipei

WeE4-3 16:00-16:15
SAR2MAP : SAR to Map Image transfer with conditional generative adversarial networks
Mustafa Yagmur, Kento Doi and Akira Iwasaki
the University of Tokyo, Japan

WeE4-4 16:15-16:30
Digital data classification and extraction for records management of paps and child documents using tesseract OCR
Jennifer E. Sabugaa and Glenn S. Lahayon
Caraga State University, Philippines

WeE4-5 16:30-16:45
Evaluation and assessment of solar energy over water bodies of Uttarakhand
Mudit Kapoor, Rahul Dev Garg, Yashika Chaudhary and Ashish Kumar
Indian Institute of Technology, India

WeE4-6 16:45-17:00
Design and development of web-based pharmacy finder
Jenie L. Plender, Donna May C. Lozada and Trician Faye D. Gozon
Caraga State University, Philippines

October 17 (Thursday) / 09:00-10:30

Room A

Session Title	[ThA1] Algorithms for Remote Sensing Application 5
Session Chair	Dr. Duong Nguyen *(INSTITUTE OF GEOGRAPHY, VIET NAM ACADEMY OF SCIENCE AND TECHNOLOGY, Viet Nam)*
Date	October 17 (Thursday)
Time	09:00-10:30

ThA1-1 09:00-09:15
Monitoring of 3-D land subsidence integrating PSI AND GPS data by WLS
Takaya Kusakabe[1], Junichi Susaki[1] and Takuma Anahara[2]
[1]Kyoto University, Japan, [2]Japan Aerospace Exploration Agency, Japan

ThA1-2 09:15-09:30
Creation of algorithms for the automated constructing relief maps based on remote sensing data for a various morphostructural complexes of the russian federation
Olga V. Artemeva, Natalia A. Pozdnyakova, Tatiana A. Andreeva, Sergei V. Tyurin and Nicolay D. Vasilev
Saint-Petersburg State University, Russian Federation

ThA1-3 09:30-09:45
Assessment of interferometric SAR-based digital elevation models
Yen-Yi Wu[1,2], Shih-Yuan Lin[2] and Hsuan Ren[1]
[1]National Central University, China Taipei, [2]National Chengchi University, China Taipei

ThA1-4 09:45-10:00
Assessing the optic and non-optic remote sensing data; a validation of soil wetness approach
Dewayany Sutrisno, Mulyanto darmawan and Ati Rahadiati
Badan Informasi Geospasial, Indonesia

ThA1-5 10:00-10:15
Determination of land cover change by multi-temporal radar imagery
Tran Van Anh[1], Le Minh Hang[2] and Nguyen Dinh Duong[3]
[1]Hanoi University of Mining and Geology, Vietnam, [2]Le Quy Don Technical University, Vietnam, [3]Vietnam Academy of Science and Technology, Vietnam

ThA1-6 10:15-10:30
Monitoring the sugarcane phenology through time series of sentinel-2 in the Northeastern of Thailand
Asamaporn Sitthi[1], Chudech Losiri[1], Sarawut Ninsawat[2] and Vorraveerukorn Veerachitt[3]
[1]Srinakharinwirot University, Thailand, [2]Asian Institute of Technology, Thailand, [3]Mitr Phol Sugarcane Research Center Co., Thailand

Room B

Session Title	[ThB1] Remote Sensing for Urban and Regional Planning 2
Session Chair	Prof. SEONG-WOO JEON *(Korea University, Korea)*
Date	October 17 (Thursday)
Time	09:00-10:30

ThB1-1 09:00-09:15
Feasibility of exploitation of 3D city model created from LIDAR data and aerial images in applications focusing on chaophraya river basin and the area of the eastern economic corridor (EEC) of Thailand
Nobphadon Suksangpanya and Chisaphat Supunyachotsakul
King Mongkut's Institute of Technology Ladkrabang, Thailand

ThB1-2 09:15-09:30
Impact of urbanization on land surface temperature using deep learning approach
Manikandan Sathianarayanan and Dr, Pai-Hui Hsu
National Taiwan University, China Taipei

ThB1-3 09:30-09:45
Assessment of the relationship between the rainfall and the land surface temperature using the multi-temporal landsat satellite images acquired in Seoul
Yun-Jae Choung[1], Dae-Ik Kang[1], Hye-Ji Park[1] and Myung-Hee Jo[2]
[1]GEO C&I Co., Ltd, Korea, [2]Kyungpook National University, Korea

ThB1-4 09:45-10:00
Spatio-temporal growth pattern analysis and urban simulation in colombo city using open source software tools - application of futures simulation model
Pavithra Jayasinghe, Venkatesh Raghavan, Niroshan Sanjaya and Go Yonezawa
Osaka City University, Japan

ThB1-5 10:00-10:15
Control of settlements in unsuitable lands: with special reference to Ratnapura district
Sandhya Bambarand
Urban Development Authority, Sri lanka

ThB1-6 10:15-10:30
Volume computation of municipal landfill - comparing GNSS and UAV
Petr Šádek and Juraj Struhár
VSB, Czechia

Room C

Session Title	[ThC1] Machine Learning for Remote Sensing Applications 3
Session Chair	Prof. Youkyung Han *(Kyungpook National University, Korea)*
Date	October 17 (Thursday)
Time	09:00-10:30

ThC1-1 09:00-09:15
Chlorophyll-a concentration retrieval using convolutional neural networks in Laguna Lake, Philippines
Muhammad Aldila Syariz[1], Chao-Hung Lin[1], Manh Van Nguyen[1,4], Lalu Muhamad Jaelani[2] and Ariel C. Blanco[3]
[1]National Cheng Kung University, China Taipei, [2]Institut Teknologi Sepuluh Nopember, Indonesia, [3]University of the Philippines, Philippines, [4]Vietnam Academy of Science and Technology, Vietnam

ThC1-2 09:15-09:30
Using fully convolutional networks and pléiades satellite imagery with pre-trained VGG-19 model to detect impervious surface in farmland
Wei Li and Chi-Kuei Wang
National Cheng Kung Univ., China Taipei

ThC1-3 09:30-09:45
Mangroves change detection using support vector machine algorithm on google earth engine (a case study in part of gulf of bone, South Sulawesi, Indonesia)
William Krista Mahendra, Ilham Jamaluddin and Muhammad Kamal
Universitas Gadjah Mada, Indonesia

ThC1-4 09:45-10:00
3D scene reconstruction from multi-view stereo images using machine learning
Ya-Chu Tsao and Pai-Hui Hsu
Nat. Taiwan Univ., China Taipei

ThC1-5 10:00-10:15
Different deep learning approaches for single class-labeling: ship-detection application
Saziye Ozge Donmez, Dursun Zafer Seker and Cengizhan Ipbüker
Istanbul Technical University, Turkey

ThC1-6 10:15-10:30
Deep learning based tropical cyclone intensity monitoring and forecasting
Juhyun Lee, Cheolhee Yoo, Dongjin Cho, Kyoungmin Kim and Jungho Im
Ulsan National Institute of Science and Technology, Korea

Room D

Session Title	[ThD1] Remote Sensing of Climate Change 2
Session Chair	Dr. Akira Hirano *(JIRCAS, Japan)*
Date	October 17 (Thursday)
Time	09:00-10:30

ThD1-1 09:00-09:15
Suspended sediment dynamics in the chi-mun river basin, THAILAND: impact of climate change and anthropogenic activities
Khruewan Champangern[1], Witchayada Prasertsri[2] and Tiwakorn Wuttipan[2]
Nattaporn Soontorn[2], Patiwet Chalermpong[1] and Tanita Suepa[1]
[1]Geo-Informatics and Space Technology Development Agency, Thailand, [2]The Univ. of Burapha, Thailand

ThD1-2 09:15-09:30
Assessment of flowering pattern using climatic remote sensing data in peninsular Malaysia
Mohamad Hanif Bin Abdullah and Noordyana Binti Hassan
Universiti Teknologi Malaysia, Malaysia

ThD1-3 09:30-09:45
On the applicability of satellite-based rainfall estimates for the determination of monsoon onset date: case study in the Ayeyarwady delta, Myanmar
Akira Hirano[1], Swe Swe Mar[2], May Toe Aung Myint[3] and Hla Moe Khaing[2]
[1]Japan International Research Center for Agricultural Sciences, Japan, [2]The Univ. of Yezin Agricultural, Myanmar, [3]Department of Agriculture Labutta Office, Myanmar

ThD1-4 09:45-10:00
Assessment of pastureland vulnerability on socio-economy of local communities using RS and GIS
B.Kherlenbayar[1,2], B.Suvdantsetseg[2,3], M.Altanbagana[1,2] and Kh.Nominbolor[4]
[1]Institute of Geography and Geoecology, Mongolia, [2]Sustainable development Institute for western region of Mongolia, Mongolia, [3]Mongolian Academy of Sciences, Mongolia, [4]Institute for Strategic Studies, Mongolia

ThD1-5 10:00-10:15
Rainfall pattern assessment from global climate models based on satellite-derived estimates over the indian region
Sudip Kumar Kundu[1], Charu Singh[2]
[1]Indian Institute of Science, India, [2]Indian Institute of Remote Sensing, India

ThD1-6 10:15-10:30
Assessment of modis land surface temperature data against ground meteorological data for the west coast of peninsular Malaysia
Nurul Iman Saiful Bahari, Farrah Melissa Muharam, Zed Zulkafli, Norida Mazlan, Nor Azura Husin
The Univ. of Putra Malaysia, Malaysia

Room E

Session Title	[ThE1] LIDAR Data Processing 1
Session Chairs	Prof. Taejung Kim *(Inha University, Korea)* Prof. Tee-Ann Teo *(National Chiao Ting University, China Taipei)*
Date	October 17 (Thursday)
Time	09:00-10:30

ThE1-1 09:00-09:15
Canopy cover estimation based on support vector regression derived from LiDAR & landsat 8 OLI
Sahid Hudjimartsu[1,2], Felliks Tampinongkol[1], Yoga Rudianto[1], Yudi Setiawan[1], Lilik Budi Prasetyo[1]
[1]The Univ. of Bogor, Indonesia, [2]The Univ. of Ibn Khaldun, Indonesia

ThE1-2 09:15-09:30
Laser ranging correction under mixed pixels effect
Chia-Mien Chang and Jen-Jer Jaw
National Taiwan University, China Taipei

ThE1-3 09:30-09:45
LiDAR spatial resolution interpolation using color similarity of optical image for road surface surveying
Parawata Thanakitivirul, Sompong Liangrocapart, Suphongsa Khetkeeree and Chapkit Chansamorn
The Univ. of Mahanakorn, Thailand

ThE1-4 09:45-10:00
Classification of LiDAR point clouds based on the 2d cells
Kottage Saumya Denuwan Jayasundara[1], Sanka Perera[2] and Nalani Perera[2]
[1]Bernard Soysa Mawatha, Sri Lanka, [2]The Univ. of Sabaragamuwa, Sri Lanka

ThE1-5 10:00-10:15
Automated road centerlines extraction for high-definition map using mobile LiDAR system
Shao-Wei Huanga and Tee-Ann Teob
The Univ. of National Chiao Tung, China Taipei

ThE1-6 10:15-10:30
H2020 EOPEN easing copernicus data & service exploitation
Leslie Gale[1], Bernard Valentin[1], Hakim Boulahya[1], Guido Vingione[2], Gabriella Scarpino[2], Laurence Marzell[2], Tudor Pettengell[2], Ilias Gialampoukidis[3], Stelios Andreadis[3], Stefanos Vrochidis[3], Ioannis Kompatsiaris[3], Dennis Hoppe[4], Li Zhong[4], Michele Ferri[5], Daniele Norbiato[5], Francesco Zaffanella[5], Ari Karppinen[6], Jani Tyynela[6], Petteri Karsisto[6], Haris Kontoes[7], Ioannis Papoutsis[7], Vasileios Sitokonstantinou[7], Thanassis Drivas[7], Hyun-Woo Jo[8] and Hoonjoo Yoon[9]
[1]Space Applications Services, Belgium, [2]Serco S.p.A, Italy, [3]Information Technologies Institute, Greece, [4]Universität Stuttgart, Germany, [5]Autorità di Bacino Distrettuale delle Alpi Orientali, Italy, [6]Finnish Meteorological Institute, Finland, [7]Institute for Astronomy & Astrophysics, Greece, [8]Korea University Environmental GIS/RS Center, Korea, [9]Sundosoft, Ltd, Korea

Room F

Session Title	[ThF1] GIS & GNSS 8
Session Chair	Prof. Chih-Yuan Huang *(National Central University, China Taipei)*
Date	October 17 (Thursday)
Time	09:00-10:30

ThF1-1 09:00-09:15
Developing a geo-app for road accident emergency response: supporting the UN SDG 3
Adebisi Naheem Idowu and Abdul-Lateef Balogun
The Univ. of Teknologi PETRONAS, Malaysia

ThF1-2 09:15-09:30
Tsunami shelter location allocation by applying a heuristic algorithm to residential and floating population data
Junsu Bae[1], Hong-Gyoo Sohn[1], Joon Heo[1], Sangkyun Kim[1] and Mi-Kyeong Kim[2]
[1]The Univ. of Yonsei, Korea, [2]Agency for Defense Development, Korea

ThF1-3 09:30-09:45
GIS based documentation of the monumental tree inventory in Istanbul
Abdulkadir Baytimur and Dursun Zafer Seker
ITU, Turkey

ThF1-4 09:45-10:00
A web GIS-based visualization and analytical platform for near-real time flood characterization, forecasting and impact assessment
Jojene R. Santillan, Edsel Matt O. Morales, Meriam Makinano-Santillan, Arthur M. Amora, Jennifer T. Marqueso and Amor L. Gingo
The Univ. of Caraga State, Philippines

ThF1-5 10:00-10:15
Validation using national land numerical information on the flood rate estimated by microwave radiometer
Yukiya Taniguchi
The Univ. of Tokyo, Japan

ThF1-6 10:15-10:30
Importance of sound wave and GIS during disaster or emergency
Rajendra N. Gaikwad and M. P. Oza
Space Applications Centre, India

October 17 (Thursday) / 11:00-12:30

Room A

Session Title	[ThA2] Algorithms for Remote Sensing Application 6
Session Chairs	Prof. Chul-Soo Ye *(Far East University, Korea)* Prof. Dewayany Sutrisno *(Badan Informasi Geospasial, Indonesia)*
Date	October 17 (Thursday)
Time	11:00-12:30

ThA2-1 11:00-11:15
Geometric correction and soil volume estimation in debris flow areas using LiDAR data
Po-Jui Huang[1,2], Min-Lung Cheng[1], Masashi Matsuoka[1] and Hiroyuki Miura[3]
[1]Tokyo Institute of Technology, Japan, [2]National Central University, China Taipei, [3]Hiroshima University, Japan

ThA2-2 11:15-11:30
Comparative analysis of extraction accuracy of fire detection algorithms in Northern of China
Guohong Li, Chang Guo, Ke Liu, Yuanping Liu and Yujing Wang
North China Institute of Aerospace Engineering, China

ThA2-3 11:30-11:45
Object based hyperspectral image analysis for cadastral mapping
Kangjoon Cho, Yongil Kim and Taehong Kwak
Seoul National Univ., Korea

ThA2-4 11:45-12:00
Shadow based new remote sensing metrics for moso bamboo biomass prediction using unmanned aerial vehicle photogrammetric data
Yi-ta Hsieh, Yang-bo Deng, Regassa Terefe Urga, Ji-an Liu and Kun-yong Yu
Fujian Agriculture and Forestry University, China

ThA2-5 12:00-12:15
Spectral analysis of flaming and non-flaming infrared emitters with nighttime VIIRS data: preliminary results
Christopher D. Elvidge[1], Mikhail Zhizhin[2], Kimberly Baugh[2], Feng Chi Hsu[2] and Tilottama Ghosh[2]
[1]Colorado School of Mines, USA, [2]University of Colorado, USA

ThA2-6 12:15-12:30
Texture based identification of informal settlements in curvelet and contourlet feature space
Rizwan Ahmed Ansari[1] and Krishna Mohan Buddhiraju[2]
[1]Veermata Jijabai Technological Institute, India, [2]Indian Institute of Technology Bombay, India

Room B

Session Title	[ThB2] Remote Sensing for Urban and Regional Planning 3
Session Chairs	Dr. Bhuwneshwar Sah *(PASCO CORPORATION, Japan)* Prof. Chao-Hung Lin *(National Cheng-Kung University, China Taipei)*
Date	October 17 (Thursday)
Time	11:00-12:45

ThB2-1 11:00-11:15
Use of UAV and GIS for infrastructure management in Cambodia
Bhuwneshwar Prasad Sah[1], James Kazumori Watson[1], Samnang Chea[2] and Takayuki Tsuchida[3]
[1]PASCO CORPORATION, Japan, [2]Ministry of Public Works and Transportation, Cambodia, [3]CTI Engineering International Co., Ltd., Japan

ThB2-2 11:15-11:30
Patch-based land cover change detection using multitemporal and multivariate alteration detection of optical satellite imagery
Bo-Yi Lin and Chao-Hung Lin
National Cheng-Kung University, China Taipei

ThB2-3 11:30-11:45
The assessment of walkability index in urban area using remote sensing data: a case study of Padang city
Muhammad Zayyanul Afwani, Rezki Amelia C, Sabrina Tami, Athaya Atsir F, A.M.C Widhiasta Bramono, Ibnu Hasyim P and Prima Widayani
Universitas Gadjah Mada, Indonesia

ThB2-4 11:45-12:00
Trend analysis of urban heat island intensity according to urban area change in Asian Mega Cities
Kyungil Lee, Yoonji Kim, Hyun Chan Sung, Raeik Jang, Jieun Ryu and Seong-Woo Jeon
Korea University, Korea

ThB2-5 12:00-12:15
The study of heat island and its relation with urbanization in Gurugram, Delhi NCR for the period of 1989 to 2018
Satyam Kushwaha and Nithiyanandam Y
TERI School of Advanced Studies, India

ThB2-6 12:15-12:30
Detecting urban land cover changes using neighborhood-scale classification in Cebu City, Central Philippines using landsat Imagery
Ejares, Jay A and delos Santos, Carolyn Y
University of the Philippines, Philippines

ThB2-7 12:30-12:45
Studying the impacts of urbanization on wetland degradation in Colombo flood detention area using GIS/RS techniques
R.G.I. Madhuwanthi[1], C.H. Edussuriya[2] and Niranga Alahacoon[3]
[1]University of Colombo, Sri Lanka, [2]Central Environmental Authority, Sri Lanka, [3]International Water Management Institute, Sri Lanka

Room C

Session Title	[ThC2] Machine Learning for Remote Sensing Applications 4
Session Chairs	Prof. No-Wook Park *(INHA University, Korea)* Prof. TASKIN KAVZOGLU *(Gebze Technical University, Turkey)*
Date	October 17 (Thursday)
Time	11:00-12:15

ThC2-1 11:00-11:15
Agricultural crop type mapping using object-based image analysis with advanced ensemble learning algorithms
Taskin Kavzoglu, Ismail Colkesen and Hasan Tonbul
Gebze Technical University, Turkey

ThC2-2 11:15-11:30
Automatic discriminative feature extraction using convolutional neural network for remote sensing image classification
Akhtar Jamil[1] and Bulent Bayram[2]
[1]Istanbul Sabahattin Zaim University, Turkey, [2]Yildiz Technical University, Turkey

ThC2-3 11:30-11:45
Comparison of google earth engine (GEE)-based machine learning classifiers for mangrove mapping
Muhammad Kamal, Ilham Jamaluddin, Artha Parela and Nur Mohammad Farda
Universitas Gadjah Mada, Indonesia

ThC2-4 11:45-12:00
Deep learning based pansharpening using a laplacian pyramid
Doyoung Jeong and Yongil Kim
Seoul National Univ., Korea

ThC2-5 12:00-12:15
Building footprint extraction from very high resolution satellite images: a comparison of object-based image analysis and deep reinforcement convolutional neural networks
Rudolph Joshua Candare, Rolyn Daguil and Jaymer Jayoma
Caraga State University, Philippines

Room D

Session Title	[ThD2] Remote Sensing of Marine & Coastal Region 1
Session Chairs	Dr. Jae-In Kim *(Korea Polar Research Institute, Korea)* Prof. Sendo Wang *(National Taiwan Normal University, China Taipei)*
Date	October 17 (Thursday)
Time	11:00-12:45

ThD2-1 11:00-11:15
30 Years national scale seagrass mapping in vietnam with landsat and sentinel imagery on google earth engine
Xuan Truong Trinh and Wataru Takeuchi
The Univ. of Tokyo, Japan

ThD2-2 11:15-11:30
Wave based approach to coastal bathymetry- case studies of coastal regions in India
Ankita Misra[1], Balaji Ramakrishnan[1] and Amit More[2]
[1]Indian Institute of Technology, India, [2]Honda R&D Co Ltd., Japan

ThD2-3 11:30-11:45
Spatial and seasonal analysis of surface wave dynamics on the coastal region using sentinel-1 SAR
Fabian Surya Pramudya[1,3], Jiayi Pan[1,2] and Adam Thomas Devlin[1,2]
[1]The Univ. of Hong Kong, China, [2]The Univ. of Jiangxi Normal, China, [3]Center for Remote Sensing, Indonesia

ThD2-4 11:45-12:00
A study on the estimation of farmed marine product output using aerial images - a case study on Busan laver farming -
Gyeong-Min Kang[1], Hye-Ji Park[1], Myung-Hee Jo[2]
[1]Institute of Spatial Information Technology Research, Korea, [2]The Univ. of Kyungpook National, Korea

ThD2-5 12:00-12:15
Fish farming activities and spatial distribution in sungai siput, perak using geographic information system (GIS) and remote sensing
Eleanor Daniella bt Lokman[1], Dato' Adnan bin Hussain[1], Pang AK Nyukang[1], Mohamad Nazri Puasa[1], Rosliadi Rahim[1], Mckreddy Yaban[2], Maizatuldura[2], Suhaida Aini[2]
[1]Ministry of Agriculture and Agro-Based Industry, Malaysia, [2]Malaysian Remote Sensing Agency, Malaysia

ThD2-6 12:15-12:30
Integration of satellite-based environmental data for skipjack tuna fishing ground determination
Adillah Alfatinah and Hone-Jay Chu
The Univ. of Cheng Kung, China Taipei

ThD2-7 12:30-12:45
Use of geographic information system (GIS) on sungai siput, perak's ornamental fish farmers activities and off-farm employment
Eleanor Daniella bt Lokman, Dato' Adnan bin Hussain, Mohamad Nazri Puasa, Rosliadi Rahim, Ong See Ling, Siti Hasshura Hashim, Azaharie bin Anuar, Nurul Nassita bt Lias
Ministry of Agriculture and Agro-Based Industry, Malaysia

Room E

Session Title	[ThE2] LIDAR Data Processing 2
Session Chair	Prof. Jen-Jer Jaw *(National Taiwan University, China Taipei)*
Date	October 17 (Thursday)
Time	11:00-12:30

ThE2-1 11:00-11:15
Point clouds over tetiaroa - 3d modeling of a tropical island by topo-bathymetric LiDAR
Serkan Ural[1], Armin Gruen[1] and Sultan Kocaman[2]
[1]Institute for Theoretical Physics, Switzerland, [2]The Univ. of Hacettepe, Turkey

ThE2-2 11:15-11:30
Multispectral airborne LiDAR intensity data: from correction to classication
Wai Yeung Yan
The Univ. of Hong Kong Polytechnic, Hong Kong

ThE2-3 11:30-11:45
Low-cost LiDAR application on unmanned aerial vehicle for road surface survey: feasibility study
Chapkit Chansamorn, Parawata Thanakitivirul, Sompong Liangrocapart and Suphongsa Khetkeeree
The Univ. of Mahanakorn, Thailand

ThE2-4 11:45-12:00
Simulation program for generating 3D LiDAR data using a velodyne mobile laser scanning system (HDL-32E)
Essam Hassan Hamza
The Univ. of Military Technical, Egypt

ThE2-5 12:00-12:15
Development of a system aiding designing and planning on airborne and mobile LiDAR data acquisition process
Chisaphat Supunyachotsakul and Nobphadon Suksangpanya
King Mongkut's Institute of Technology Ladkrabang, Thailand

ThE2-6 12:15-12:30
The comparison of cloth simulation and progressive tin densification filters to support semantic segmentation of airborne LiDAR data
Fahrul Hidayat, Mochamad Irwan Hariyono, Tia Rizka Nuzula Rachma and Danang Budi Susetyo
Indonesian Geospatial Information Agency, Indonesia

Room F

Session Title	[ThF2] GIS & GNSS 9
Session Chair	Prof. Dursun Zafer Seker *(Istanbul Technical University, Turkey)*
Date	October 17 (Thursday)
Time	11:00-12:30

ThF2-1 11:00-11:15
A personalized GeoWeb search engine based on user intent recognition
Regita Pramesti Nur Cahyani and Chih-Yuan Huang
The Univ. of National Central, China Taipei

ThF2-2 11:15-11:30
Implementing GIS for air navigation aids infrastructure optimization
Piyaparn Khasuwan[1], Kittisak Phaebua[2], Supatcha Chaimatanan[1] and Akkarat Boonpoonga[3]
[1]Geo-Informatics and Space Technology Development Agency, Thailand, [2]Industrial Electric and Control System Research Center, Thailand

ThF2-3 11:30-11:45
Participatory GIS to verify the boundaries between forest areas and customary people's territories (case study: kasepuhan ciptegelar, the sundanese customary people)
Fahrul Hidayat[1], Yogyrema Setyanto Putra[2], Guridno Bintar Saputro[3], Rizka Windiastuti[1]
[1]Research Division at Indonesian Geospatial Information Agency, Indonesia, [2]Centre for Boundary Mapping of Geospatial Information, Indonesia, [3]Centre for Standardization and Institutional of Geospatial Information, Indonesia

ThF2-4 11:45-12:00
Mapping the distribution network of a government non-cash food assistance using geospatial information system in Kulon progo regency, Indonesia
Heri Sutanta and Monikha Dyah Wulandari
Universitas Gadjah Mada, Indonesia

ThF2-5 12:00-12:15
Utilization of ALeRTO early warning system for localized weather disturbances in Zamboanga peninsula, Philippines
Julemer Ann G. Aying, Raymond T. Ong, Mario S. Rodriguez, Emir V. Epino and Glenn Leandri Brylle L. Lamparas
Ateneo de Zamboanga University, Philippines

ThF2-6 12:15-12:30
Agricultural comprehensive assessment of landscape and modeling for sustainability analysis and forecasting events (CALM-SAFE Agriculture) Program
James Earl D. Cubillas[1], Joemar M. Rodrigo[1], Francisdomson F. Zoilo[2], Leny M. Linguis[1] and Rizalyn A. Pequero[1]
[1]Caraga State University, Philippines

October 17 (Thursday) / 13:30-15:00

Room A

Session Title: [ThA3] Algorithms for Remote Sensing Application 7
Session Chair: Dr. Christopher Elvidge *(Payne Institute for Public Policy, Colorado School, United States of America)*
Date: October 17 (Thursday)
Time: 13:30-15:15

ThA3-1 13:30-13:45
Comparison of object-based image classification of worldview-2 and small format aerial photography images for vegetation mapping
Zulfikri Isnaen[1], Muhammad Kamal[1] and Denny Wijaya Kusuma[2]
[1]Universitas Gadjah Mada, Indonesia, [2]Institute for Marine Research and Observation, Indonesia

ThA3-2 13:45-14:00
The comparison of versatile land use mapping (scale 1:50.000) using visual image interpretation and supervised multispectral classification method
Maya Indah Sari[1], Fajrun Wahidil Muharram[2] and Iswari Nur Hidayati[1]
[1]Universitas Gadjah Mada, Indonesia, [2]Badan Informasi Geospasial, Indonesia

ThA3-3 14:00-14:15
The development of an automation tool for processing vegetation health index (VHI) for monitoring agricultural drought for rice in every municipality in the Philippines
James Earl D. Cubillas, Rudolph Joshua U. Candare and Rolyn C. Daguil
Caraga State University, Philippines

ThA3-4 14:15-14:30
Modelling LRDP in response to multiscenarios in sangli district using AHP
Rajendra N Gaikwad[1], Anjali Khirsagar[1] and Apurba Bera[2]
[1]Savitribai Phule Pune University, India, [2]Regional Remote Sensing Centre, India

ThA3-5 14:30-14:45
Multi-objective pareto optimal solution for tracking of MH370 DEBRIS
Maged Marghany
Geomatika University College, Malaysia

ThA3-6 14:45-15:00
Improvement of spatial interpolation accuracy of daily maximum air temperature using stacking ensemble technique
Dongjin Cho, Cheolhee Yoo, Jungho Im and Yeonsu Lee
Ulsan National Institute of Science and Technology, Korea

ThA3-7 15:00-15:15
Big sentinel data processing for monitoring ground deformations
Ioannis Papoutsis[1], Charalampos Kontoes[1] and Alexis Apostolakis[2]
[1]National Observatory of Athens, Greece, [2]Inha Univ., Korea

Room B

Session Title: [ThB3] Remote Sensing for Urban and Regional Planning 4
Session Chairs: Dr. Sasikarn Plaiklang *(Rambhaibarni Rajabhat University, Thailand)*
Prof. SEONG-WOO JEON *(Korea University, Korea)*
Date: October 17 (Thursday)
Time: 13:30-15:00

ThB3-1 13:30-13:45
Urban expansion scenarios based on artificial neural network (case of Erdenet city, Mongolia)
Myagmartseren Purevtseren, Lodoiravsal Choimaa, Ganpurev Dashlegtseg, Myagmarjav Indra and Bazarkhand Tsegmid
National University of Mongolia, Mongolia

ThB3-2 13:45-14:00
Land use change detection and its implication of THA MAI Area in Chanthaburi province using LANDSAT 8 Data
Sasikarn Plaiklang[1], Intareeya Sutthivanich[2], Songporn Pramarn[1], Kumpee Teeravech[1], Patikorn Thongjing[1], Tobthong Chancharoen[1] and Suripon Charungthanakij[3]
[1]Rambhaibarni Rajabhat University, Thailand, [2]Suranaree University of Technology, Thailand, [3]Silpakorn University, Thailand

ThB3-3 14:00-14:15
Prediction of heat wave over south korea using deep learning with teleconnection factors
Yeonsu Lee, Cheolhee Yoo and Dongjin Cho
Ulsan National Institute of Science and Technology, Korea

ThB3-4 14:15-14:30
Characterize the spatial-temporal variations of urban heat island intensity using a land use regression approach
Chiao-Ying Chen[1], Chih-Da Wu[2,3], Uen-Ching Ng[1] and Shih-Chun Candice Lung[4,5]
[1]National Chiayi Univ., China Taipei, [2]National Cheng Kung Univ, China Taipei, [3]National Health Research Institutes, China Taipei, [4]Academia Sinica, China Taipei, [5]National Taiwan Univ., China Taipei

ThB3-5 14:30-14:45
Analysis of the relationship between urban heat islands and land use by remote sensing techniques (a case study of Colombo District)
K.P.S. Uthpala[1], S. Sivanantharajah[2] and C.H. Edussuriya[3]
[1]University of Colombo, Sri Lanka, [2]Sri Lanka Survey Department, Sri Lanka, [3]Central Environmental Authority, Sri Lanka

ThB3-6 14:45-15:00
Scalable distributed random forest classification for paddy rice mapping
Vasileios Sitokonstantinou, Thanassis Drivas, Alkiviadis Koukos, Ioannis Papoutsis and Charalampos Kontoes
National Observatory of Athens, Greece

Room C

Session Title: [ThC3] Machine Learning for Remote Sensing Applications 5
Session Chair: Prof. No-Wook Park *(INHA University, Korea)*
Date: October 17 (Thursday)
Time: 13:30-15:00

ThC3-1 13:30-13:45
Automatic extraction of training sets using AIS in CNN for ship detection from SAR image
Juyoung Song, Duk-jin Kim and Ki-mook Kang
Seoul National Univ., Korea

ThC3-2 13:45-14:00
A big data platform for remote sensing data processing
Chen Xu[1,2] and Xiaoping Du[1]
[1]Institute of Remote Sensing and Digital Earth, China, [2]Université de Lyon, France

ThC3-3 14:00-14:15
Domain adaptation for 2D/3D change detection in VHR imagery via calibration of convolutional neural network under prior probability shift
Hunsoo Song[1], Anjin Chang[2], Junho Yeom[3], Jinha Jung[4] and Yongil Kim[1]
[1]Seoul National Univ., Korea, [2]Texas A&M Univ., USA, [3]Gyeongsang National Univ., Korea, [4]Purdue Univ., USA

ThC3-4 14:15-14:30
Classification of economic characteristics based on klassen typology using multilayer perceptron neural network
Nurrahim Dwi Saputra, Tanakorn Sritarapipat, Songkot Dasananda
Suranaree University of Technology, Thailand

ThC3-5 14:30-14:45
Smoke plume detection on satellite imageries using CNN with simulated smoke images
Chenguang Hou, Celvin Tan and Soo Chin Liew
National University of Singapore, Singapore

ThC3-6 14:45-15:00
Identification of path pheromone concentration using CNN: a tool for inverse ant algorithm implementation
Jaymer M. Jayoma, James Earl B. Cubillas and Rudolph Joshua U. Candare
Caraga State University, Philippines

Room D

Session Title	[ThD3] Remote Sensing of Marine & Coastal Region 2
Session Chairs	Prof Sang-Wan Kim *(Sejong University, Korea)* Prof. Dursun Zafer Seker *(Istanbul Technical University, Turkey)*
Date	October 17 (Thursday)
Time	13:30-15:00

ThD3-1 13:30-13:45
Mapping coastal marine debris flow using trajectory particle 2 dimension modelling and aerial imagery in mertasari beach - Bali
Elland Yupa Sobhytta[1], Resti Yully Astuti[1], Permana Yudiarso[2], Suko Wardono[2], Rainaldy Dwiatmoko[2]
[1]Center for Management of Coastal and Marine Resources Denpasar, Indonesia, [2]Ministry of Maritime Affairs and Fisheries, Indonesia

ThD3-2 13:45-14:00
Ship detection from X-band SAR images Using Multi-level Multi-scale Feature Pyramid Network
Seong-Jae Hong[1], In-Jeong Hwang[2] and Hyung-Sub Jung[1]
[1]The Univ. of Seoul, Korea, [2]K-water Convergence Institute, Korea

ThD3-3 14:00-14:15
Sea surface current modelling by along track interferometry of tandam-x SAR data
Maged Marghany
The Univ. of Geomatika, Malaysia

ThD3-4 14:15-14:30
Application of remote sensing to assess changes in shoreline and level of riverbed under the pressure of sand mining activities
Hang Thanh Thi Doan, Thao Thanh Tong, Duyen My Chau Nguyen and Long Ta Bui
The Univ. of Ho Chi Minh City, Vietnam

ThD3-5 14:30-14:45
Integrated maritime picture for effective domain awareness
Marlon Trevor Perera
Sri Lanka Navy, Sri Lanka

ThD3-6 14:45-15:00
Investigation of the wave energy potential in black sea by means of satellite data
Mehmet Cihan Aktas and Dursun Zafer Seker
Istanbul Technical University, Turkey

Room E

Session Title	[ThE3] Hyper-spectral data Processing 1
Session Chairs	Dr. Jungil Shin *(Inha University, Korea)* Prof. Ke Wang *(Hohai University, China)*
Date	October 17 (Thursday)
Time	13:30-15:00

ThE3-1 13:30-13:45
A memetic algorithm for generating spectral indices for remotely sensed imagery
Ivan Marc H. Escamos, Maria Art Antonette D. Clariño and Joseph Anthony C. Hermocilla Jaderick P. Pabico, Cristino L. Tiburan, Jr.
University of the Philippines Los Baños, Philippines

ThE3-2 13:45-14:00
Cloud removal of gaofen-5 VNIR hyperspectral data using auxiliary multispectral data via residual neural networks
Mingyuan Peng[1,2], Lifu Zhang[1], Xuejian Sun[1] and Yi Cen[1]
[1]Chinese Academy of Sciences, China, [2]The Univ. of Chinese Academy of Sciences, China

ThE3-3 14:00-14:15
Hyperspectral image classification using convolutional neural networks
Ke Wang
School of Earth Science and Engineering, China

ThE3-4 14:15-14:30
Improved conditional generative adversarial nets for hyperspectral sample generation
Yulin Qiao, Xiaobo Liu, Zhihua Cai[1,2], GuangjunWang[1]
[1]The Univ. of China, China, [2]The Univ. of Qinzhou, China

ThE3-5 14:30-14:45
The modulation transfer function measurement method via using kernel estimation from satellite image
Yu-Lin Tsai, Kuo-Hsien Hsu, Yun-Shan Lee and Shiau-Jing Liu
National Space Organization, China Taipei

ThE3-6 14:45-15:00
A spectral-preserving pansharpening method for multisensor satellite imagery
Xiaojing Huang, Soo Chin Liew and Leong Keong Kwoh
The Univ. of Singapore, Singapore

Room F

Session Title	[ThF3] Glocal Monitoring
Session Chairs	Prof. Kohei Cho *(Tokai University, Japan)* Prof. Fuan Tsai *(Center for Space and Remote Sensing Research, National Central University, China Taipei)*
Date	October 17 (Thursday)
Time	13:30-15:00

ThF3-1 13:30-13:45
Development of the glocal monitoring system
Kohei Cho, Osamu Uchida and Keisuke Utsu
Tokai University, Japan

ThF3-2 14:00-14:15
Estimation of cloud optical properties and surface shortwave radiation from Himawari-8 satellite data: Influence of heavy aerosol on calculation of shortwave radiation in China
Husi Letu, Run Ma, Huazhe Shang, Tianxing Wang, Liangfu Chen and Jiancheng Shi
Chinese Academy of Sciences (CAS), China

ThF3-3 14:15-14:30
Rating the effectiveness of fishery closures using VIIRS boat detection data
Christopher D. Elvidge[1], Tilottama Ghosh[2], Kimberly Baugh[2], Feng Chi Hsu[2] and Mikhail Zhizhin[2]
[1]Colorado School of Mines, USA, [2]University of Colorado, USA

ThF3-4 14:30-14:45
Environmental monitoring using Philippines' Diwata-2: a case study in Laguna de bay
Gay Jane Perez[1], Mark Jayson Felix[1], Shielo Namuco[1], Francisco Felicio[1], Harry Merida[1], Kaye Kristine Vergel[1], Ellison Castro[1] and Joel Joseph S. Marciano, Jr.2
Ellison Castro[1], and Joel Joseph S. Marciano, Jr.2
[1]University of the Philippines Diliman, Philippines, [2]Advanced Science and Technological Institute, Philippines

ThF3-5 14:45-15:00
Development of an automated system for monitoring the performance of reforestation activities using Google earth engine
Rusty A. Lopez, Aeron Adrian C. Maralit, Enrico C. Paringit, Czar Jakiri S. Sarmiento, Regine Anne G. Faelga, Fe Andrea M. Tandoc, Celeste Z. Vidad, Carla Mae M. Arellano, Fatima Joy O. Pamittan and Ayin M. Tandong
University of the Philippines

October 18 (Friday) / 09:00-10:30

Room A

Session Title	[FrA1] Algorithms for Remote Sensing Application 8
Session Chair	Dr. NIK NORASMA CHE YA *(UPM, Malaysia)*
Date	October 18 (Friday)
Time	09:00-10:15

FrA1-1 09:00-09:15
The effectiveness of spectral features for building extraction using geographic object-based image analysis (GEOBIA)
Athaya Atsir Frishila and Muhammad Kamal
Universitas Gadjah Mada, Indonesia

FrA1-2 09:15-09:30
GIS and UAV aerial imaging applications for durian plantation management
Nor Fatin Syafiqah, Abdul Rashid Mohamed Shariff and Nik Norasma Che Ya
Universiti Putra Malaysia, Malaysia

FrA1-3 09:30-09:45
Remote sensing based soil moisture downscaling using weighted composite of CCI and GLDAS soil moisture using random forest
Jaese Lee[1], Sumin Park[1], Jungho Im[1,2], Cheolhee Yoo[1]
[1]Ulsan National Institute of Science and Technology (UNIST), Korea, [2]State University of New York College of Environmental Science and Forestry, USA

FrA1-4 09:45-10:00
Oil spill automatic detection based on multi-objective evolutionary algorithm
Maged Marghany
Geomatika University College

FrA1-5 10:00-10:15
Geographic objective based image analysis (GEOVIA) for vegetation types identification in agricultural area
Siti Martha Uly Br Sinaga and Muhammad Kamal
Universitas Gadjah Mada, Indonesia

Room B

Session Title	[FrB1] Remote Sensing for Urban and Regional Planning 5
Session Chair	Prof. Padma Weerakoon *(University of Sri Jayewardenepura, Sri Lanka)*
Date	October 18 (Friday)
Time	09:00-10:15

FrB1-1 09:00-09:15
Spatial analysis and geovisualization on the relationship between the green land and the population in the urban area - a case study in Taipei city
Chia-Yun Chao and Sendo Wang
N.T.N.U., China Taipei

FrB1-2 09:15-09:30
The environmental elements in multi criteria analysis (MCA) of land suitability for comprehensive land use planning in Johor, Malaysia
M Zainora Asmawi and Muhammad Faris Abdullah
International Islamic University Malaysia, Malaysia

FrB1-3 09:30-09:45
Urban growth modeling and trend analysis using multi-temporal satellite data
Anugya Shukla and Kamal Jain
Indian Institute of Technology, India

FrB1-4 09:45-10:00
Assessing landscape visibility using LIDAR, SAR DEM and globally available elevation data: the case of Bongabong, Oriental mindoro, Philippines
Edwin R. Abucay[1,2] and Yi-Hsing Tseng[1]
[1]National Cheng Kung University, China Taipei, [2]University of the Philippines Los Banos, Philippines

FrB1-5 10:00-10:15
GIS assisted land use structure change analysis in the Colombo district, Sri Lanka
K.G.P.K. Weerakoon
University of Sri Jayewardenepura, Sri Lanka

Room C

Session Title	[FrC1] Data Fusion 1
Session Chairs	Prof. Fuan Tsai *(Center for Space and Remote Sensing Research, National Central University, China Taipei)* Dr. Sompong Liangrocapart *(Mahanakorn University of Technology, Thailand)*
Date	October 18 (Friday)
Time	09:00-10:30

FrC1-1 09:00-09:15
Comparison of computer-vision-based photogrammetric software for reconstructing virtual indigenous tribe
Yu-Qi Lin and Sendo Wang
N.T.N.U., China Taipei

FrC1-2 09:15-09:30
Visualization of virtual indigenous tribes using immersive virtual reality technology
Tzu-Heng Chou and Sendo Wang
N.T.N.U., China Taipei

FrC1-3 09:30-09:45
Modulation transfer function compensation for optical satellite image restoration using joint statistical model in curvelet domain
Soo Mee Jessica Wong, Su Wai Ng, Adhwa Amir Tan
National Space Agency, Malaysia

FrC1-4 09:45-10:00
Object oriented classification of GF-2 remote sensing images based on improved multi-scale segmentation
Xue Ding, JinLiang Wang and JunChengShi
Yunnan Normal University, China

FrC1-5 10:00-10:15
Multi-scale and platform vegetation index fusion for high-resolution data composition service in rainfed agricultural area for Thailand research
Soravis Supavetch
Kasetsart University, Thailand

FrC1-6 10:15-10:30
Satellite image upscaling using high boost bi-cubic interpolation
Sompong Liangrocapart, Suphongsa Khetkeeree, Chapkit Chansamorn, Parawata Thanakitivirul
Mahanakorn University of Technology, Thailand

Room D

Session Title: [FrD1] GIS & GNSS 10

Session Chair: Prof. Sang-Wan Kim *(sejong university, Korea)*

Date: October 18 (Friday)

Time: 09:00-10:30

FrD1-1 09:00-09:15
Defining the spatial impacts of changing the YouBike fees: a case study of Taipei's elimination of the "first 30 minutes is free" policy
Cheng-Yen Wu, Chui-Sheng Chiu and Pei-Fen Kuo
National Cheng Kung University, China Taipei

FrD1-2 09:15-09:30
Mapping traditional territories of Taiwanese indigenous people by the volunteered geographic information system
Sendo Wang
National Taiwan Normal University, China Taipei

FrD1-3 09:30-09:45
GIS platform for augmenting space situational awareness
Panupat Horma[1], Supavit Nounkhaow[1], Nick Chamnong[2] and Wasanchai Vongsantivanich[1]
[1]Geo-Informatics and Space Technology Development Agency, Thailand, [2]Vector Dynamics, Thailand

FrD1-4 09:45-10:00
Participatory geographic information system for sustainable ecotourism in mountainous area
Krishna Prasad Bhandari and Aman KC
Tribhuvan University, Nepal

FrD1-5 10:00-10:15
Real-time water quality monitoring using unmanned surface vehicle with automated pH index mapping
Alexander T. Demetillo[1,2] and Evelyn B. Taboada[1]
[1]University of San Carlos, Philippines, [2]Caraga State University, Philippines

FrD1-6 10:15-10:30
Using geographically weighted - binary logistic regression to analyze land cover change phenomenon (case study: North west Java development region)
Qonita R. Muzdalifah, Albertus Deliar and Riantini Virtriana
Bandung Institute of Technology, indonesia

Room E

Session Title: [FrE1] UAV Data Processing

Session Chair: Dr. Suphongsa Khetkeeree *(Mahanakorn University of Technology, Thailand)*

Date: October 18 (Friday)

Time: 09:00-10:15

FrE1-1 09:00-09:15
Bathymetric mapping of shallow waters in Lian, Batangas using unmanned aerial vehicle (UAV)
Katelene Panlilio, Salvacion Mae Pedido, Roseanne Ramos and Ayin Tamondong
University of the Philippines, Philippines

FrE1-2 09:15-09:30
Improvement of automatic coregistration of multisensor orthophotos generated from unmanned aerial vehicle using edge sharpening
Taeheon Kim[1], Kilim Lee[1], Won Hee Lee[2], Youkyung Han[2] and Junho Yeom[3]
[1]Kyungpook Nat'l Univ., Korea, [2]Kyungpook Nat'l Univ., Korea, [3]Gyeongsang Nat'l Univ., Korea

FrE1-3 09:30-09:45
Road surface image mosaicking from nadir video camera on UAV using optimized resizing-rotating neighbor frame
Suphongsa Khetkeeree, Chapkit Chansamorn, Parawata Thanakitivirul and Sompong Liangrocapart
Mahanakorn University of Technology, Thailand

FrE1-4 09:45-10:00
Riverbed grain size analysis using UAV images techniques
Kai-Chieh Hung and Jen-Yu Han
National Taiwan University, China Taipei

FrE1-5 10:00-10:15
Fit-for-purpose cadaster approach in metro-colombo with UAV image compilation
Nelson Wijenayake[1] and Jong Hyun Choi[2]
[1]Beijing University, China, [2]Hojung Solution Co. Ltd., Korea

Room F

Session Title: [FrF1] Data Fusion 2

Session Chairs: Dr. Jae-In Kim *(Korea Polar Research Institute, Korea)*
Prof. Chih-Yuan Huang *(National Central University, China Taipei)*

Date: October 18 (Friday)

Time: 09:00-10:30

FrF1-1 09:00-09:15
Socio-economic profiling using COMPASS application
Raymond T. Ong, Julemer Ann G. Aying, Mario S. Rodriguez and Emir V. Epino
Ateneo de Zamboanga University, Philippines

FrF1-2 09:15-09:30
Cloud-based crop monitoring mobile tool for Indian farmers
J Kingsly Jeba Ashish
Centre for Geospatial Technologies, India

FrF1-3 09:30-09:45
Optical character recognition (OCR) technology applied on document classification towards smart document management system
Jenie L. Plender, Melbert R. Bonotan, Maria Alexis A. Barbosa and Donalyn A. Plaza
Caraga State University, Philippines

FrF1-4 09:45-10:00
Faculty face recognition using deep learning for smart attendance monitoring
John Carlo F. Camba and Jaymer M. Jayoma
Caraga State Univ., Philippines

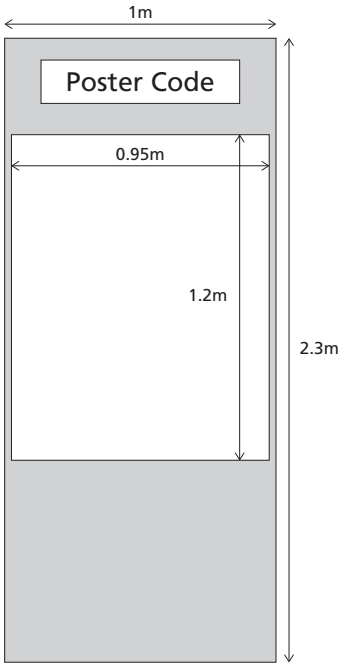
FrF1-5 10:00-10:15
Solution analysis of scale factor in 3D spatial similarity transformation
You-Jing Liu and Jen-Jer Jaw
National Taiwan University, China Taipei

FrF1-6 10:15-10:30
Modeling and estimation of air pollutants from vehicles in Yangon, Myanmar with google traffic map
Takashi Misumi and Wataru Takeuchi
The University of Tokyo, Japan

3. Poster Session

• Guideline for Poster Presentation

Poster presentations submitted full paper and applied to the Best Paper Award will be reviewed by KSRS.



[Preparation]

- Posters should be a visual representation, which could bring initiate informal discussion.
- Layout

1) Panel size: 100 cm wide x 230 cm height

The usable board size: 95 cm wide x 120 cm height (A0 size is recommended)

2) Title: A title should include author's name, affiliation and e-mail address.

[Before the poster presentation]

- The given number of posters will be indicated on a board. Place your poster on the assigned board.

Posting Time: October 14 (Mon) 09:00 ~ October 17 (Thu) 18:00

[During the poster presentation]

- After coffee break on October 15 (Tue) and October 17 (Thu) (15:00-15:30), poster presenters are requested to be at their poster site for conversational explanation of the work. Poster presentations with full paper submission and with identification to enter best paper award competition will be evaluated by on-site reviewers. Several best poster presentations will be awarded at the closing ceremony.

October 15, 2019 (Tuesday) 15:30 ~ 17:00 / **October 17, 2019 (Thursday)** 15:30 ~ 17:00

Exhibition Hall, 1F, DCC

[After the poster session]

- Every presenter is required to remove their own posters. Posters will be discarded after the time announced below.

Sessions	Attaching	Removing
Poster Session on Tuesday	09:00 on Tuesday	12:00 on Wednesday
Poster Session on Thursday	13:00 on Wednesday	after the session

October 15 (Tuesday) 15:30-17:00 / DCC 1F, Exhibition Hall

[TuP] Poster Session 1

TuP-1 15:30-17:00 **Development of integration vehicle sensing data platform for collection and analysis of road driving environment big data**
Hong-Ki Sung and Kyu-Soo Chong
Korea Institute of Civil Engineering and Building Technology, Korea

TuP-2 15:30-17:00 **The impact of mining activities on land and water quality through geo-environmental mapping in Noamundi block, Jharkhand, India**
Kunal Kanti Maiti[1], Jatisankar Bandyopadhyay[1], Subha Das[1] and Debashish Chakravarty[2]
[1]Vidyasagar University, India, [2]Indian Institute of Technology Kharagpur, India

TuP-3 15:30-17:00 **Investigation of FF characteristics of spatio-temporal distribution in NK**
Chengde Piao,Wensi Wang and Ri Jin
Yanbian University, China

TuP-4 15:30-17:00 **Conversion between natural wetlands and farmland in the Tumen river basin: a multiscale geospatial analysis**
Yuyan Liu, Hua Cui, Ri Jin
Yanbian University, China

TuP-5 15:30-17:00 **Spectral simulation on remote sensing reflectance of mixed water with petroleum and sands using hydrolight**
Weijian Luo, Miaofen Huang, Junjie Yang, Bingcai Chen and Yang Zhuang
Guangdong Ocean University, China

TuP-6 15:30-17:00 **Deformation monitoring and analysis of civil engineering structures using InSAR and GIS**
Hao Chang[1], Hsin Ta Liu1 and Fuan Tsai[2]
[1]CECI Engineering Consultants, Inc., China Taipei, [2]National Central University, China Taipei

TuP-7 15:30-17:00 **The Philippine earth data resource and observation center – an enabler in disaster risk reduction and management**
Nash Frederic M. Prado, Julius M. Judan, Lianne Maxine A. Tabanggay, Rocell Nino B. Vicente, Harold Bryan S. Paler and Alvin E. Retamar
DOST-Advanced Science and Technology Institute, Philippines

TuP-8 15:30-17:00 **Habitat assessment and biomass estimation of little Andaman island of archipelago group of Andaman sea using ALOS PALSAR DEM and synthetic aperture data (SAR) data**
Anurupa Paul, Dr. Jatisankar Bandyopadhyay and Dr. Ashis Kumar Paul
Vidyasagar University, India

TuP-9 15:30-17:00 **Analysis of the Rocky coastal geomorphology and geo-chemical aspects in tropical evergreen rainforest of Uttara Kannada coastal districts, Western sahyadri range, India using synthetic aperture radar (SAR) Data**
Anurupa Paul, Dr. Jatisankar Bandyopadhyay, Subhankar Naskar and Dr. Ashis Kumar Paul
Vidyasagar University, India

TuP-10 15:30-17:00 **Integration of tree cover and land cover data for estimation of greenhouse gas emissions and removals for REDD+ in Bangladesh**
Zaheer Iqbal[1,2], Rakibul Hasan Mukul[2], Md. Baktiar Nur Siddiqui[2], Mariam Akhter[2], Md. Tariq Aziz[2], Rashed Jalal[3], Gael Sola[3], Anatoli Poultouchidou[3] and K.M. Nazmul Islam[4]
[1]RIMS Unit, Bangladesh, [2]Bangladesh Forest Department, Bangladesh, [3]Food and Agriculture Organization of the United Nations, Italy, [4]The University of Queensland, Australia

TuP-11 15:30-17:00 **Machine learning approaches for crop yield prediction with MODIS and weather data**
Sungha Ju, Hyoungjoon Lim and Joon Heo
Yonsei University, Korea

TuP-12 15:30-17:00 **Spectral band adjustment factor of KOMPSAT series for agriculture remote sensing**
Ho-Yong Ahn, Chan-Won Park, Kyu-Ho So, Sang-Il Na and Kyung-Do Lee
National Institute of Agricultural Sciences, Korea

TuP-13	15:30-17:00	Rice yield modeling in China using climate data with deep neural network S. B. Cho and Y. W. Lee *Pukyong National University, Korea*
TuP-14	15:30-17:00	Accuracy and applicability of image registration methods for change detection in restricted access areas Jae-Jun Han[1], Sang Wook Park[1,2], Nam Kyung Kim[1] and Young Wook Lee[1] *[1]Korea Institute of Nuclear Nonproliferation and Control (KINAC), Korea, [2]Chungbuk National University, Korea*
TuP-15	15:30-17:00	Monitoring the change on water resources in Ma River Basins, Vietnam using the multi-temporal landsat satellite images Yun-Jae Choung[1], Soo-Young Choi[1], Nguyen Quoc Hiep[2] and Nguyen Anh Hung[2] *[1]GEO C&I Co., Ltd, Korea, [2]Ministry of Agriculture and Rural Development, Vietnam*
TuP-17	15:30-17:00	Estimation of urban sprawl and vegetation loss of metro Cebu through multi-temporal image analysis Chito Patiño, Florencio Campomanes V and Mary Joyce Flores *University of the Philippines Cebu, Philippines*
TuP-20	15:30-17:00	Remotely sensed urban compactness index of Ulaanbaatar (Mongolia) and Tong Liao (Inner Monglia, China) Myagmartseren Purevtseren[1], Dabuxile Gungarjav[1], Myagmarjav Indra[2] and Enkhtuya Nergui[1] *[1]National University of Mongolia, Mongolia, [2]Mongolian University of Life Sciences, Mongolia*
TuP-21	15:30-17:00	Object-based wildfire damage assessment using planetsope images Minkyung Chung and Yongil Kim *Seoul National University, Korea*
TuP-22	15:30-17:00	Performance analysis of ship detection algorithms based on KOMPSAT-5 SLC image and AIS data Donghan Kim, Yoon-Kyung Lee and Sang-Wan Kim *Sejong University, Korea*
TuP-23	15:30-17:00	Object-based wildfire damage assessment using planetscope images Jong-geol Park *Tokyo Univ.y of Information sciences, Japan*
TuP-24	15:30-17:00	Estimation of biomass burning activities over East Asia from satellite observation records Kwon-Ho Lee *Gangneung-Wonju National Univ., Korea*
TuP-25	15:30-17:00	Performance evaluation according to virtual grid size in the rational function model generation for KOMPSAT-5 SAR imagery Yoonjo Choi[1], Seunghwan Hong[2], Ilsuk Park[2], Mohammad Gholami Farkoushi[1] and Hong-Gyoo Sohn[1] *[1]Yonsei University, Korea, [2]Stryx Inc., Korea*
TuP-26	15:30-17:00	A preliminary study of INSAR techniques for the impact of 2016 Taitung earthquake Che-Wei Li and Tee-Ann Teo *National Chiao Tung University, China Taipei*
TuP-27	15:30-17:00	Tidal creek extraction from airborne LiDAR data using ground filtering techniques Hyejin Kim[1], Jaebin Lee[2], Gwangjae Wie[3] and Yongil Kim[1] *[1]Seoul National University, Korea, [2]Mokpo National University, Korea, [3]Geostory Inc., Korea*
TuP-28	15:30-17:00	Leaf chlorophyll content estimation for Moso bamboo using hyperspectral reflectance Zhen-bang Hao[1], Li-li Lin[1], Jian Liu[2] and Kun-yong Yu[1] *[1]Fujian Agriculture and Forestry University, China, [2]Sanming University, China*
TuP-29	15:30-17:00	Development and application of satellite-based agro-meteorological drought index (SAMDI) Ye-Seul Yun and Yang-Won Lee *Pukyung National Univ., Korea*

TuP-30	15:30-17:00	Ice velocity estimation of Narssap Sermia in Greenland using multi-temporal X-band SAR observations Seong-Woo Jung, Seo-Woo Park and Sang-Hoon Hong *Pusan National University, Korea*
TuP-31	15:30-17:00	Mapping of the altitudinal and topographical patterns of mountainous vegetation in Northeast Japan Ram C. Sharma[1], Hidetake Hirayama[2], Mizuki Tomita[1] and Keitarou Hara[1] *[1]Tokyo University, Japan, [2]Graduate School of Tokyo University, Japan*
TuP-32	15:30-17:00	Estimation of local-scale soil moisture by the integration of Sentinel-1 SAR and Sentinel-2 MSI images with deep neural network Soo-Jin Lee and Yang-Won Lee *Pukyong National University, Korea*
TuP-33	15:30-17:00	Projection of pixel-based rice yields by linking geostationary satellite imagery and a crop model in Northeast Asia Seungtaek Jeong[1], Jonghan Ko[1] and Jong-min Yeom[2] *[1]Chonnam National University, Korea, [2]Korea Aerospace Research Institute, Korea*
TuP-34	15:30-17:00	Arctic sea ice classification using artificial intelligence and NASA team 2 algorithm Ji-Won Kim and Yang-Won Lee *Pukyong National Univ., Korea*
TuP-35	15:30-17:00	Analysis of long-term variation of observed OMI tropospheric NO_2 concentration using cumulative percentage and averaging Gyo-Hwang Choo, Jongmin Yoon, Won-Jin Lee, Jeonghyeon Seo, Deok-Rae Kim and Dong-Won Lee *National Institute of Environmental Research, Korea*
TuP-36	15:30-17:00	Semantic segmentation of landsat images for detection of wildfire-damaged areas Seong-Wook Park and Yang-Won Lee *Pukyong National University, Korea*
TuP-37	15:30-17:00	Impacts of climate change on rice production in Siem Reap, Cambodia Daophone Phetkhampheng and Jonghan Ko *Chonnam National Univ., Korea*
TuP-38	15:30-17:00	Development of a simple radiometric calibration system for multispectral images of an unmanned aerial vehicle Taehwan Shin, Seungtaek Jeong and Jonghan Ko *Chonnam National Univ., Korea*
TuP-39	15:30-17:00	Analysis of spatial pattern of oak wilt outbreak using UAV images Won-Woo Seo[1], Hwa-Seon Lee[1], Yongwoo Nam[2] and Kyu-Sung Lee[1] *[1]Inha University, Korea, [2]National Institute of Forest Science, Korea*
TuP-40	15:30-17:00	Inundation extent mapping using dual-polarimetric Sentinel-1 SAR data Woohyun Jeon, Jonghyuk Yi and Youseung Kim *SELAB, Inc., Korea*
TuP-41	15:30-17:00	RPC based block adjustment using KOMPSAT stereo images GwangSoo Shin and DooChun Seo *Korea Aerospace Research Institute (KARI), Korea*
TuP-42	15:30-17:00	Spatial plans suitability detection using remote sensing and GIS based on land's potentional Indices case study: Parepare city, Indonesia Ipung, Nabilla Astriviany, Safira Ihdanisa Hidayah, Alrafki Murfi, Shifa Ardhia Mahardika, Moch Rivanda Safrian and Prima Widayani *Universitas Gadjah Mada, Indonesia*
TuP-43	15:30-17:00	Identification of riparian zone encroachment using remote sensing and GIS techniques Mary Grace A. Loberiano, Roxanne I. Mabunga and Edgardo G. Macatulad *University of the Philippines Diliman, Philippines*

TuP-45	15:30-17:00	Estimation of groundwater level in the hunshandake sandy land, China based on KBDI and in situ measurements Yaru Muschin[1], Wataru Takeuchi[1], Hasi Bagan[2] and Hasi Eerdun[3] *[1]The University of Tokyo, Japan, [2]Shanghai Normal University, China, [3]Beijing Normal University, China*
TuP-46	15:30-17:00	Analysis on variation characteristics of remote sensing reflectance and its influencing factors in oil-polluted water Miaofen Huang[1], Yang Liu[2], Xufeng Xing[1], Nannan Zhang[2] and Zhonglin Wang[1] *[1]Guangdong Ocean University, China, [2]PetroChina Exploration & Development Research Institute, China*
TuP-47	15:30-17:00	Estimation of gross primary production using numerical weather prediction data with deep neural network: case study of the Korean peninsula Nari Kim and Yang-Won Lee *Pukyong National University, Korea*
TuP-48	15:30-17:00	A neural network-based land use regression model to estimate spatial-temporal variability of SO2 Ya-Ping Hsiao[1], Chih-Da Wu[1,2], Jen-Wei Huang[3], Tee-AnnTeo[4] and Shih-Yuan Lin[5] *[1]National Cheng Kung University, China Taipei, [2]National Health Research Institutes, China Taipei, [3]National Cheng Kung University, China Taipei, [4]National Chiao Tung University, China Taipei, [5]National Chengchi University, China Taipei*
TuP-49	15:30-17:00	Estimate BTEX concentrations variations in a petrochemical parks area using a geographically and temporally weighted regression model Jhao-Yi Wu[1], Chih-Da Wu[1,2], Yu-Cheng Chen[2], Chin-Yu Hsu[2] and Mu-Jean Chen[2] *[1]National Cheng Kung Univ., China Taipei, [2]National Health Research Inst., China Taipei*
TuP-50	15:30-17:00	Comparison of geospatial-temporal modeling approaches in air pollution estimations Yu-Ting Zeng[1], Chih-Da Wu[1,2], Yu-Cheng Chen[2], Chin-Yu Hsu[2] and Mu-Jean Chen[2] *[1]National Cheng Kung Univ., China Taipei, [2]National Health Research Inst., China Taipei*
TuP-51	15:30-17:00	Spectral and spatial distribution characteristics of specific absorption coefficient of petroleum-polluted water Miaofen Huang[1], Yang Liu[2], Xufeng Xing[1], Weijian Luo[1] and Junjie Yang[1] *[1]Guangdong Ocean University, China, [2]PetroChina Exploration & Development Research Institute, China*
TuP-52	15:30-17:00	Remote sensing-based drought monitoring to detect flach drought using the evaporative stress index in East Asia Won-Ho Nam *Hankyong National University, Korea*
TuP-53	15:30-17:00	A method to map agricultural land abandonment using high spatial and temporal resolution images Yoshihiko Kobayashi and Tsuguki Kinoshita *Ibaraki Univ., Japan*
TuP-54	15:30-17:00	Cloud-type analysis of Himawari-8 meteorological satellite data with ancillary data from ground-based instruments Takashi Kadowaki, Nofel Lagrosas, and Hiroaki Kuze *Chiba University, Japan*
TuP-55	15:30-17:00	A study on the development of urban internal waters flooding visualization system using unreal engine Yu-Yeon Lee, Yeong-Cheol Choi and Yun-Jae Choung *GEO C&I Co., Ltd, Korea*
TuP-56	15:30-17:00	Building area detection using point clouds produced by dense image matching method Mi-Kyeong Kim, Won-Suk Kwon, Wan-Yong Park and Dae-Sik Shin *Agency for Defense Development, Korea*
TuP-57	15:30-17:00	An exploratory study on the development of technique for image segmentation using mosaic images Jiyoon Moon and Kwang Jae Lee *Korea Aerospace Research Institute, Korea*
TuP-58	15:30-17:00	A temporal/spatial analysis of regional/local numerical weather prediction models for infrared satellite image applications on the earth surface Hongtak Lee and Hee-Seob Kim *Korea Aerospace Research Institute, Korea*

TuP-59	15:30-17:00	Mapping of green infrastructure in Sakura city, central Japan focusing on local climate mitigation Yuuki Nakano and Keitarou Hara *Tokyo University of Information Sciences, Japan*
TuP-60	15:30-17:00	Multi-sensor integrated application platform for resource satellite images Hsin-Yin Lin[1], Shu-Min Hsu[1], Yu-Heng Tai[1], Fuan Tsai[1] and Li-Hsueh Chang[2] *[1]National Central University, China Taipei, [2]National Space Organization, China Taipei*
TuP-61	15:30-17:00	Analysis on the key techniques of constructing virtual satellite constellation Xufeng Xing, Shiyi-Xie, Miaofen Huang, Weijian Luo and Junjie Yang *Guangdong Ocean University, China*
TuP-62	15:30-17:00	Vertical variation characteristics of petroleum concentration and backscatter coefficient in petroleumpolluted water body Xufeng Xing, Miaofen Huang, Weijian Luo, Junjie Yang and Zhonglin Wang *Guangdong Ocean University, China*
TuP-63	15:30-17:00	The topographic impact of typhoon disturbances on vegetation damage Cheng-En Song, Su-Fen Wang and Yi-Chin Chen *National Changhua University of Education, China Taipei*
TuP-64	15:30-17:00	Analysis of local velocity anomalies of David Glacier, East Antarctica, by using double-differential InSAR Heejeong Seo and Hoonyol Lee *Kangwon National Univ., Korea*
TuP-65	15:30-17:00	Analysis of open-pit mining activities using sentinel-1A/B coherence imagery Jihyun Moon and Hoonyol Lee *Kangwon National Univ., Korea*
TuP-66	15:30-17:00	Change detection in Formosa satellite images via using Kullback-Leibler divergence Li-Fen Huang, Yu-Lin Tsai and Shiau-Jing Liu *National Space Organization, China Taipei*
TuP-67	15:30-17:00	Planting cold season crops in warm climate setting via temperature-controlled greenhouse with automated irrigation, and solid acidity regulation Alejandro H. Ballado, Jr., Ramon G. Garcia, Kris Eriko E. Dela Cruz, Marianne Joy M. Dela Cruz, Lyle Christian B. Parungao, John Carlo S. Sonza and Sarah Alma P. Bentir *Mapúa University, Philippines*
TuP-68	15:30-17:00	How earth observation satellite images contributed to natural disaster managements worldwide Hyun-Ok Kim, Yeji Kim and Hyo-Suk Lim *Korea Aerospace Research Institute, Korea*
TuP-69	15:30-17:00	Multi-temporal interferometry for detecting and monitoring landslide: Mount Kinabalu earthquake case. Husniyah Binti Mahmud and Masahiko Nagai *Yamaguchi University, Japan*
TuP-70	15:30-17:00	Development of an infrared thermography for wind turbines monitoring by remote sensing techniques Yu-Chuan Lin, Long-Jeng Lee, Po-Ming Lin, Chih-Hao Lin and Ming-Fu Chen *Taiwan Instrument Research Institute, National Applied Research Laboratories, China Taipei*
TuP-71	15:30-17:00	Simulated radiance at sensor using radiative transfer model with sensor response function in MWIR and validation of simulated radiance against MODIS Data DongHwan Cha, DaeYoung Ahn and DooChun Seo *Korea Aerospace Research Institute, Korea*
TuP-72	15:30-17:00	On the basic research of data analysis for Terrestrial Laser Scanner Masanori Washikita and Masaaki Shikada *Kanazawa Institute of Technology, Japan*

TuP-73 15:30-17:00 Analysis of effect of radiometric resolution on radiometric and phenological normalization
Daekyo Seo, Yangdam Eo and Jinsoo Park
Konkuk Univ., Korea

TuP-75 15:30-17:00 Spatial prediction of forest soil organic carbon based on random forest algorithm and remote sensing
Xiong Yao and Jian Liu
Fujian Agriculture and Forestry University, China

TuP-76 15:30-17:00 East African Drought monitoring during rainy seasons
Seonyoung Park[1], Daehyun Kang[2], Cheolhee Yoo[3], Jungho Im[3] and Myong-In Lee[3]
[1]Korea Aerospace Research Institute, Korea, [2]University of Washington, USA, [3]Ulsan National Institute of Science and Technology, Korea

TuP-77 15:30-17:00 Possibility study of volcanic SO2 emission monitoring with Geostationary Environment Monitoring Spectrometer (GEMS)
Won-Jin Lee, Gyo-Hwang Choo, Dong-Won Lee, Seung-Yeon Kim, Hae-Jung Lee, Ara Cho, Kyunghwa Lee, Jeonghyeon Seo and Sangkyun Kim
National Institute of Environmental Research, Korea

TuP-78 15:30-17:00 Distinguishing unhealthy potted tree using blocked NDVI derived from NIR video
Kousuke Hida and Mitsuharu Tokunaga
Kanazawa Institute of Technology, Japan

TuP-79 15:30-17:00 Coherence estimation of widely demanded AW3D30 and SRTM 1-arcsecond space-borne global DEMs
Umut Gunes SEFERCIK, Umit GOKMEN and Can ATALAY
Zonguldak Bülent Ecevit Uni., Turkey

TuP-80 15:30-17:00 Separation of Landslide Source and Run-out Areas with Machine Learning for Landslide Inventory Refinement
Jhe-Syuan Lai
Feng Chia University, China Taipei

TuP-81 15:30-17:00 Automated extraction of flood for large scale area using weight average Otsu's method from ALOS-2 dual polarisation and MODIS
Husniyah Binti Mahmud and Masahiko Nagai
Yamaguchi University, Japan

TuP-84 15:30-17:00 Investigation of forest fire characteristics in transboundary area using remote sensing data
Yao Yu, Chengde Piao and Ri Jin
Yanbian University, China

TuP-85 15:30-17:00 The comparative study between UAV digital image and Aerial Lidar data for forest height
Sang-Hyun Shin, Hye-Won Oh and Chul-Uong Choi
Pukyong National University

TuP-86 15:30-17:00 A method for automatic water body detection and estimation the water levels in small reservoirs from SAR images
Yoon-Kyung Lee, Boram Lee and Sang-Wan Kim
Sejong Univ., Korea

TuP-87 15:30-17:00 Investigation of PM10 based on landsat 8 over urban area and correlated with ground measurement
Rika Hernawati and Soni Darmawan
Institut Teknologi Nasional., Indonesia

TuP-88 15:30-17:00 Operational remote sensing-based rice monitoring systems in South and Southeast Asia under the RIICE and PRISM initiatives
Alice Laborte[1], Tri Setiyono[1], Jeny Raviz[1], Emma Quicho[1], Aileen Maunahan[1], Eduardo Jimmy Quilang[2], Mary Rose Mabalay[2], Sellaperumal Pazhanivelan[3], Nguyen Hong Ninh[4], Men Sothy[5], Chharom Chin[5], Massimo Barbieri[6], Francesco Collivignarelli[6], Luca Gatti[6], Francesco Holecz[6]
[1]International Rice Research Institute, Philippines, [2]Philippine Rice Research Institute, Philippines, [3]Tamil Nadu Agricultural University, India, [4]Ministry of Agriculture, Forestry and Fisheries, Cambodia, [5]Swiss Agency for Development and Cooperation, Vietnam, [6]sarmap, Switzerland

TuP-89 15:30-17:00 Atmospheric correction effectiveness analysis for multispectral satellite image: focused on agricultural land
Ho-Yong Ahn, Chan-Won Park, Kyu-Ho So, Kyung-Do Lee and Sang-Il Na
National Institute of Agricultural Sciences

TuP-90	15:30-17:00	Fining the location alternatives for environmental impact assessment for new bridge construction project using sentinel data Tin Aung Moe *Myanmar Geoinformatics Society, Myanmar*
TuP-91	15:30-17:00	Landscape change detection using satellite data and GIS techniques in suranaree district, Nakhon Ratchasima, Thailand Intareeya Sutthivanich[1], Udomvit Maneewan[1], Sasikarn Plaiklang[2] and Suriporn Charungthanakij[3] *[1]Suranaree University of Technology, Thailand, [2]Rambhaibarni Rajabhat University, Thailand, [3]Silpakorn University, Thailand*
TuP-92	15:30-17:00	Sensing potential area for cattle farm in Belitung Timur District Government based on geospatial information approach Fahrudin[1] and Therissia Hati[2] *[1]Public works and spatial planning services, Indonesia, [2]Agricultural service and food crops, Indonesia*
TuP-93	15:30-17:00	Estimation of relative humidity over East Asia with deep neural networks Junghee Lee[1], Haemi Park[2], Cheolhee Yoo[1], Seongmun Sim[1] and Jungho Im[1] *[1]Ulsan National Institute Science and Technology, Korea, [2]Tokyo Univ., Japan*
TuP-94	15:30-17:00	Land Surface Temperature (LST) as a part of space based Multi-Parametric approach for (earthquake) precursor studies (S-MAPS) Nabendu Raul[1], Madhumita Jana[1] and P.K. Champatiray[2] *[1]IIT(ISM), India, [2]IIRS, India*
TuP-95	15:30-17:00	Assessing coastal geomorphology impacts on algal blooms in Johor Bahru Water Territory Mohd Nadzri Md Reba[1], Fatin Nabihah Syahira Ridzuan[1], Monaliza Mohd Din[1], Mazlan Hashim[1], Po Teen Lim[2], Zaharah Ibrahim[1] and Mohd Firdaus Abdul-Wahab[1] *[1]Universiti Teknologi Malaysia, Malaysia, [2]University of Malaya, Malaysia*
TuP-97	15:30-17:00	Analysis of rice paddy reduction through remote sensing and policy implications Soojeong Myeong *Korea Environment Institute, Korea*
TuP-99	15:30-17:00	Evaluation of R-based wildfire classification algorithm using KOMPSAT-3A Seung-Min Lee and Jong-Chul Jeong *Namseoul Univ., Korea*
TuP-100	15:30-17:00	Estimating forest area and analysing its amount of CO_2 uptake using spatio-temporal data Mina Hong, Sugyeong Park, Hangnan Yu, Halim Lee, YoungJin Ko and Woo-Kyun Lee *Korea University, Korea*
TuP-101	15:30-17:00	Detection and classification of forest area and forest type using multi-temporal satellite imagery: focusing on Gangwon-province in South and North Korea SuJong Lee, Eunbeen Park, Seungeun Cha, Chul-Hee Lim, Cholho Song and Woo-Kyun Lee *Korea University, Korea*
TuP-102	15:30-17:00	The relationship of sand and dust storm and land characteristics in mid-latitude region Eunbeen Park, Jiwon Kim, Cholho Song, Hyun-Woo Jo and Woo-Kyun Lee *Kore Univ., Korea*
TuP-103	15:30-17:00	Extraction of absolute water level in the florida everglades using TANDEM-X bistatic science phase observations with a large perpendicular baseline Sang-Hoon Hong[1], Shimon Wdowinski[2] and Sang-Wan Kim[3] *[1]Pusan National University, Korea, [2]Florida International University, U.S.A, [3]Sejong University, Korea*
TuP-104	15:30-17:00	Detecting Potential Vegetation Establishment Area using Remote sensed data in the Aral Sea Jiwon Kim, Cholho Song, Sujong Lee, Sungeun Cha, Hyun-Woo Jo, Eunbeen Park, Jiae An, Yowhan Son, Asia Khamzina and Woo-Kyun Lee *Korea Univ., Korea*
TuP-105	15:30-17:00	Analysis of forest watershed impact by climate change in Kangwon province Youngjin Ko, Halim Lee, Hyun-Woo Jo, Chul-Hee Lim, Cholho Song, Mina Hong and Woo-Kyun Lee *Korea Univ., Korea*

TuP-106	15:30-17:00	Analysis of forest fire change using multi-temporal sentinel2 images and land-cover Hyoung-Jin Youn and Jong-Chul Jeong *Namseoul Univ., Korea*
TuP-107	15:30-17:00	Analysis of the after-effect of forest fire to vegetation quality using landsat 8 OLI/TIRS TM imagery Margaux Elijah P. Neri, Kenny Brem C. Medina, Gilson Andre M. Narciso and Bernadette Anne B. Recto *University of the Philippines Diliman, Philippines*
TuP-109	15:30-17:00	Yield prediction of onion (allium cepa L.) using hyperspectral imagery and climatic factors Ye-Seong Kang, Sae-Rom Jun, Si-Hyeong Jang, Hye-Young Song, Jun-Woo Park and Chan-Seok Ryu *Gyeongsang National University, Korea*

October 17 (Thursday) 15:30-17:00 / DCC 1F, Exhibition Hall

[ThP] Poster Session 2

ThP-1 15:30-17:00 **Forest Carbon Stock assessment using Earth Observation Hyperion data for Mangrove forest**
Prem Chandra Pandey[1], Akash Anand[2], Prashant K. Srivastava[3] and George P Petropoulos[4,5]
[1]Shiv Nadar University, India, [2]Central University of Jharkhand, India, [3]Banaras Hindu University, India, [4]Technical University of Crete, Greece, [5]Hellenic Agricultural Organization (HAO)-Demeter, Greece

ThP-2 15:30-17:00 **Variations of vegetation net primary productivity and its responses to climate change from 1982 to 2015 in Mongolia**
Sainbuyan.Bayarsaikhan[1], Myagmartseren.Purevtseren[2], Gang Bao[3], Urtnasan Mandakh[1], Altantuya.Dorjsuren[1], Bayartungalag Batsaikhan[1] and Yuhai Bao[3]
[1]Mongolian Academy of Science, Mongolia, [2]National University of Mongolia, Mongolia, [3]Inner Mongolia Normal University, China

ThP-3 15:30-17:00 **Spatio-temporal analysis of drought using NDVI based land cover classification**
Sumana Sahoo[1] and Animesh Choudhury[2]
[1]Indian Institute of Remote Sensing, India, [2]Banaras Hindu University, India

ThP-4 15:30-17:00 **Use of landsat data for mapping spatial and temporal variation of landscape pattern from 1987 to 2017: case study of lake group watershed in central Yunnan Province**
Lv Jie
Kunming University of Science and Technology, China

ThP-5 15:30-17:00 **Hyperspectral properties of leaves according to different N fertilization regimes and leaf orientation in wheat**
Gi-Eun Song, Seung-Ha Lee, Yeong-Hun Lee, Jae-Gyeong Jung and Sang-In Shim
Gyeongsang National University, Korea

ThP-6 15:30-17:00 **Spatiotemporal changes in surface water status of East Kolkata Wetlands (1984-2015): a remote sensing approach**
Animesh Choudhury[1], Avinash Chand Yadav[2] and Charu singh[2]
[1]Banaras Hindu University, India, [2]Indian Institute of Remote Sensing, India

ThP-7 15:30-17:00 **Using night-time light to detect economic development and map regional poverty in the Philippines**
Villanueva and Ardibel S.
University of the Philippines Diliman, Philippines

ThP-8 15:30-17:00 **Estimation of chlorophull-a concentration in laguna de bay using SENTINEL-3 satellite data**
M. Conopio, R. K. Japor, A. C. Blanco and A. M. Tamondong
University of the Philippines - Diliman, Philippines

ThP-9 15:30-17:00 **Identification and intraseasonal variability in the surface upwelling off Sumatra-Java**
Gang Pan
South China Sea Institute of Oceanology, Chinese Academy of Sciences, China

ThP-11 15:30-17:00 **Monitoring of surface deformation in Changshu (China) with sentinel-1 data using Tomo-PSInSAR**
Lifan Zhou, Yu Xia and Shengrong Gong
Changshu Institute of Technology, China

ThP-12 15:30-17:00 **Monitoring surface deformation on Siberia, Yakutsk using InSAR**
Yeji Lee, Yoon Taek Jung, Keun Hoo Cho, Minhwa Kim and Sang Eun Park
Sejong Univ., Korea

ThP-13 15:30-17:00 **Anomalous climatic pattern analysis using sea level anomaly data in Korean peninsula**
Do-Hyun Hwang, Suho Bak, Unuzaya Enkgjargal and Hong-Joo Yoon
Pukyong Univ., Korea

ThP-14 15:30-17:00 **Classifying vertical structure of Harae-ri forest in Jeju Island , Korea from optic and RADAR satellite images using artificial neural network**
Yong-Suk Lee, Won-Kyung Baek and Hyung-Sub Jung
Univ. of Seoul, Korea

ThP-15	15:30-17:00	Spectral simulation on remote sensing reflectance of mixed water with petroleum and sands using hydrolight Weijian Luo, Miaofen Huang, Junjie Yang, Bingcai Chen and Yang Zhuang *Guangdong Ocean University, China*
ThP-16	15:30-17:00	Generation of DEM and study of surface deformation using Synthetic Aperture Radar (SAR) interferometry A.S.Mohammed Abdul Athick[1] and Manikandan Sathyanarayanan[2] *[1]National Central University, China Taipei, [2]National Taiwan University, China Taipei*
ThP-18	15:30-17:00	Identification and mapping of avalanche hazard zones employing terrain, snow cover and meteorological parameters on western part of Himalayan range A.S.Mohammed Abdul Athick[1] and Manikandan Sathyanarayanan[2] *[1]National Central University, China Taipei, [2]National Taiwan University, China Taipei*
ThP-19	15:30-17:00	Improving spatial distribution of growing stock volume using MODIS satellite imageries and geospatial information Sungeun Cha, Hyun-Woo Jo, Cholho Song and Woo-Kyun Lee *Kore Univ., Korea*
ThP-20	15:30-17:00	An estimation of the chlorophyll-a concentration by landsat-8/OLI and sentinel-2A/MSI imageries Yoshinari Oguro[1], Tomohisa Konishi[1], Seiji Ito[1], Chiemi Miura[1] and Toshiharu Iwai[2] *[1]Hiroshima Institute of Technology, Japan, [2]Ehime University, Japan*
ThP-21	15:30-17:00	Spatial analysis based chemical risk hotspot detection for major cities in South Korea Hangnan Yu, Woo-Kyun Lee and Jong Ryeul Sohn *Kore Univ., Korea*
ThP-22	15:30-17:00	Landslide extraction with convolutional neural networks using sentinel-2 images Tomohisa Konishi, Seiji Ito and Yoshinari Oguro *Hiroshima Institute of Technology, Japan*
ThP-23	15:30-17:00	The detection of Urban Heat Island in Jakarta, Indonesia using the landsat 8 satellite data Prita Ayu Permatasari, Arif Kurnia Wijayanto and Luisa Febrina Amalo *IPB University, Bogor, Indonesia*
ThP-24	15:30-17:00	Assessment of water environment health using fuzzy evaluation theory and AHP method in Xixi Wetland, Hangzhou, China Jiapeng Wang and Dengrong Zhang *Hangzhou Normal Univ., China*
ThP-25	15:30-17:00	Remote sensing and infectious disease epidemiology: responses of land use and surface temperature on tuberculosis in Malaysia Abdul Rauf Abdul Rasam[1], Ahmad Fakhrulidham Zakaria[1] and Alif Ramli[2] *[1]Universiti Teknologi MARA, Malaysia, [2]Infectious Disease Control Unit, Malaysia*
ThP-26	15:30-17:00	Analysis of geo-positioning accuracy using stereo pairs of Wordview-1 and Pleiades-1B imagery Ha-Eun Baek, Won-Suk Kwon, Mi-Kyeong Kim, Young-Rim Lee and Dae-Sik Shin *Agency of Defense Development, Korea*
ThP-27	15:30-17:00	Comprehensive analysis of the multi-beam LiDAR self-calibration for mobile mapping system Han Sae Kim[1], Kang Hyeok Choi[2] and Yongil Kim[1] *[1]Seoul National Univ., Korea, [2]Myongji Univ., Korea*
ThP-28	15:30-17:00	Generating and correcting rational polynomial coefficients using image correction model Namhoon Kim, Hyo-Seon Jang, Mohammad Gholami Farkoushi, Yoon-Jo Choi and Hong-Gyoo Sohn *Yonsei Univ., Korea*
ThP-29	15:30-17:00	3-dimensional ground coordinates determination accuracy analysis based on stereo imaging angle in KOMPSAT-3A DooChun Seo[1], DongHan Cha[1] and HyeJi Kim[2] *[1]Korea Aerospace Research Institute, Korea, [2]SI Imaging Services, Korea*

ThP-30	15:30-17:00	3D poing clouds extraction from high-resolution multi-view satellite images using dense image matching Won-Suk Kwon, Mi-Kyeong Kim, Young-Rim Lee, Hyeon-Seung Song and Dae-Sik Shin *Agency of Defense Development, Korea*
ThP-31	15:30-17:00	Processing speed improvement on SfM using panoramic images based on camera direction constraints Yuichiro Yamaguchi, Yoshiki Sasaki, Masafumi Nakagawa *Shibaura Institute of Technology, Japan*
ThP-32	15:30-17:00	Analysis of temperature differences due to cracks and voids in concrete structures. Himi Kazuya and Mitsuharu Tokunaga *Kanazawa Institute of Technology, Japan*
ThP-33	15:30-17:00	Using cheap RTK and IMU in direct geo-referencing of the UAV imager Ho-Hyun Jeong[1], Hye-Won Oh[2] and Chul-Uong Choi[2] *[1]Korea Land and Geospatial Informatix Corporation, Korea, [2]Pukyong National University, Korea*
ThP-34	15:30-17:00	Vehicle speed estimation using a low-cost camera from a vertical overhead perspective Bernadette Anne B. Recto, Margaux Elijah P. Neri, Gilson Andre M. Narciso and Kenny Brem C. Medina *University of the Philippines Diliman, Philippines*
ThP-35	15:30-17:00	Analysis of forest fire damage area in Gangwon-do, Korea using high-resolution aerial images and near-infrared images Sung-Jin Ma *Univ. of Seoul, Korea*
ThP-36	15:30-17:00	Comparative analysis of feature matching algorithms for extreme region exploration Hyun-mook Lim[1], Seil Kim[1], Kanghyeok Choi[1], Changjae Kim[1] and Sungchul Hong[2] *[1]University of Myongji, Korea, [2]Korea Institute of Civil Engineering and Technology*
ThP-37	15:30-17:00	Situation visualization system of disaster area using truck-mounted camera Takuho Matsuo and Osamu Uchida *Tokai University, Japan*
ThP-38	15:30-17:00	Feasibility study on demographic analysis based on spatial analysis applying the G statistics Yuki Kameda and Kiichiro Kumagai *Setsunan University, Japan*
ThP-39	15:30-17:00	Application of boosted classification and regression models for groundwater potential mapping Sunmin Lee[1,2], Moung-Jin Lee[2] and Jeong-Cheol Kim[1,3] *[1]University of Seoul, Korea, [2]Korea Environment Institute, Korea, [3]National Institute of Ecology, Korea*
ThP-40	15:30-17:00	*Performance evaluation of single frequency RTK-GNSS positioning for structure inspection using wearable sensors* *Kouki Kurita, Shigeki Takahashi and Masafumi Nakagawa* *Shibaura Institute of Technology, Japan*
ThP-41	15:30-17:00	Spatio-temporal change characteristics of apatial interaction networks: a case study within the 6th ring road Beijing Jing Yang, Disheng Yi and Jing Zhang *Capi Norm Univ., China*
ThP-42	15:30-17:00	Identifying urban districts and spatial combination of functions with fishers' exact test - a case study within the sixth ring road of Beijing, China Disheng Yi, Jing Yang and Jing Zhang *Capi Norm Univ., China*
ThP-43	15:30-17:00	KOMPSAT open API for satellite information service Yoon-Jeong Jang, Gab-Ho Jeun and Dae-Won Chung *Korea Aerospace Research Institute, Korea*

ThP-44	15:30-17:00	Tide and wave measurement based on high precision dynamic GNSS technology Rui Shan[1,2,3], Xiaojun Cheng[1], Tengfei Zhou[1], Yujie Cao[1] and Lingyu Dong[2,3] *[1]Tongji University, China, [2]Qingdao National Laboratory for Marine Science and Technology, China, [3]Qingdao Institute of Marine Geology, China*
ThP-45	15:30-17:00	Experiments on the early detection method of wandering dementia patients by using GNSS Kenchi Kishimoto, Masaaki Shikada, Riwa Nakamoto and Naotake Nakayama *Kanazawa Institute of Technology, Japan*
ThP-46	15:30-17:00	Mapping the potential sites for floating photovoltaic plants in the Philippines Michelle V. Japitana[1], Maria Lorena L. Tuballa[2], Arnold G. Apduhan[1] and Michael Lochinvar S. Abundo[3] *[1]Caraga State Univ., Philippines, [2]Silliman Univ., Philippines, [3]Nanyang Technological Univ., Philippines*
ThP-47	15:30-17:00	Correlation analysis of GNSS ZTD observations and GDAS-Derived yotal precipitable water Yuttapong Rangsanseri[1], Weeranat Phasamak[1] and Seubson Soisuvarn[2] *[1]King Mongkut's Institute of Technology Ladkrabang, Thailand, [2]NOAA/NESDIS/Center, USA*
ThP-48	15:30-17:00	3D modelling of underground and surface utilities mapping with integration of attributes using VBA MACRO A.S.Mohammed Abdul Athick[1] and Manikandan Sathyanarayanan[2] *[1]National Central University, China Taipei, [2]National Taiwan University, China Taipei*
ThP-49	15:30-17:00	The development of consumable hyperspectral spectral imager Long-Jeng Lee[1], Yu-Chuan Lin[1], Victor Hao[2], Ming-Hsien Chou[3] and Yuan Shen[4] *[1]National Applied Research Laboratories, China Taipei, [2]Isuzo Optics Corporation, China Taipei, [3]HC Photonics Corporation, China Taipei, [4]National Chung Hsing University, China Taipei*
ThP-50	15:30-17:00	In-flight geometrical calibration for formosat-5 panchromatic and multispectral satellite images Li-Hsueh Chang[1], Tee-Ann Teo[2], Shih-Chia Peng[1], Tun-Yu Liao[1], Nai-Yu Chen[1] and Cynthia Liu[1] *[1]National Space Organization, China Taipei, [2]National Chiao Tung University, China Taipei*
ThP-51	15:30-17:00	Gravity effect evaluation for TMA telescope based on CMM measurement Kun-Huan Wu, Shenq-Tsong Chang, Yu-Chuan Lin, Po-Ming Lin, Yu Hsiang Lin and Chun-Chieh Lien *Taiwan Instrument Research Institute, National Applied Research Laboratories, China Taipei*
ThP-52	15:30-17:00	JPEG2000 image compression for high resolution remote sensing instruments on satellites Nuan-Ya Huang, Jer Ling, Ming-Yuan Yeh, Li-Yu Chang, Albert Lin, and Po-Yen Huang *National Space Organization, China Taipei*
ThP-53	15:30-17:00	Eight ywars operation of COMS for the ocean monitoring mission1 Young-Min Cho, Hye-Won Kim and Eun-Bin Park *Korea Aerospace Research Institute, Korea*
ThP-54	15:30-17:00	The status of geostationary environment monitoring spectrometer Hyunkee Hong, Sang-Kyun Kim, Jong-Min Yoon, Won Jun Choi, Kyung-Jung Moon, Sang-Min Kim and Chang Suk Lee *National Institute of Environmental Research, Korea*
ThP-55	15:30-17:00	Preliminary development of radiometric calibration plan for FORMOSAT-8 remote sensing instrument Kuo-Hsien Hsu and Yun-Shan Lee *National Space Organization, China Taipei*
ThP-56	15:30-17:00	NovaSAR-1 – first year of operation, and next steps Victoria Irwin and Alex da Silva Curiel *Surrey Satellite Technology Ltd, UK*
ThP-57	15:30-17:00	A Watermarking technique for hyperspectral images using DWT and hessenberg matrix Geeta Kasana *Thapar Institute of Engineering and Technology, India*

ThP-58 15:30-17:00 **Extraction of rocks and boulders on natural terrain using semantic segmentation**
Shenlu Jiang, Coco Yin Tung Kwok and Man Sing Wong
The Hong Kong Polytechnic University, Hong Kong, China

ThP-59 15:30-17:00 **Detection of deforestation on protected forest areas using multi-sensor platform and time series analysis - an environmental monitoring tool**
Ivy Jean Dilig and Nash Frederic Prado
University of the Philippines Diliman, Philippines

ThP-60 15:30-17:00 **An efficient method for automatic land-cover classification with high resolution imagery using the object-oriented paradigm**
Bo Zhao[1], Jürgen Pilz[2], Fan Yang[3,4,5], Junping Shen[1]
[1]Beijing PIESAT Information Technology Co.,Ltd, China, [2]Alpen-Adria-Universität Klagenfurt, Austria, [3]Beijing Institute of Geology for Mineral Resources, China, [4]Chinese Academy of Geological Sciences, China, [5]Chinese Academy of Sciences, China

ThP-61 15:30-17:00 **Land cover classification on the korean peninsula using multi-temporal MODIS and GOCI data**
Myunghee Jung[1] and Sang Hoon Lee[2]
[1]Anyang Univ., Korea, [2]Gachon Univ., Korea

ThP-62 15:30-17:00 **Accuracy improvement and blending of MHS, SSMIS, and GMI rain rate product using DNN and EBMA**
Kwangjin Kim and Yang-Won Lee
Pukyong Nat. Univ., Korea

ThP-63 15:30-17:00 **The effect of the principal component analysis in convolutional neural network for hyperspectral image classification**
Taehong Kwak, Ahram Song and Yongil Kim
Seoul National Univ., Korea

ThP-64 15:30-17:00 **Surface reflectance products from the geostationary environmental monitoring sensor**
Kwon-Ho Lee[1] and Jung-Moon Yoo[2]
[1]Gangneung-Wonju National University, Korea, [2]Ewha Womans University, Korea

ThP-65 15:30-17:00 **Application of GEO satellite observation data for atmospheric correction of LEO satellite image**
Kwon-Ho Lee[1] and Jong-Min Yeom[2]
[1]Gangneung-Wonju National University, Korea, [2]Korea Aerospace Research Institute, Korea

ThP-66 15:30-17:00 **Multimodal merging of satellite imagery with meteorological and power plant data in deep convolutional neural network for short-term solar energy prediction**
Gwangjoong Kim, Hunsoo Song, Minho Kim and Yongil Kim
Seoul National Univ., Korea

ThP-67 15:30-17:00 **Evaluating suitable flight height and camera angle of a UAV for identifying number plates of motorbikes**
Kento Kojima, Kazuhiro Naoki and Kohei Cho
Tokai University, Japan

ThP-68 15:30-17:00 **Use of unmanned aerial vehicle data in near-infrared region to estimate water quality of Miharu dam reservoir, Japan**
Yoichi Kageyama[1], Shin Totsuka[1], Masato Ishikawa[2], Bunyu Kobori[2] and Daisuke Nagamoto[3]
[1]Akita University, Japan, [2]Civil Engineering & Eco-Technology Consultants Co., Miyagi, Japan, [3]Civil Engineering & Eco-Technology Consultants Co., Hokkaido, Japan

ThP-69 15:30-17:00 **Comparison between GPM and gridded precipitation product from interpolated rain gauge measurements**
Archie Veloria[1], Gay Jane Perez[1], Giovanni Tapang[1] and Josefino Comiso[1,2]
[1]University of the Philippines Diliman, Philippines, [2]NASA Goddard Space Flight Center, USA

ThP-70 15:30-17:00 **Detailed characteristics of fog occurrences in South Korea using the recent 3 years of visibility data**
Tae-Ho Kang and Myeong-Seok Suh
Kongju National Univ., Korea

ThP-71 15:30-17:00 **Space comfort analysis of university canteen based on big data**
Ye-Qing Ni, Tao Wang, Xiao-Juan Li and Ying-bin Hu
Capital Normal Univ., China

ThP-72	15:30-17:00	Low-rank and sparse matrix decomposition with orthogonal complement subspace projection for hyperspectral anomaly detection Xing Wu and Xia Zhang *University of Chinese Academy of Sciences, China*
ThP-73	15:30-17:00	Determining the coefficient of circular template for fast similarity measurement in image registration Chul-Soo Ye *Far East Univ., Korea*
ThP-74	15:30-17:00	Efficiency evaluation of AR model-based linear prediction for improvement of spatial-resolution of spotlight mode KOMPSAT-5 image Seung-Jae Lee, Sun-Gu Lee, Do-Chul Yang and Dong-Hyun Kim *Korea Aerospace Research Institute, Korea*
ThP-75	15:30-17:00	Development of hybrid fog detection algorithm using various fog characteristics Ji-Hye Han, Myoung-Seok Suh, Na-Young Roh and Ha-Yeong Yu *Kongju National Univ., Korea*
ThP-76	15:30-17:00	Using GEE to estimate soil moisture with data augmentation and SVR Wei Xu, Qiming Qin and Zhaoxu Zhang *Peking University, China*
ThP-77	15:30-17:00	Self-evaluation of band matching quality in KOMPSAT-3A data processing procedure Jae-Heon Jung, Dae-Soon Park and Youkyung Seo *Korea Aerospace Research Institute, Korea*
ThP-78	15:30-17:00	Applying the artificial neural networks and unmanned aerial vehicle images to classify various crop types Wan-Li Sun, Shu-Ting Kuo, Chien-Erh Wang, Wan-Chen Lin, Ming-Yun Chang, Yu-Cheng Hsiao and Re-Yang Lee *Feng-Chia University, China Taipei*
ThP-79	15:30-17:00	Land cover classification for economic crops in Thailand using convolutional neuran networks Tanakorn Sritarapipat[1], Siam Lawawirojwong[2] and Panu Srestasathiern[2] *[1]Suranaree University of Technology, [2]Thailand and Geo-Informatics & Space Technology Development Agenc, Thailand*
ThP-80	15:30-17:00	Development of quality indicator for stereoscopic plotting using orientation parameters of UAV images Pyung-Chae Lim[1], Hae-Min Lee[1], Yeong-Min Cho[1], Jung-Il Shin[1], Taejung Kim[1] and Suk Bae Lee[2] *[1]Inha Univ., Korea, [2]Gyeongnam National Univ., Korea*
ThP-81	15:30-17:00	Multispectral denoising for multi-purpose satellites imaging sensor using wavelet domain deep residual laerning Joonyoung Song and Jong Chul Ye *Korea Advanced Institute of Science and Technology, Korea*
ThP-82	15:30-17:00	A remote sensing information system for mariculture environment parameters Xufeng Xing, Shiyi Xie, Xiaohong Peng and Miaofen Huang *Guangdong Ocean University, China*
ThP-83	15:30-17:00	Study on vertical distribution model of backscatter coefficient in petroleum-polluted water bodies Miaofen Huang, Weijian Luo, Yingen Huang and Bingcai Chen *Guangdong Ocean University, China*
ThP-84	15:30-17:00	A study on the development of open source-based image mosaicking software Seo-I Cheon, Gyeong-Min Kang and Kyeong-Hwan Choi *GEO C&I Co., Ltd, Korea*
ThP-85	15:30-17:00	Comparison between UNet, modified UNet and dense-attention network (DAN) for building extraction from tripleSat imagery Xingjue Wang[1], Xiaoman Huang[1], Chong Chen[1], Bin Zhou[1], Jianjun He[2] and Ting Chen[2] *[1]Twenty First Century Aerospace Technology (Asia) Pte. Ltd., Singarpore, [2]Twenty First Century Aerospace Technology Co., Ltd., China*

ThP-86	15:30-17:00	Doppler frequency performance of KOMPSAT-5 measured from worldwide uniform backscattering coefficient area Ho-Ryung Jeong, Dong-Hyun Kim, Do-Chul Yang and Dong-Han Lee *Korea Aerospace Research Institute, Korea*
ThP-87	15:30-17:00	Application of deep learning algorithms considering spatio-temporal features for crop classification Min-Gyu Park, No-Wook Park *Inha University, Korea*
ThP-88	15:30-17:00	Effects of class purity of training data on crop classification using 2D-CNN Soyeon Park, No-Wook Park *Inha University, Korea*
ThP-89	15:30-17:00	Filtering of bridge-slab bending effect in terrestrial laser scanning Masafumi Nakagawa[1], Koichi Sasaki[2], Shigeo Matsuda[2] and Hirohito Ito[3] *[1]Shibaura Institute of Technology, Japan, [2]RIEGL JAPAN Ltd., Japan, [3]Central Consultant Inc., Japan*
ThP-90	15:30-17:00	Real-time mapping of construction workers using multilayered LiDAR Masafumi Nakagawa[1], Masayoshi Kaseda[1] and Masakuni Taguchi[2] *[1]Shibaura Institute of Technology, Japan, [2]Azuma Kigyo Co. Ltd., Japan*
ThP-91	15:30-17:00	Lunar crater identification and counting by deep learning Haingja Seo, Sang Min Park, Hyun Ho Lee, Hansol Jeong and Myungjin Choi *Inspace, Korea*
ThP-92	15:30-17:00	A study on performance improvement of residual NUC algorithm by analyzing side-slither images of KOMPSAT-3A You-Kyung Seo, JaeHeon Jeong, DaeSoon Park, DooChun Seo, DongHan Lee and HyoSuk Lim *Korea Aerospace Research Institute, Korea*
ThP-93	15:30-17:00	A ground reference target detection method for automatic vicarious calibration of UAV multispectral image Jung-Il Shin, Yeong-Min Cho, Hae-Min Lee, Pyung-Chae Lim and Taejung Kim *Inha Univ., Korea*
ThP-94	15:30-17:00	Combination of 2D-CNN and random forest models for crop classification with UAV imagery Geun-Ho Kwak[1], Chan-Won Park[2], Kyung-Do Lee[2], Sang-Il Na[2], Ho-Yong Ahn[2] and No-Wook Park[1] *[1]Inha University, Korea, [2]National Institute of Agriculture Sciences, Korea*
ThP-95	15:30-17:00	An analysis of the effect of tilt angle on MTF of KOMPSAT-3A Hyun-ho Kim, DooChun Seo, JaeHeon Jeong, DaeSoon Park and DongHan Lee *Korea Aerospace Research Institute, Korea*
ThP-96	15:30-17:00	Automatic colorization of grayscale aerial imagery using XGBoost regression Hye Jin Kim[1], Yang Dam Eo[1], Dae Kyo Seo[1], Jin Sue Park[1], Geun Woo Paik[1] and Wan Yong Park[2] *[1]Konkuk University, Korea, [2]Agency for Defense Development, Korea*
ThP-97	15:30-17:00	Evaluation on structure from motion using binary robust invariant scalable keypoints Min-Lung Cheng and Masashi Matsuoka *Tokyo Tech, Japan*
ThP-98	15:30-17:00	Conformity analysis on the use of hydro enforcement method to produce digital terrain model using the LiDAR data as Indonesian basic geospatial information, case study: Sumedang district, West Java, Indonesia Ilham Jamaluddin, William Krista Mahendra, Desrina Putri and Muhammad Kamal *Universitas Gadjah Mada, Indonesia*
ThP-99	15:30-17:00	Mapping fine-scale spatial distribution of population using remote sensing data and POIs with deep learning Tran Thanh Dan[1,2], Manzul Kumar Hazarika[1] and Hiroyuki Miyazaki[2] *[1]Asian Institute of Technology, Thailand, [2]The University of Tokyo, Japan*

ThP-100 15:30-17:00 **Towards the transformation of Digital Elevation Model (DEM) into elevation profile using aggregated transect line**
Rolyn C. Daguil and Ryan O. Cuarez
Caraga State University, Philippines

ThP-101 15:30-17:00 **Evaluation of rotation invariant and equivariant CNN for catadioptric panorama**
Hyung-Woo Kim and Yang-Won Lee
Pukyong National University, Korea

ThP-102 15:30-17:00 **SAR layover correction using digital surface model**
Chi-Chuan Lo and Fuan Tsai
National Central University, China Taipei

ThP-103 15:30-17:00 **Detection and mapping of harmful algal bloom using Geostationary Ocean Color Imager(GOCI) and machine learning**
Suho Bak, Dohyun Hwang, Unuzaya Enkhjargal and Hongjoo Yoon
Pukyong National University, Korea

ThP-104 15:30-17:00 **Experimental of combines drone technique and resistivity magnetic method to determine the subsurface archaeological anomalies in Bujang valley, Kekah, Malaysia.**
Shairatul Akma Roslan[1], Mohd Fitri Mohd Yakub[1], Shuib Rambat[1], Mokhtar Saidin[2], Sharifah Munawwarah Syed Mohd Putra[1], Normaisharah Mamat[1] and Mohd Zamzuri Ab Rashid[1,3]
[1]Universiti Teknologi Malaysia, Malaysia, [2]Universiti Sains Malaysia, Malaysia, [3]Universiti Teknikal Malaysia Melaka

ThP-105 15:30-17:00 **Data mining application to estimate canopy cover based on landsat 8 and LiDAR Data for digital forests classification using ANFIS algorithm**
Arif Kurnia Wijayanto, Lilik Budi Prasetyo, Yudi Setiawan and Sahid Agustian Hudjimartsu
IPB University (Bogor Agricultural University), Indonesia

ThP-106 15:30-17:00 **Geocoding for post-disaster compensation projects in Sri Lanka (special reference to selected disaster prone areas)**
Rathnayaka, R.M.P.S. and Gunawardena, G.M.W.L.
University of Moratuwa, Sri Lanka

ThP-107 15:30-17:00 **Soil survey implementation using Raspberry Pi through colorimetric determination of nitrogen, phosphorus, potassium, and pH level**
Meo Vincent Caya, Aaron Jeremiah Arcagua, Dred Roie Cleofas, Roland Neil Hornada and Alejandro H. Ballado Jr.
Mapúa University, Philippines

ThP-108 15:30-17:00 **Variety identification of grape juice based on imaging spectral data**
Yi Cen, Linshan Zhang, Xuejian Sun and Lifu Zhang
Chinese Academy of Sciences, China

ThP-109 15:30-17:00 **Multi-sensor mapping and estimation of seagrass aboveground blue carbon stocks using landsat oli and etm+ along merambong coastal water**
Dalhatu Aliyu Sani[1,2] and Mazlan Hashim[1]
[1]The Univ. of Teknologi Malaysia, Malaysia, [2]The Univ. of Yusuf Maitama Sule, Nigeria

ThP-110 15:30-17:00 **Statistical assessment of the influence of hydrometeorological factors on fine dusts**
Seulchan Lee, Jaehwan Jeong and Minha Choi
Sungkyunkwan Univ., Korea

ThP-111 15:30-17:00 **Soil moisture estimation based on water cloud model at the mountainous area**
Seongkeun Cho, Jaehwan Jeong, Jongjin Baik and Minha Choi
Sungkyunkwan Univ., Korea

4. Special Session

ACRS2019 is an annual conference for exchanging latest development and information to promote remote sensing technology. For a productive and exciting experience during ACRS2019, We provide the opportunity to organize Special Sessions in DCC 1F Conference hall.

• Special Session 1 : Application of CAS 500-1/2 Image Utilization - 1
Application of CAS 500-1/2 Image Utilization - 2

Date / Time	October 14 (Mon), 13:30 ~ 17:00 / MoSS1, MoSS2
Room	SS (DCC 1F, #101+102)
Session Chairs	Dr. Jung-Il Shin (Inha University, Korea) Prof. You-Kyung Han (Kyungpook National University, Korea)
Organization	Inha University

Code	Time	Title	Author(s)
	13:30-13:40	Opening Address	
MoSS1-1	13:40-14:00	Improving Sensor Model Accuracy using Multi-band and Multi-patch based Matching	Jong-Hwan Son, Wansang Yoon, Hyeongjun Park, Taejung Kim (Inha University)
MoSS1-2	14:00-14:20	Estimation of global image fusion parameters for Kompsat-3a	Sung-Hwan Park (University of Seoul)
MoSS1-3	14:20-14:40	Algorithm and System Development for Automation-based Geospatial Feature Extraction using High Resolution Satellite Imagery	Jong-Hun Lee, Dong-Gook Lee, Dae-Sick Bang, Sung-Geun Park, Hyun-Jik Lee (Sangji University)
MoSS1-4	14:40-15:00	Accuracy Analysis of using Intersection over Union at Normalized Difference Vegetation Index	Hyun Choi (Kyungnam University)
	15:00-15:45	Break	
MoSS2-1	15:45-16:05	DTM Generation from KOMPSAT-3A Stereo Images by Utilizing an Existing Low-resolution DTM	Heeran Ahn, Taejung Kim (3DLabs Co., Ltd.)
MoSS2-2	16:05-16:25	Object-Based Change Detection of VHR Imagery Based on Extension of Various Pixel-Based Methods	Sejung Jung, Won Hee Lee, Youkyung Han (Kyungpook National Univeristy)
MoSS2-3	16:25-16:45	A Study on Urban Change Detection Using Stereo Satellite Data	Yeongjae Jang, Jaehong Oh (Korea Maritime and Ocean University)
	16:45-17:00	Project discussions & conclusions	

• Special Session 2 : Current Satellite Remote Sensing status and future opportunities in Asia - 1
Current Satellite Remote Sensing status and future opportunities in Asia - 2

Date / Time	October 15 (Tue), 09:00 ~ 12:30 / TuSS1
Room	SS (DCC 1F, #101+102)
Session Chairs	Prof. Kohei Cho (Tokai University, Japan) Prof. Lal Samarakoon (AIT, Thailand)
Organization	AARS

Code	Time	Title	Speaker
TuSS1-8	09:00-09:20	National Space Organization & Space Program (China)	Prof. Gu Xingfa, Director, Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Sciences
TuSS1-7	09:20-09:40	National Space Organization & Space Program (China-Taipei)	Dr. Ms. Li-Hsueh Chang Satellite image division, National Space Organization, National Applied Research Laboratories (NSPO)
TuSS1-6	09:40-10:00	National Space Program and EO activities (India)	Dr. Sameer Saran, Head Geoinformatics Department, Indian Institute of Remote Sensing (ISRO)
TuSS1-5	10:20-10:40	National Space Program and EO activities (Japan)	Dr. Sinichi Sobue, Japan Aerospace Exploration Agency (JAXA)
	10:40-11:00	Tea/Coffee	
TuSS1-4	11:00-11:20	National Space Program and EO activities (Korea)	Dr. Hyo-Suk Lim, Executive Director of Satellite Operation & Application Center, KARI
TuSS1-3	11:20-11:40	National Space Program and EO activities (Thailand)	Geo-Informatics and Space Technology Development Agency (GISTDA)
TuSS1-2	11:40-12:00	From 400m to 30cm and Analytics; Journey for Innovation in Satrec Initiative	Dr. Eugene D. Kim Business Development Director, Satrec Initiative Co. Ltd, Korea
TuSS1-1	12:00-12:20	Capacity building in satellite technologies and Earth observation data utilization. Know-how transfer programmes for sustainable development.	Ms. Kasia Clatworthy, Know-how Transfer and Training Business Line Manger, Surrey Satellite Technology LTD, UK

• Special Session 3 : JAXA Special Session on Sustainable Development using Japanese Satellites - 1
JAXA Special Session on Sustainable Development using Japanese Satellites - 2

Date / Time	October 15 (Tue), 13:30 ~ 17:30 / TuSS3, TuSS4
Room	SS (DCC 1F, #101+102)
Session Chairs	Dr. Shinichi Sobue (JAXA, Japan)
Organization	Japan Aerospace Exploration Agency (JAXA)

Code	Time	Title	Speaker
-	13:30–13:40	Welcome and Appreciation of Prof. Shimoda for his dedication to satellite remote sensing and to AARS/ACRS	Prof. Kohei Cho, General Secretary AARS
TuSS3-1	13:40–14:00	JAXA Space Technology of ALOS series and Initiatives for Sustainable Development in the Asia and the Pacific	Dr. Shinichi Sobue (JAXA)
TuSS3-2	14:00–14:20	A Time Series of Land Subsidance in Busan, Korea with ALOS PALSAR Multi-Temporal Observations	Mr. Seo-Woo Park, Pusan University, South Korea
TuSS3-3	14:20–14:40	Damage Assessment Using ALOS-2/PALSAR-2 for the 2018 Earthquake in Palu, Sulawesi, Indonesia	Dr. Nopphawan Tamkuan, Yamaguchi University, Japan
TuSS3-4	14:40–15:00	Mapping and Detecting Changes of Mangrove over China from 1996 to 2018 with JERS-1, PALSAR and PALSAR-2	Mr. Yuhan Zheng, University of Tokyo, Japan
TuSS3-5	15:00–15:20	Multi-Stage Four-Component Decomposition for Polarimteric SAR Imagery	Dr. Ken Yoong Lee, CRISP, Singapore
	15:20–15:40	Coffee/Tea Break	
TuSS4-1	15:40–16:00	Global Change Observation Mission – Water (GCOM-W) Evaluation of AMSR2 Thin Ice Area Extraction Algorithm Applied to the Sea Ice Zones of the Northern Hemisphere 211	Prof. Kohei Cho, Tokai University, Japan
TuSS4-2	16:00–16:20	2018-2019 observations by Global Change Observation Mission – Climate (GCOM-C)	Dr. Tatsuyuki Sagawa (JAXA)
TuSS4-3	16:20–16:40	Estimation of Forest Above-Ground Biomass using random forest Algorithm Based on Fusion of ALOS PALSAR and Landsat 5TM imageries	Mr. Chathumal M.W., Asian Institute of Technlogy, Thailand
TuSS4-4	16:40–17:00	Brick Kiln Detection in North India with PALSAR and Sentinel imagery using Deep Learning of Small Datasets	Dr. Prakhar Misra, Tokyo University, Japan
TuSS4-5	17:00–17:20	Spatial Mapping of Agricultural Green House Gas Emission for Implementing Paris Agreement on Climate Change in Vietnam	Ms. Thao Tong, Hochiminh City University of Technology, Vietnam
-	17:20–17:30	Discussions and Closing	Dr. Sobue and Dr. Sagawa

• Special Session 4 : KOMPSAT Satellite Imagery Commercial Users S/S

Date / Time	October 16(Wed), 11:00 ~ 12:30 / WeSS1
Room	SS (DCC 1F, #101+102)
Session Chairs	Dr. Choe Nammi (KARI, Korea)
Organization	Korea Aerospace Research Institute (KARI)

Code	Speaker
	[Welcome Address] Dr. Lim Hyo-suk (KARI, Korea)
WeSS1-1	URSA (USA)
WeSS1-2	ISRO NRSC (India)
WeSS1-3	DOST-ASTI (Philippines)
WeSS1-4	SKYWATCH (Canada)

• Special Session 5 : Space for Women: Remote Sensing in Asia

Date / Time	October 16 (Wed), 12:30 ~ 13:30 / WeSS2
Room	SS (DCC 1F, #101+102)
Organization	Korea Aerospace Research Institute (KARI)

Code	Program
WeSS2-1	1) Session Background - Introduction to UN's "Space for Women Project" – What is it and Why it is Relevant to Asian Remote Sensing Community?
WeSS2-2	2) Panel Discussion - A group of panelist will discuss gender issues, including ways to promote capacity building and empowerment of women in the Asian Remote Sensing community.

• Special Session 6 : Korea-China Remote Sensing forum

Date / Time	October 16 (Wed), 13:30 ~ 17:00 / WeSS3, WeSS4
Room	F (DCC 1F, #108)
Session Chairs	Woo-Kyun Lee (Korea University, Korea)
Organization	Korea Forest Service

Code	Time	Program	Speaker
	13:30-13:40	Opening	
WeSS3-1	13:40-14:20	Practices in applying satellite data to the forest sector	Han Aihui, China
WeSS3-2	14:20-15:00	Organization and operation of China's satellite data management center	Wang Wei, China
	15:00-15:10	Coffee Break	
WeSS4-1	15:10-15:40	Current status of National Meteorological Satellite Center and cooperation suggestion for using satellite data in forest	National Meteorological Satellite Center, Korea
WeSS4-2	15:40-16:10	Forest resource monitoring using RS and AI technology	Korea Forest Research Institute, Korea
WeSS4-3	16:10-16:40	Monitoring forest health and damage using time-series satellite images	Korea Forest Research Institute, Korea
	16:40-16:50	Coffee Break	
	16:50-	Panel discussion	

• Special Session 7 : 1. Interoperable Platform Using Earth Observation Data: EOPEN solution for Food Security Use Case
2. Interoperable Platform Using Earth Observation Data: EOPEN Use Cases and Platform Demonstration

Date / Time	October 17(Thu), 09:00 ~ 12:30 / ThSS1, ThSS2
Room	SS (DCC 1F, #101+102)
Session Chairs	Prof. Woo-kyun Lee (Korea University, Korea) Guido Vingione (Serco S.p.A, Italy)
Organization	Korea University

Code	Title	Speaker
ThSS1-1	Interoperable Platform Using Earth Observation Data: EOPEN's Overall Concept	Guido Vingione
ThSS1-2	Continuous and Transparent EO, Meteo and Social Media Data Access	Ioannis Papoutsis
ThSS1-3	H2020 EOPEN – An Interoperable Platform	Leslie Gale
ThSS1-4	Knowledge Discovery and Data Analytics from Earth Observation, Meteorological and Social Media Data	Ilias Gialampoukidis
ThSS1-5	Semantic Fusion of Heterogeneous Data Sources for Decision Making and Decision-Support Systems	Stefanos Vrochidis
ThSS1-6	PUC 2: Large Scale Monitoring of Food Security Using Big Earth Data	Vassilis Sitokonstantinou
ThSS1-7	Platform Based Deep-Learning Applications as a Solution for Satellite Big Data Analysis: The Case of Rice Paddy Detection in South Korea	Hyun-Woo Jo
	Break	
ThSS2-1	H2020 EOPEN PUC 1: Flood Use Case 'Scenario' for Vicenza	Francesco Zaffanella
ThSS2-2	Climate Change Use Case for Finland	Ari Karppinen
ThSS2-3	H2020 EOPEN – A Platform for Developing Distributed Applications	Bernard Valentin
ThSS2-4	H2020 EOPEN – Interactive Demo Session	Bernard Valentin

• Special Session 8 : Research on analytical technique for satellite observation of Arctic sea ice - 1
Research on analytical technique for satellite observation of Arctic sea ice - 2

Date / Time	October 17(Thu), 13:30 ~ 17:00 / ThSS3, ThSS4
Room	SS (DCC 1F, #101+102)
Session Chairs	Hyun-cheol Kim (Korea Polar Research Institute, Korea)
Organization	Korea Polar Research Institute

Code	Time	Title	Author(s)
ThSS3-1	13:30-13:50	Digital surface model generation for Arctic sea-ice	Jae-In Kim, Chang-Uk Hyun, Hyangsun Han, and Hyun-cheol Kim (Korea Polar Research Institute, Korea)
ThSS3-2	13:50-14:10	Sentinel-1 SAR based sea ice classification for winter season	Jeong-Won Park[1], Anton A. Korosov[2], Mohamed Babiker[2], Morten W. Hansen[2], Joong-Sun Won[3], and Hyun-cheol Kim[1] ([1]Korea Polar Research Institute, Republic of Korea, [2]Nansen Environmental and Remote Sensing Center, Norway, [3]Yonsei University, Korea)
ThSS3-3	14:10-14:30	AI detection and tracking of sea ice using Sentinel-1 data	Hyungyun Jeon[1], Duk-jin Kim[1], Jungpyo Hong[1], and Seung-Hee Kim[2] ([1]Seoul National University, Korea, [2]Korea Polar Research Institute, Korea)
ThSS3-4	14:30-14:50	Flexural strength of Arctic sea ice using spaceborne polarimetric SAR data	Seung Hee Kim, Hyangsun Han, Jeong-Won Park, Chang-Uk Hyun, Sungjae Lee, Eun-Jin Yang, and Hyun-cheol Kim (Korea Polar Research Institute, Korea)
ThSS3-5	14:50-15:10	SAR destructive multiplicative noise effects analysis based on raw data evaluation and de-speckling filter application	Iman Heidarpour Shahrezaei and Hyun-cheol Kim (Korea Polar Research Institute, Korea)
		Break	
ThSS4-1	15:40-16:00	Tracing the sea ice motion in the Arctic Ocean using satellite and model data	Young Baek Son and Gwang Seob Park (Korea Institute of Ocean Science and Technology, Korea)
ThSS4-2	16:00-16:20	Estimation of daily Arctic sea ice thickness using passive microwave	Young Jun Kim[1], Hyun-cheol Kim[2], Daehyeon Han[1], Jungho Im[1], and Sanggyun Lee[3] ([1]Ulsan National Institute of Science and Technology, Korea, [2]Korea Polar Research Institute, Korea, [3]University College London, UK)
ThSS4-3	16:20-16:40	Thin sea ice thickness and small-scale roughness retrieval using SMAP and SMOS observations	Suna Jo[1], Hyun-cheol Kim[2], and Sungwook Hong[1] ([1]Sejong University, Korea, [2]Korea Polar Research Institute, Korea)
ThSS4-4	16:40-17:00	Evaluation of net radiation data over Arctic region	Minji Seo, Sungwon Choi, Daeseong Jung, Donghyun Jin, and Kyung-soo Han (Pukyong National University, Korea)

• Special Session 9 : Geospatial Education and Outreach: Multi-level Education & Training

Date / Time	October 18(Fri), 09:00 ~ 10:30 / FrSS1
Room	SS (DCC 1F, #101+102)
Session Chairs	Prof. Anjana Vyas (CEPT University, India) Prof. Peter T. Y. Shih (National Chiao-Tung University, China Taipei)
Organization	ISPRS TCV/1

Code	Title
FrSS1-1	The 3S maker contest program promoted by CSPRS
FrSS1-2	Education and research strategies: issues and challenges
FrSS1-3	An introduction of geomatics education in National Cheng-Kung University

5. Student Session

The Student Session is a session dedicated to presentations about universities across Asia with degree programs and research in the fields of remote sensing, photogrammetry, GIS, and other geospatial information sciences. Students are required to give a 10-minute presentation about their university, their research laboratory, ongoing research by students, and student activities. The Student Session will be held in DCC 1F Special Session Room, on October 16, 2019.

• WEBCON (WeSS6)

Date / Time	October 16 (Wed) 09:00 – 10:30
Room	SS (DCC 1F, #101+102)
Session Chairs	Prof. Kohei Cho (Tokai University, Japan) Prof. Fuan Tsai (National Central University, China Taipei) Prof. Paolo Gamba (Pavia University, Italy) Prof. Taejung Kim (Inha University, Korea)

• White Elephant Session (WeSS5)

Date / Time	October 16 (Wed) 13:30 – 15:00
Room	SS (DCC 1F, #101+102)
Session Chairs	Prof. Armin Gruen (ETH Zurich, Switzerland)

Time	Title	Speaker
13:30-14:00	Thesis Writing	Prof. Armin Gruen (ETH Zurich, Switzerland)
14:00-14:20	How to catch the attention of a reviewer: the right ingredients for a scientific paper	Prof. Paolo Gamba (Pavia University, Italy)
14:20-14:40	How to give a presentation	Prof. Shunji Murai (Tokyo University, Japan)
14:40-15:00	Project Proposal Writing	Prof. Kohei Cho (Tokai University, Japan)

• Student Session (WeST)

Date / Time	October 16(Wed), 15:30 ~ 17:00
Room	SS (DCC 1F, #101+102)
Session (WeST)	Student Session
Chairs	Ms. Sheryl Rose Reyes (United Nations University, Japan) Mr. Sung-Joo Yoon (Inha University, Korea)

Code	Program(Affiliation)	Speaker
WeST-1	Presentation about AARS Student Activities and the ISPRS Student Consortium	Sheryl Rose Reyes (Chair, ISPRS Student Consortium)
WeST-2	Institute of Environmental Science and Meteorology, University of the Philippines	Archie Veloria (Philippines)
WeST-3	Inha University	Jong Hwan Son (South Korea)
WeST-4	Wataru Takeuchi Laboratory The University of the Tokyo	Xuan Truong Tranh (Japan / Viet Nam)
WeST-5	National Central University	Hsuan Yi Li (China Taipei)
WeST-6	Department of Geodetic Engineering University of the Philippines	Roseanne Ramos (Philippines)
WeST-7	Ulsan National Institute of Science and Technology	Young Jun Kim (South Korea)
WeST-8	Shibaura Institute of Technology	Yuichiro Yamaguchi (Japan)
WeST-9	Tongji University	Cao Yujie (China)
WeST-10	National Taiwan Normal University	Yungmin Tsai (China Taipei)
WeST-11	Sultan Qaboos University	Ahsan Ali (Oman)
WeST-12	Universiti Teknologi Petronas	Naheem Adebisi (Malaysia)

IV. Exhibition & Sponsor

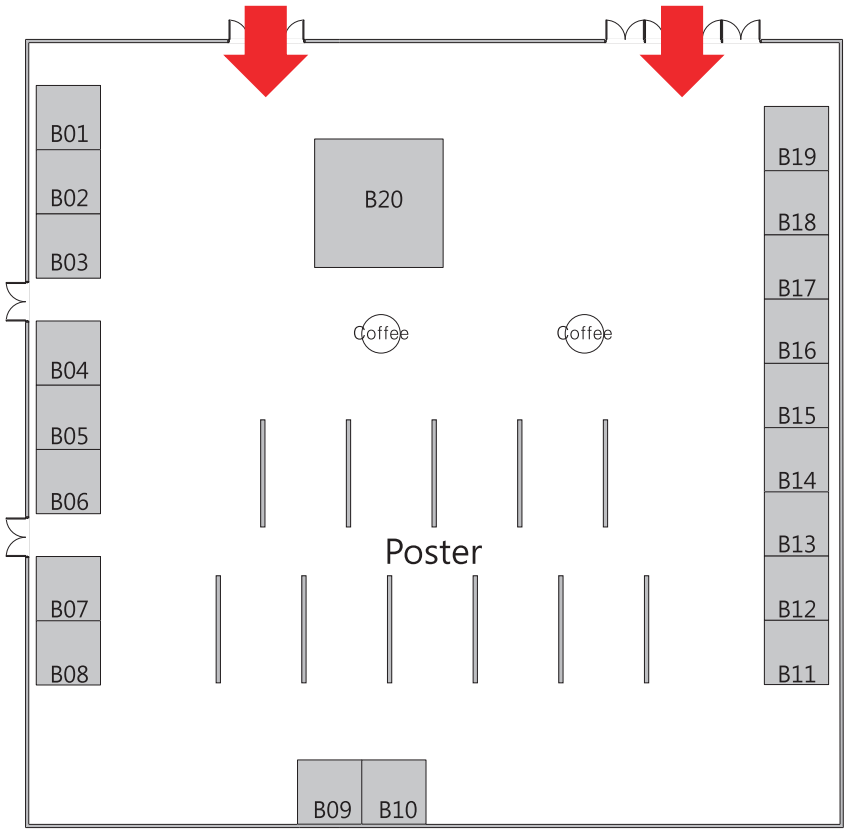
1. Exhibition Information

• Overview

- Location DCC 1F, Exhibition Hall
- Schedule

Exhibition Plan	Date	Time
Booths Decoration	October 13 (Sun)	15:00 ~ 18:00
Exhibition	October 14 (Mon) ~ 17 (Thu)	08:30 ~ 18:00
Booths Dismantling	October 17 (Thu)	18:00 ~ 20:00

• Layout



• Exhibitor's List

1	Booth No. B01			
	Surrey Satellite Technology Ltd.			
	Tel	+44-1483-803803	Fax	+44-1483-803804
	E-Mail	info@sstl.co.uk	Web site	www.sstl.co.uk
2	Booth No. B02			
	Japan Aerospace Exploration Agency			
	Tel	+81-50-3362-4116	Fax	+81-29-868-2961
	E-Mail	sagawa.tatsuyuki@jaxa.jp	Web site	www.jaxa.jp
3	Booth No. B03			
	Twenty First Century Aerospace Technology (Asia) Pte. Ltd.			
	Tel	+65-6351-1399	Fax	+65-6464-0598
	E-Mail	enquiry@21at.sg	Web site	www.21at.sg
4	Booth No. B04,05			
	KARI (Korea Aerospace Research Institute)			
	Tel	+82-42-860-2114	Fax	+82-42-860-2004
	E-Mail	jymoon@kari.re.kr	Web site	www.kari.re.kr
5	Booth No. B06			
	Beijing PIESAT Information Technology Co., Ltd.			
	Tel	+86-010-82556203	Fax	+86-010-82556924
	E-Mail	niebin@piesat.cn	Web site	www.piesat.cn
6	Booth No. B07			
	Young In Scientific			
	Tel	+82-2-519-7300	Fax	+82-2-519-7400
	E-Mail	youngin@youngin.com	Web site	www.youngin.com
7	Booth No. B08			
	SATELLOGIC			
	Tel	+86-18910982563	Fax	
	E-Mail	shaw@satellogic.com	Web site	www.satellogic.com
8	Booth No. B09			
	PCI Geomatics			
	Tel	+1-905-764-0614	Fax	
	E-Mail	info@pcigeomatics.com	Web site	www.pcigeomatics.com
9	Booth No. B10			
	Planet			
	Tel	+65-9635-9708	Fax	
	E-Mail	jasminerice@planet.com	Web site	www.planet.com

10	Booth No. B11			
	Ministry of Environment, Korea Environment Institute (KEI)			
	Tel	+82-44-415-7826	Fax	+82-44-415-7878
	E-Mail	ejlee@kei.re.kr	Web site	www.ecvam.kei.re.kr
11	Booth No. B12			
	Samwoo Scientific Co.			
	Tel	+82-31-5175-3360	Fax	+82-31-5175-3361
	E-Mail	samwoosc@chol.com	Web site	www.samwoosc.co.kr
12	Booth No. B13,14			
	GEO C&I Co., Ltd.			
	Tel	+82-53-857-7312	Fax	+82-53-857-7313
	E-Mail	sicheon@geocni.com	Web site	www.geocni.com
13	Booth No. B15			
	ST Engineering Geo-Insights Pte. Ltd.			
	Tel	+65-217888	Fax	
	E-Mail	tan.tzehoe@stengg.com	Website	www.geo-insights.ai
14	Booth No. B16			
	SELab, Inc.			
	Tel	+82-2-888-0850	Fax	+82-2-878-1971
	E-Mail	sales@selab.co.kr	Web site	www.selab.co.kr
15	Booth No. B17			
	Korea Polar Research Institute			
	Tel	+82-32-760-5335	Fax	+82-32-760-5398
	E-Mail	kimhc@kopri.re.kr	Web site	www.kopri.re.kr
16	Booth No. B18,19			
	Gaia3D Inc.			
	Tel	+82-2-3397-3475	Fax	+82-2-3397-3478
	E-Mail	sales@gaia3d.com	Web site	www.gaia3d.com
17	Booth No. B20			
	SI Imaging Services			
	Tel	+82-70-7835-1922	Fax	+82-70-7882-6105
	E-Mail	PublicRelations@si-imaging.com	Web site	www.si-imaging.com

• ACRS2019 Exhibitors Directory

Booth No. B01
Surrey Satellite Technology Ltd.

Address	Tycho House, 20 Stephenson Road, Guildford, Surrey GU2 7YE, UK		
Tel	+44-1483-803803	Fax	+44-1483-803804
E-Mail	info@sstl.co.uk	Web site	www.sstl.co.uk

Surrey Satellite Technology Ltd is at the forefront of space innovation and is the world's leading small satellite company, delivering customisable complete mission solutions for remote sensing, science, navigation, telecommunications and space exploration.
Since 1981, SSTL has built and launched more than 60 satellites for 20 international customers, as well as providing training and development programmes, consultancy services, and mission studies for ESA, NASA, international governments and commercial customers.
SSTL is well-known for innovative missions such as the CARBONITE series video imaging satellites, NovaSAR radar imaging satellite and the RemoveDEBRIS technology demonstrator.
Headquartered in Guildford, UK and employs 380 staff.

Booth No. B02
Japan Aerospace Exploration Agency

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The Japan Aerospace Exploration Agency (JAXA) is a core performance agency to support the Japanese government's overall aerospace development and utilization. JAXA conducts integrated operations from basic research and development, to utilization. JAXA obtains an enormous quantity of data from satellites such as the Greenhouse Gases Observation Satellite (GOSAT), the Global Precipitation Measurement/Dual-frequency Precipitation Radar (GPM/DPR), the Global Change Observation Mission (CGOM-W/C), and the Advanced Land Observation Satellite-2 (ALOS-2). JAXA provides accurate and systematic information that elucidates the earth environment change process and supports our lives by continuous earth observation using satellites.

Booth No. B03
Twenty First Century Aerospace Technology (Asia) Pte. Ltd.

Address	61 Science Park Road, #05-17 The Galen, Singapore Science Park II, Singapore 117525		
Tel	+65-6351-1399	Fax	+65-6464-0598
E Mail	enquiry@21at.sg	Web site	www.21at.sg

Twenty First Century Aerospace Technology (Asia) Pte. Ltd. (21AT Asia) has been established in Singapore since July 2014. 21AT Asia is a provider of commercial high-resolution remote sensing imagery products and its value-added services.
Our space technology R&D center in Singapore carry out high-resolution image processing research and development, remote sensing information services and applications, new remote sensing devices and equipment. In Singapore office, we have a team of trained and experienced engineers who will manage, process the data and delivery to the customers globally.

Booth No. B04,05
KARI (Korea Aerospace Research Institute)

Address	169-84, Gwahak-ro, Yuseong-gu, Daejeon, 34133, Republic of Korea		
Tel	+82-42-860-2114	Fax	+82-42-860-2004
E Mail	jymoon@kari.re.kr	Web site	www.kari.re.kr

Satellite development plan of Korea
Role of KARI in satellite application
Introduction of KOMPSAT series
KOMPSAT-3: VHR EO satellite (0.7m GSD)
KOMPSAT-3A: VHR EO + IR satellite (0.55m EO & 5.5m IR GSD)
KOMPSAT-5: X-band SAR satellite (0.85 ~ 20m GSD)
Application of KOMPSAT imagery
Forest fire management using KOMPSAT-3 image
InSAR application using KOMPSAT-5 images
Volcanic eruption management using KOMPSAT-5 images

Booth No. B06

Beijing PIESAT Information Technology Co., Ltd.

Address	The 5th floor, No.A1 Building, Yi Yuan, HaiDian District, Beijing, China		
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Beijing PIESAT Information Technology Co., Ltd. (PIESAT for short) is a Chinese high-tech enterprise specializing in research and application of satellite technology (Remote sensing satellite and Navigation satellite). Founded in 2008, PIESAT keeps on providing professional services and applications of domestic satellites as its mission. PIESAT has independently developed software Pixel Information Expert (PIE), offering its clients integrated solution of geospatial information application.

Booth No. B07

Young In Scientific

Address	Gujeong Building, 22, Apgujeong-ro 28-gil, Gangnam-gu, Seoul, 06030, Republic of Korea		
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Hyperspectral sensors are line-scanning hyperspectral cameras that collect reflected light through an image slit. One row of spatial pixels is collected per frame as motion occurs, with each pixel containing full spectral data. Motion can be accomplished in two ways: either as an airborne deployment or stationary. Headwall's hyperspectral sensors are small, light, and rugged. The simple but elegant all-concentric design uses precisely-engineered master-quality holographic diffraction gratings and mirrors to deliver high signal-to-noise, high spectral and spatial resolution, and a wide, aberration-corrected field of view.

Booth No. B08
SATELLOGIC

Address	6th floor, Eastern District of National Convention Center, Tianchen East Road, Beijing, China		
Tel	+86-18910982563	Fax	
E Mail	shaw@satellogic.com	Web site	www.satellogic.com

Founded in 2010, Satellogic is the first vertically integrated geospatial analytics company driving real outcomes for its customers with planetary-scale insights they can trust. Satellogic is backed by leading strategic and financial supporters including Tencent (China), Pitanga (Brazil), Valor Capital Group (US), and CrunchFund (US).

We are building the first scalable earth observation platform with the ability to remap the entire planet at both high-frequency and high-resolution in order to provide affordable geospatial insights for daily decision making. With our satellites, our unique data set, and our solutions we want to help solve the world's most pressing problems.

Booth No. B09
PCI Geomatics

Address	90 Allstate Parkway, Markham, Ontario, L3R6H3, Canada		
Tel	+1-905-764-0614	Fax	
E Mail	info@pcigeomatics.com	Web site	www.pcigeomatics.com

PCI Geomatics, founded in 1982, is the world leader in geo-imaging products and solutions. PCI Geomatics has set the standard in remote sensing and image processing tools offering customized solutions to the geomatics community in over 135 countries. PCI Geomatics is the developer of **Geomatica®** - a complete and integrated desktop software that features tools for remote sensing, digital photogrammetry, geospatial analysis, map production, mosaicking and more. **Geomatica®** software enables users to apply imagery in support of a wide range of applications such as the environment, agriculture, security and intelligence, defense, as well as in the oil and gas industries.

Booth No. B10
Planet

Address	645 Harrison Street, 4th Floor, San Francisco, CA 94107 USA		
Tel	+65-9635-9708	Fax	
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Planet is an integrated aerospace and data analytics company that operates history's largest commercial fleet of satellites, collecting daily, high resolution imagery of everywhere on earth. Planet's daily snapshot captures a massive amount of information about our changing planet, and is delivered with the software and analytics users need to make critical business decisions. To learn more visit http://www. planet.com.

Booth No. B11
Ministry of Environment, Korea Environment Institute (KEI)

Address	Bldg B. 370 Sicheong-daero, Sejong-si, Republic of Korea		
Tel	+82-44-415-7826	Fax	+82-44-415-7878
E Mail	ejlee@kei.re.kr	Web site	www.ecvam.kei.re.kr

Environment Conservation Value Assessment Map (ECVAM) synthetically classifies the land into 5 levels according to its environmental conservation value. ECVAM is developed by overlapping 57 legislative assessment criteria and 8 environmental-ecological assessment criteria, each assessment criteria containing a specific spatial distribution of environmental information. The result of ECVAM and other environmental spatial information are open to all users by operating the ECVAM web-service system (https://ecvam.kei.re.kr or https://ecvam.neins.go.kr). ECVAM is widely used in fields of strategic environmental impact assessment, environmental impact assessment, establishment of city and environment planning.

Booth No. B12
Samwoo Scientific Co.

Address	F1015 Misa Centum Biz, 45, Jojeong-daero Hanam-si, Gyeonggi-Do, Republic of Korea		
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Portable Spectroradiometer, FieldSpec 4 (Malvern Panalytical)
VNIR Hyperspectral camera, HSC-2 (Senop)
SWIR Hyperspectral camera, Snapscan SWIR (imec)

Booth No. B13,14
GEO C&I Co.,Ltd.

Address	Junmyung Bldg., 435, Hwarang-ro, Dong-gu, Daegu, 41165, Republic of Korea		
Tel	+82-53-857-7312	Fax	+82-53-857-7313
E Mail	sicheon@geocni.com	Web site	www.geocni.com

GEO C&I Co., Ltd. implements the efficient digital national land management by developing the best solution by using the most advanced GeoSpatial Information Technology such as GIS, Cloud, Big Data, Smart IT, etc. We are expanding actively our business to global markets based on the successful performances of "Ulaanbaatar Integrated Land Management System Establishment in Mongolia", "Integrated Water Resources Management System Establishment in Philippine" and "The Establishment of Renewable Energy Master Plan in Cameroon" as KOICA ODA business. In addition, we lead the Global supreme GeoSpatial information technology based on the accumulated technology and know-how so that we promise to satisfy our clients.

Booth No. B15
ST Engineering Geo-Insights Pte. Ltd.

Address	6 Ang Mo Kio Electronics Park Road, #06-03, Singapore 567711		
Tel	+65-217888	Fax	
E Mail	tan.tzehoe@stengg.com	Web site	www.geo-insights.ai

ST Engineering Geo-Insights Pte. Ltd. (GI) is a joint venture company formed between DSO National Laboratories (DSO) and ST Engineering Electronics. Leveraging on the strengths of its parent companies, GI offer analytics, information products and value-added services based on satellite imagery to address growing global demand for timely insights. GI will tap on emerging new space technologies to pursue potential business opportunities for low cost small satellites, or smallsat constellation design, development, manufacturing and operation.

Booth No. B16
SELab, Inc.

Address	8 Nonhyeon-ro 150-gil, Gangnam-gu, Seoul, 06049, Republic of Korea		
Tel	+82-2-888-0850	Fax	+82-2-878-1971
E Mail	sales@selab.co.kr	Web site	www.selab.co.kr

SELab, Inc. has been developing scientifically proven solutions with in-depth knowledge of advanced geospatial analytics and remotely sensed data. Besides, it holds the exclusive rights to distribute ENVI / IDL software throughout South Korea. Today, many organizations from different industries use its solutions to make better decisions.
During ACRS2019 conference, SELab, Inc. will focus on introducing a newly developed ENVI / IDL add-on module. Especially, the company will show the experimental results using PSInSAR and Deep Learning module, respectively.

Booth No. B17
Korea Polar Research Institute

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Tel	+82-32-760-5335	Fax	+82-32-760-5398
E Mail	kimhc@kopri.re.kr	Web site	www.kopri.re.kr

To investigate the cause of changes in the earth environment, Korea Polar Research Institute (KOPRI) is leading multilateral research activities such as the atmosphere over the polar regions, paleoclimate, geological features, geophysics, glacier, meteorite, marine environment, sea ice, and study on living resources.

The Unit of Arctic Sea-Ice Prediction of KOPRI operates the Satellite Remote Sensing & Cryosphere Information Center and produces invaluable space-time information for the Polar Regions by incorporating various remote sensing data. The research activities on cryosphere conducted by the Unit of Arctic Sea-Ice Prediction of KOPRI are exhibited in the booth.

Booth No. B18,19
Gaia3D Inc.,

Address	#702, 278, Beotkkot-ro, Geumcheon-gu, Seoul, Republic of Korea		
Tel	+82-2-3397-3475	Fax	+82-2-3397-3478
E Mail	sales@gaia3d.com	Web site	www.gaia3d.com

mago3D could seamlessly integrate AEC(Architecture, Engineering, Construction) and 3D GIS in web browser using Cesium or Web World Wind. Although there has been numerous attempts to integrate AEC and 3D GIS on a single geospatial platform, the outcome of these attempts are not so satisfactory till to date. Difference of data model, massive number of data to be rendered, big volume of file size are among those major technical barriers that hindered seamless integration of indoor and outdoor space.

Booth No. B20

SI Imaging Services

Address	169-84, Gwahak-ro, Yuseong-gu, Daejeon, Republic of Korea		
Tel	+82-70-7835-1922	Fax	+82-70-7882-6105
E Mail	PublicRelations@si-imaging.com	Web site	www.si-imaging.com

SI Group is consisted of SI Imaging Services (SIIS), Satrec Initiative (SI), and SI Analytics. SIIS is the exclusive worldwide marketing and sales representative of KOMPSAT series KOMPSAT-2, KOMPSAT-3, KOMPSAT-3A and KOMPSAT-5.
SIIS contributes Remote Sensing and Earth observation industries societies by providing very high resolution optical and SAR imag es through over 110 sales partners worldwide.
Customers from industries as well as government and international agencies are using KOMPSAT imagery for their missions and r esearches and achieve good results in several remote sensing applications such as mapping, agriculture, disaster management, a nd so on. SIIS started its business as a satellite image and service provider and extended its business to KOMPSAT operation.

2. Sponsor Information

With thanks to our sponsors and partners

DIME KOFST KOREA TOURISM ORGANIZATION

KARI 한국항공우주연구원 KOREA AEROSPACE RESEARCH INSTITUTE

JAXA

ST Engineering

GEOSAT-I

V. General Information

1. Official & Social Events

• Official Event

Opening Ceremony

The opening ceremony of ACRS2019 is held on Monday, October 14 at Grand Ballroom, DCC. At the opening ceremony, the ACRS2019 begins with the opening address, congratulatory remarks, welcoming address and followed by the award session including the award of commemorative plague of the 40th ACRS.

Date & Time 10:00 ~ 10:50 / October 14 (Monday), 2019

Place Grand Ballroom, 2F DCC

Time	Program	Reference
09:58-10:00	Starting Opening Ceremony	MC
10:00-10:02	VIP Introduction	MC
10:02-10:06	Opening Remarks	Prof. Woo-Kyun Lee (General Chair)
10:06-10:11	Welcome Message	Mayor of Daejeon City
10:11-10:16	Welcome Message2	Prof. Kohei Cho (AARS)
10:16-10:21	Welcome Message3	Prof. Myung-Hee Jo(Kyungpook National University)
10:21-10:26	Congratulatory Message1	President Cheol-ho Lim (KARI)
10:26-10:31	Congratulatory Message2	President Christian Heipke (ISPRS)
10:31-10:36	Congratulatory Message3	President Paolo Gamba (IEEE GRSS)
10:36-10:41	The 40th anniversary	
10:41-10:46	Award Session	
10:46-10:50	Group Photo Shot	MC

Closing Ceremony

The closing ceremony takes approximately 1 hour from 11:30 on Friday, October 18. You are able to look back at the time you spent in ACRS2019 of five days. Also, there are closing remarks, reporting the statistic of ACRS2019 and the introduction of ACRS2020.

Date & Time 11:30 ~ 12:30 / October 18 (Friday), 2019

Place Grand Ballroom, 2F DCC

Time	Program	Reference
11:30	Beginning Announcement	MC
11:30-11:35	ACRS2019 Report	Prof. Seong-Woo Jeon (TPC Chair)
11:35-11:45	Words of Encouragement	Prof. Kohei Cho (AARS)
11:45-12:15	Award Session	
12:15-12:20	Closing Message	Prof. Woo-Kyun Lee (General Chair)
12:20-12:30	Promotion of ACRS2020	General Chairs of ACRS2019 and ACRS2020
12:30	Closing Announcement	MC

• Social Event

Welcome Party

For the memorable welcome party, it begins with opening speech, banquet speech, the toast ceremony with the award of commemorative plague of the 40th ACRS. The Culture Night Event is also ready to be delivered. During the ceremony, upcoming event will be stated on a stage screen. Enjoy the dinner with beautiful performances!

※ Tickets which are required for the entry will be provided when register.

Date & Time	18:00 ~ 20:00 / October 14 (Monday), 2019
Place	Grand Ballroom, 2F DCC
Menu	International Buffet

General Conference

Two general conferences are organized during ACRS2019. The first GC in the evening of the second day (Tuesday), and the second GC at the lunch time of the fourth day (Thursday) for those national and regional delegates of AARS who are invited only. The GC is usually participated by around 50-60 delegates.

	Date & Time	Place	Menu
General Conference 1	17:00 ~ 20:00 October 15 (Tuesday), 2019	S.C. Hanok Village	Korean Table d'hote (Han-jeongsik)
General Conference 2	Lunch Time October 17 (Thursday), 2019	Room 204 + 205 2F DCC	Bibimbab Course

Student Night

The Student night is a party only for the students attending ACRS to have fun together. ACRS2019 organizes this on Wednesday evening after the Student Session.

Date & Time	18:00 ~ 19:30 / October 16 (Wednesday), 2019
Place	Room 204 + 205 2F DCC
Attendees	Registered Student participants
Menu	Finger Food and Beer

Technical & Cultural Tour

The tour consists of two main destinations; a technical tour at KARI, the Korea's leading aerospace research institute and a cultural tour at the Munui Cultural Heritage Complex where you can experience Korean traditions and history. Also, on the way to Munui Cultural Heritage Complex, the tour participants will be fascinated with the view of Daecheoung Dam. Due to a large number of tour registrants, there will be two groups assigned for alternate destinations. We kindly ask for the

registrants to come to the Registration Desk by Thursday morning, October 17, 2019 to sign up the group. The assignment of the group is first come first serve basis.
※ Tour departs after the lunch.

• Tour Group Assignment

	Group A & B (80 Pax)	Group C & D (80 Pax)
14:00 ~ 15:30	KARI	Munui Cultural Heritage Complex
16:00 ~ 17:30	Munui Cultural Heritage Complex	KARI

• Tour Schedule

Date & Time 13:30 ~ 18:00 / October 18 (Friday), 2019

Departure	Daejeon Convention Center	13:30

Korea Aerospace Research Institute

Korea Aerospace Research Institute (KARI) is a specialized institution founded for national development through the research and development of aerospace scientific technologies.

Munui Cultural Heritage Complex

Attracting many visitors, the place was created to preserve and promote the local traditional culture of Korea; it is a great place to learn about local history, culture and arts.

Arrival	Lottee City Hotel Daejeon	18:00

2. Lunch & Refreshments

Networking Lunch

We spent a lot of care to make sure you enjoy the luncheon despite of our busy programs. Efficient placement for Networking Lunch makes you feel comfortable and to network between the participants.

Also, you are able to enjoy a variety of lunch boxes each day which are included in the registration fee. All the coupons for the lunches are attached to the given name tag. Please keep them and present own coupons for each lunch.

Date & Time	Place	Menu
12:30 ~ 13:30 October 14 (Mon), 2019	The Outdoor Terrace, 2F DCC Conference Hall Lobby, 1F DCC	Lunch Box
12:30 ~ 13:30 October 15 (Tue), 2019	Room 202, 2F DCC	Lunch Box
12:30 ~ 13:30 October 16 (Wed), 2019	Room 202, 2F DCC	Lunch Box
12:30 ~ 13:30 October 17 (Thu), 2019	Room 202, 2F DCC	Bibimbab
12:30 ~ 13:30 October 18 (Fri), 2019	Room 202, 2F DCC	Lunch Box



※ Bibimbap is a bowl of rice mixed with meat and assorted vegetables. The ingredients are beneficial to health, and the different color represents Korean's long-held belief in harmony.

※ How to eat Bibimbab :

1. Put the steamed rice into the bowl where all the ingredients are placed.
2. Add gochujang (Korean Hot Pepper Sauce) and sesame oil.
3. Mix all the ingredients together with a spoon or chopstick.
4. Enjoy your Bibimbab.

Refreshments

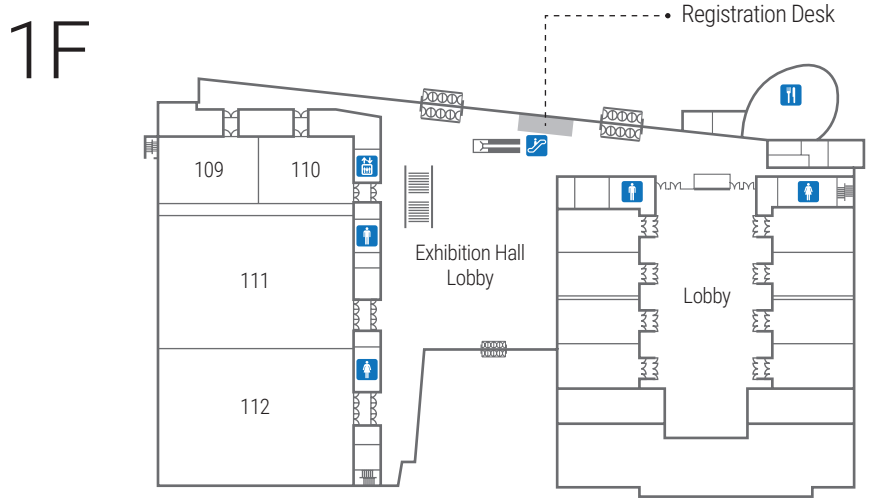
Breaks aren't just a time to check phone calls and e-mails, but they are essential to ensure the mind remains focused and the body relaxed. By focusing on these needs, we have created a range of choices for refreshments to ensure you get the best out of the meetings. There are three times of refreshments on each work shop day.

Date	Time	Place	Menu
Oct 14 (Mon) 2019	08:30~09:00	Grand Ball Room Lobby, 2F DCC	Coffee, tea & different types of breads
	10:50~11:00		Coffee, tea & different types of cookies
	15:00~15:30	Conference Hall Lobby & Exhibition Hall, 1F DCC	Coffee, tea & different types of cookies
Oct 15 - 17 (Tue - Thu) 2019	08:30~09:00		Coffee, tea & different types of breads
	10:30~11:00		Coffee, tea & different types of cookies
	15:00~15:30		Coffee, tea & different types of cookies
Oct 18 (Fri) 2019	08:30~09:00	Conference Hall Lobby, 1F DCC	Coffee, tea & different types of breads

3. Registration

ACRS2019 provides its registration from October 13 to October 18, 2019. Both on-site registrants and pre-registrants can enter the conference hall once the registration process completed. The nametags and the registration kits are distributed at the Registration Desk.

Place	Lobby, 1F DCC	
Date & Time	October 13, 2019	12:00 ~ 19:00
	October 14 ~ October 18, 2019	08:00 ~ 18:00

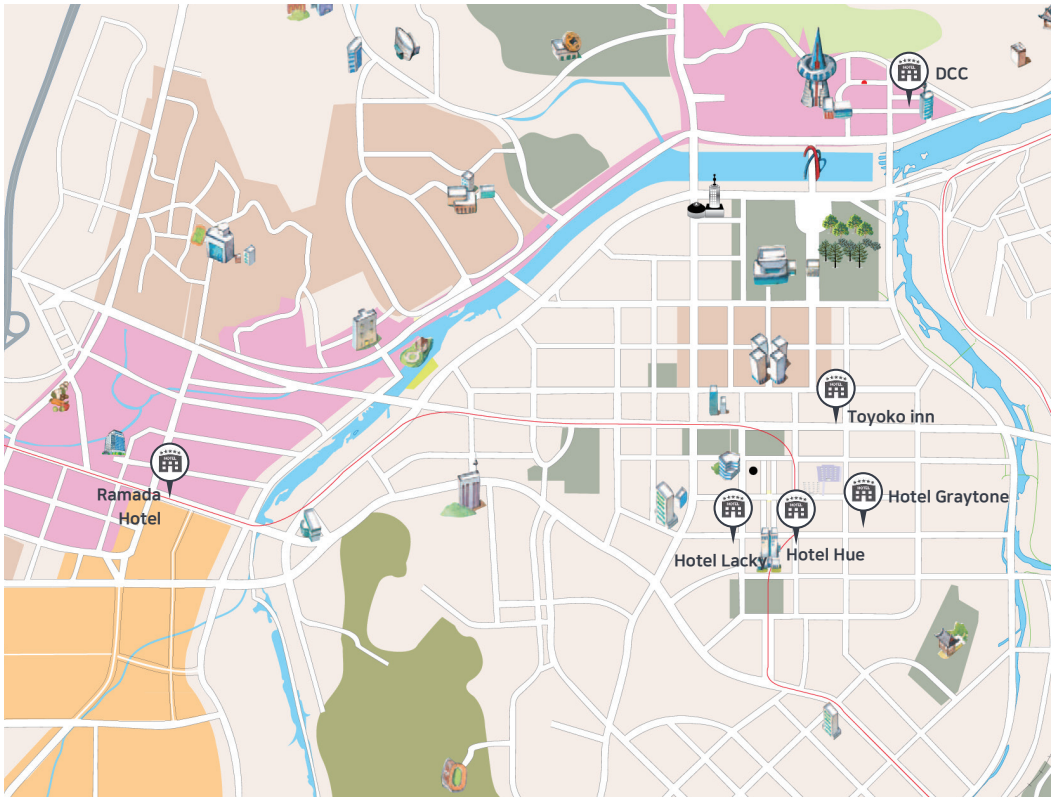


4. Transportation

• Complimentary Shuttle Bus

ACRS2019 Local Organizing Committee provides the complimentary shuttle buses for the convenience of its participants. The shuttle buses are arranged between the main hotels and DCC. Please refer to the shuttle bus time table below.

Date	Departure		Stop by	Arrival	Note
13(Sun), October	13:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	15:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	17:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	18:30	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
14(Mon), October	8:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	8:30	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	9:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	21:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	3 Buses
15(Tue), October	8:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	8:30	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	9:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	18:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	18:30	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	19:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
16(Wed), October	8:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	8:30	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	9:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	18:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	18:30	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	19:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
17(Thu), October	8:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	8:30	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	9:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	18:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	18:30	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	19:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
18(Fri), October	8:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	8:30	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	9:00	Ramada	Lacky & Hue > Graytone Dunsan > Toyoko-Inn	DCC	
	13:00	DCC	Toyoko-Inn > Graytone Dunsan > Lacky & Hue	Ramada	
	13:00	DCC	Bus Terminal (To Incheon Airport)	Daejeon Station	
	13:30	DCC	Bus Terminal (To Incheon Airport)	Daejeon Station	



• Local Transportation

- Public Transportation card is commonly used in Korea. It can be used in all cities and provinces and has a benefit of discount (KRW150). You can buy a prepaid card "T-money" and deposit any amount you need.
- Both cash and the card are acceptable when using buses and taxies.
- Free transfer between buses / subways is possible. It's limited by 3 times and should be done in 30 minutes after getting on / off the buses / subways. Passengers should use the transportation card for free transfer.
- Useful local expressions are listed under the transportation information.

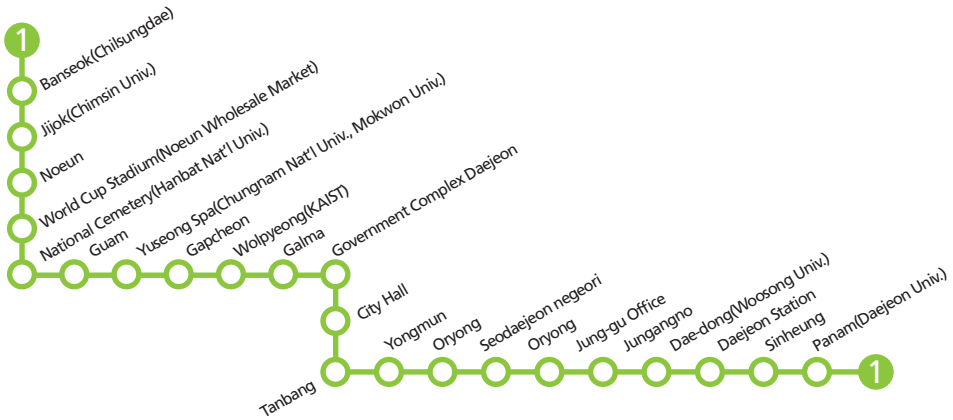
[Bus]

Fare	Cash	KRW 1,400	Card	KRW1,250
Operation Time	Bus	05:30 am - 22:30 pm	Subway	05:30 am – 23:40 pm
Purchasing Place	Convenient Stores			

[Subway]

Fare	Subway Coin	KRW 1,400	Card	KRW1,250
Operation Time	Subway	05:30 am – 23:40 pm		
Purchasing Place	Convenient Stores Ticket Office , Ticket Machine (Subway Coin)			

*Subway Map



[Taxi]

Fare	KRW 3,300 (Basic Distance 2Km)
Additional Fare	KRW 100 for 140m or 34sec
Payment Option	Cash / Credit card / Transportation Card

Expression

Please present below materials to the taxi drivers.

Please go to Daejeon Convention Center 대전컨벤션센터로 가주세요 Address : 대전광역시 유성구 엑스포로 107
Please go to Lotte City Hotel 롯데시티호텔로 가주세요 Address : 대전광역시 유성구 엑스포로 123번길 33
Please go to ICC Hotel ICC호텔로 가주세요 Address : 대전광역시 유성구 엑스포로 123번길55

Please go to Ramada Hotel 라마다호텔로 가주세요 Address : 대전 유성구 계룡로 127
Please go to Government Complex Terminal 대전 정부청사 버스 터미널로 가주세요 Address : 대전광역시 서구 청사로 189
Please go to Daejeon Station 대전역으로 가주세요 Address : 대전광역시 동구 중앙로 215

To Incheon International Airport

Fare	KRW 23,700
Duration	2hr 40min

Daejeon Government Complex Bus Terminal to Incheon International Airport

Time Table (Departure)		
4:15	8:45	15:35
4:20	8:55	15:55
4:25	9:25	16:05
4:35	9:45	16:15
4:45	10:25	16:45
4:55	10:45	17:15
5:05	11:15	18:15
5:15	11:35	18:35
5:25	11:55	18:55
5:35	12:15	19:25
5:55	12:35	
6:15	12:55	Late night
6:35	13:15	3:29
6:55	13:35	3:34
7:05	13:45	3:39
7:15	14:05	3:44
7:55	14:35	3:49
8:15	14:55	3:54
8:35	15:15	

5. Useful Information

• About Korea

The Republic of Korea (herein after Korea) is a country visited by approximately ten million international travelers every year. With its long history in culture and tradition, the country has a lot to offer to travelers. Continue reading to learn general information about Korea before visiting.

The Korean peninsula, roughly 1,030 km long and 175 km wide at its narrowest point, is located in Northeast Asia. With Seoul as its capital city, Korea's total land area is 100,033 ㎢. Korea's neighbors include Japan to the east, China to the west, and Democratic People's Republic of Korea (North Korea) across the northern border.

The total population of Korea is approximately 51,635,256 (as of September 2018), with most of the population residing in the Seoul metropolitan area. Outside of Seoul, other large and economically advanced cities such as Busan, Incheon, Daegu, Daejeon, Gwangju and Ulsan also have higher population densities than other cities in Korea.

English	Korean (Hangeul)	Korean Pronunciation
How are you?	안녕하세요?	Annyeong-haseyo?
Thank you.	감사합니다.	Gamsa-hamnida.
Yes.	예.	Ye.
No.	아니오.	Aniyo.
I am sorry	미안합니다.	Mian-hamnida.
The check, please.	계산서 주세요.	Gyesanseo juseyo.
How much is it?	얼마입니까?.	Eolma-imnikka?
Where is the rest room?	화장실이 어디입니까?	Hwajansil oedi-imnikka?

Koreans use Korean. Hangeul, Korean written language characters set, was invented in 1443, during the reign of King Sejong. 'The Hunminjeongeum,' a historical document which provides instructions to educate people using Hangeul, is registered with UNESCO. UNESCO awards a 'King Sejong Literacy Prize,' every year in memory of inventor of Hangeul.

• Venue City 'Daejeon'

Daejeon is South Korea's the fifth-largest metropolitan city. Located in the central region of South Korea, Daejeon serves as a hub of transportation and is at the crossroads of major transport routes. Daejeon is one of South Korea's administration hubs with the Daejeon Government Complex. Currently, 12 national government offices, including Korea Customs Service, Cultural Heritage Administration, and Korean Intellectual Property Office, as well as Patent Court of Korea, are located in Daejeon.

Daejeon, the venue city, is a top science and technology city with 70 representative research institutes and 1,300 high-tech companies such as Daedeok Science Town, Korea Aerospace Research Institute, Korea Electronics and Telecommunications Research Institute, Korea Institute of Geoscience and Mineral Resources are located.

Also, Daejeon has 18 universities, including KAIST and Chungnam National University. Daejeon has earned its name as "Asia's Silicon Valley" and "high technology city".

Daejeon Convention Center(DCC), the conference venue has the internationally large scale center with the most advanced technologies. It has Convention hall accommodating 3,000 peaple, 4 exhibition halls and 20 meeting rooms. There are various accommodations within 7 km nearby.

DCC is located in front of Gapcheon river in the center of Daejeon Metropolitan City, and there are various attractions with National Science Museums, cultural complex and arboretum nearby.



• Other Information

Currency / Credit Card / Samsung Pay

The South Korean Won is the currency of Korea (South). Our currency rankings show that the most popular Korea (South) Won exchange rate is the USD to KRW rate. The currency code for Won is KRW, and the currency symbol is ₩. There are ₩1, ₩5, ₩10, ₩50, ₩100, ₩500 coins and

₩1,000, ₩5,000, ₩10,000, ₩50,000 bills. ₩1 and ₩5 coins are rare, and almost all prices are rounded to the nearest ₩10. Foreign bank notes and traveler's checks can be exchanged into Korean Won at the airport, hotels and at all Korean banks. Credit Card, e.g. VISA, MasterCard, American Express and Diners Club, are all widely accepted. Especially nowadays Samsung Pay using mobile phone can be used almost anywhere.

Electricity

In Korea, an outlet for 220 volt is available. Overseas delegates bringing laptop computers and other electrical devices are advised to check whether a transformer is required.

Tipping

Tipping is not customary in Korea. Service charges are included in your bill on the price of rooms, meals, and other services at hotels and restaurants. Sometimes, expensive restaurants and luxury hotels may add a service charge of 10%

Emergency

Medicines for light disease will be prepared at the on-site secretariat room.
- Headache pill, Digestive medicine, Styptic, Band-Aid, Gauze, Antiseptic, Eye drops

There are hospital, fire station and Police office within 10 minutes by taxi from DCC.

- Eulji University Hospital (Tel. 042-611-3000)
- Yuseong fire station (Tel. 042-270-1613)
- Doryong Police Precinct Office (Tel. 042-725-6005)

If you need to take medical treatment, please visit the On-site secretariat.
Emergency Call Number in Korea – "119"

WIFI

All participants can use free WIFI without password in DCC.

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Isnaeni Yunus	WeA4-4
Ito Akihiko	MoC1-1
Ito Hirohito	ThP-89
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Iwasaki Akira	WeE4-3
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J. Jerry O. H.	MoE2-7
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Jaelani Lalu Muhamad	ThC1-1
Jain Abhineet	TuE3-4
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Jamil Hana Mohamed	TuD1-3
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Jana Madhumita	MoD2-5
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Japitana Michelle V.	MoB2-4
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Jaw Jen-Jer	FrF1-5
Jayalath Granie R	MoF2-4
Jayasinghe Pavithra	ThB1-4
Jayasundara Kottage Saumya Denuwan	ThE1-4
Jayawardena Sahan Rajitha	MoE1-6
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Jayoma Jaymer	ThC2-5
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Jelip Jenarun	TuD3-2
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Jeon Woohyun	TuP-40
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Jeong Hansol	ThP-91
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Jr. Alejandro H. Ballado	ThP-107
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Julzarika Atriyon	WeA2-3
Jun Sae-Rom	TuP-109
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Kontoes Haris	ThE1-6
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Kristine Vergel. Kaye	TuE2-6
Kshetrimayum Alexander Singh	WeB2-3
Kumagai Kiichiro	ThP-38
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Kumar Kranthi	MoC1-2
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Kumkrua Malinee	WeF2-4
Kundu Nidhi	TuB2-4
Kundu Sudip Kumar	ThD1-5
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Kushwaha Satyam	ThB2-5
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Kwoh Leong Keong	ThE3-6
Kwok Coco Yin Tung	MoA2-7
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Labra Ken Neth Marie	WeA2-4	Lee Kyung-Do	TuP-12	Lee Young-Rim	ThP-30
Lagahit Miguel Luis R.	TuE1-1	Lee Kyung-Do	TuP-89	Lee Yu-Chan	WeB2-6
Lagrosas Nofel	WeD4-5	Lee Kyung-Do	ThP-94	Lee Yun-Shan	ThE3-5
Lagrosas Takashi Kadowaki Nofel	TuP-54	Lee Kyunghwa	TuP-77	Lee Yun-Shan	ThP-55
Lahayon Glenn H.	TuF2-5	Lee Kyungil	ThB2-4	Lee Yu-Yeon	TuP-55
Lahayon Glenn S.	WeE4-4	Lee Kyu-Sung	TuP-39	Letu Husi	WeC1-6
Lai Jhe-Syuan	TuP-80	Lee Long-Jeng	TuP-70	Letu Husi	WeC2-4
Lakmali K.G.D.	MoB1-4	Lee Long-Jeng	ThP-49	Letu Husi	WeC3-3
Lakshmi T.Vijaya	WeA1-3	Lee Moung-Jin	ThP-39	Letu Husi	ThF3-2
Lamparas Glenn Leandri Brylle L.	ThF2-5	Lee Myong-In	TuP-76	Li Che-Wei	TuP-26
Landivar Juan	TuC2-2	Lee Re-Yang	ThP-78	Li Guohong	ThA2-2
Lao Ranilo B.	WeA1-6	Lee Sang Hoon	ThP-61	Li Hon	MoA2-7
Latif Mohd Talib	MoB2-5	Lee Seulchan	ThP-110	Li Hsuan-Yi	TuE1-5
Latif Zulkiflee Abd	WeB4-4	Lee Seungchul	TuC3-4	Li Hui	WeA3-1
Latifah Arnida Lailatul	MoA2-6	Lee Seung-Ha	ThP-5	Li Wei	ThC1-2
Lawas Cora Jane C.	MoA1-7	Lee Seung-Jae	ThP-74	Li Wei-guo	MoC2-6
Lawawirojwong Siam	ThP-79	Lee Seung-Min	TuP-99	Li Xiao-Juan	ThP-71
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Lazaga Christine Lou	WeC1-3	Lee Soo-Jin	TuP-32	Liangrocapart Sompong	ThE1-3
Lee Boram	TuP-86	Lee Sujong	MoA1-6	Liangrocapart Sompong	ThE2-3
Lee Chang Suk	ThP-54	Lee SuJong	TuP-101	Liangrocapart Sompong	FrC1-6
Lee Dong Han	TuC3-1	Lee Sujong	TuP-104	Liangrocapart Sompong	FrE1-3
Lee DongHan	ThP-92	Lee Suk Bae	ThP-80	Liao Tun-Yu	ThP-50
Lee DongHan	ThP-95	Lee Sun-Gu	WeE3-2	Lias Nurul Nassita bt	ThD2-7
Lee Dong-Han	ThP-86	Lee Sun-Gu	ThP-74	Lien Chun-Chieh	ThP-51
Lee Dong-Won	TuP-35	Lee Sunmin	ThP-39	Liew Soo Chin	TuA3-1
Lee Dong-Won	TuP-77	Lee Won Hee	FrE1-2	LIEW Soo Chin	WeD3-2
Lee Eul-Rae	WeD2-6	Lee Won-Jin	TuP-35	Liew Soo Chin	ThC3-5
Lee Eung-Joon	WeB1-5	Lee Won-Jin	TuP-77	Liew Soo Chin	ThE3-6
Lee Hae-Jung	TuP-77	Lee Woo-Kyun	MoA1-6	Lim Byoung-Gyun	TuE3-1
Lee Hae-Min	ThP-80	Lee Woo-Kyun	TuC1-4	Lim Chul-Hee	MoA1-6
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Lee Jang-Bae	WeB1-5	Lee Yang-Won	TuP-36	Lin Chao Hung	WeC4-1
Lee Jeongho	MoD1-2	Lee Yang-Won	TuP-47	Lin Chao-Hung	TuD2-6
Lee Jihoon	WeC4-2	Lee Yang-Won	ThP-62	Lin Chao-Hung	WeE2-3
Lee Jisang	WeC3-1	Lee Yang-Won	ThP-101	Lin Chao-Hung	ThB2-2
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Lee Juhyun	ThC1-6	Lee Yeong-Hun	ThP-5	Lin Chih-Hao	TuP-70
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Lee Kilim	FrE1-2	Lee Yeon-su	TuB1-6	Lin Lao-Sheng	MoF1-1
Lee Kiwon	WeE3-2	Lee Yong-Suk	ThP-14	Lin Lao-Sheng	MoF2-1
Lee Kwang Jae	TuP-57	Lee Yoon-Kyung	TuP-22	Lin Li-li	TuP-28
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Liu Cynthia	ThP-50
Liu Gaohuan	WeB3-5
Liu Hsin Ta	TuP-6
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Lozada Donna May C.	WeE4-6
Lu Bihui	TuC1-3
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Mabunga Roxanne I.	TuP-43
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Human activity has expanded to a level today that likely affects the entire global environment. We must find a way to mitigate and adapt to climate change linked to global warming. This will require a series of actions that include gaining an accurate understanding of the current state of the Earth and human activity, predicting what will become of the Earth in the coming years, taking appropriate measures based on this prediction, and adjusting these measures after evaluating the results. Space-based Earth observation is anticipated to be a superior method for repeatedly observing the entire planet with consistent precision. The Earth Observation Research Center (EORC) was established under the Japan Aerospace Exploration Agency (JAXA) in April 1995 as Japan's core organization for Earth observation satellite data processing, analyzing, calibration/validation, and archiving. By continuing to carry out these activities using space-based Earth observation technology, we hope to assist humankind in its adaptation to climate change.

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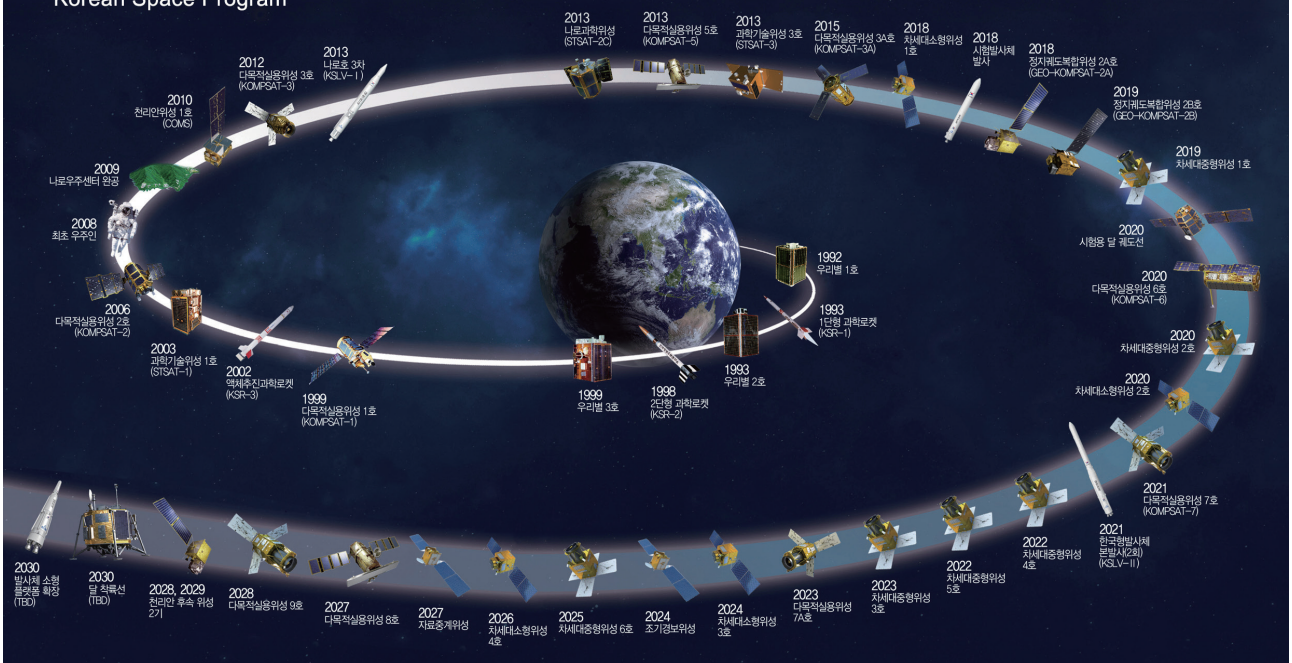

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