



INTERNATIONAL SYMPOSIUM ON REMOTE SENSING **2025**

MAY 14-16

Songdo Convensia
Incheon, Korea





Sponsors

- Korea Institute of Ocean Science & Technology (KIOST)
- Korea Polar Research Institute (KOPRI)
- Korea Aerospace Research Institute (KARI)
- Inha University
- The University of Seoul
- Mokpo National University
- National Institute for Environmental Studies, Japan

Final Program

ISRS 2025

International Symposium on Remote Sensing

14–16 May 2025
Sondo Convensia, Incheon, Korea

In association with

The 41st Spring Symposium of KSRS

Organized by

The Korean Society of Remote Sensing (KSRS)

The Remote Sensing Society of Japan (RSSJ)

The Chinese Society Photogrammetry and Remote Sensing (CSPRS)

Supported by

Incheon Metropolitan City

Incheon Tourism Organization



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Sponsors & Exhibitors

- 49 Sponsors
- 50 Exhibitors

Welcome to the ISRS 2025

On behalf of the Korean Society of Remote Sensing (KSRS) and the organizing committee, I am delighted to welcome you to the 2025 International Symposium on Remote Sensing (ISRS), held in the vibrant Songdo District in Incheon, Korea. This annual gathering brings together experts from Korea, Japan, Taiwan, and beyond to advance our shared mission of innovation and excellence in remote sensing.

The year 2025 marks a significant milestone for Korea with the establishment of the Korea Aerospace Administration (KASA) and the operational launch of several specialized satellite application centers. These include the National Satellite Information Utilization Support Center of the Korea Aerospace Research Institute (KARI), alongside dedicated centers for meteorology, oceans, environment, land, water resources, forestry, and agriculture. These institutions underscore Korea's commitment to leveraging satellite technology for diverse applications, ensuring that Earth observation capabilities are effectively harnessed to meet the needs of various sectors.

Remote sensing, once divided into atmospheric, marine, and terrestrial studies, has evolved into a multifaceted discipline. Today, global issues such as climate disasters, population pressures, food security, energy needs, and environmental concerns demand a more integrated and problem-oriented approach to the field. Our symposium is an opportunity to deepen collaboration, benchmark innovative techniques, and foster multidisciplinary research to develop comprehensive solutions for these challenges.

As we convene in Songdo, known for its cutting-edge infrastructure and sustainability, I encourage you to engage in meaningful discussions while also enjoying the culture and energy of this dynamic venue. Let us take this opportunity to forge connections and share moments of inspiration.

I am confident that ISRS 2025 will foster groundbreaking discoveries and lasting friendships. Together, let us shape the future of remote sensing and tackle the challenges of our time.

Once again, welcome to ISRS 2025. I wish you a fruitful and enjoyable symposium.

Sincerely yours,



Dr. Joo-Hyung Ryu

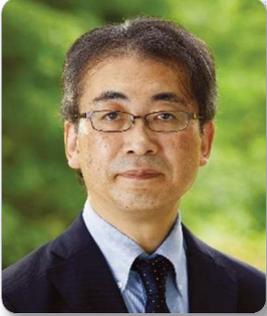
General Chair of the ISRS 2025

President, Korean Society of Remote Sensing

Senior Researcher, Korea Institute of Ocean Science and Technology (KIOST)



Welcome to the ISRS 2025



As one of the General Co-chairs of ISRS2025, I sincerely welcome your participation in ISRS2025.

International Symposium on Remote Sensing (ISRS), which continues to rotate between Korea, Taiwan, and Japan, has firmly established itself as the foundation of the remote sensing community in East Asia. Now that the COVID-19 pandemic is over, I am very pleased to be able to continue holding the ISRS face-to-face meeting again this year in Incheon, Korea, after very successful ISRS2024 in Taichung, Taiwan.

Many people feel that climate change and its impacts are accelerating in these years, with 2024 experiencing the highest annual average temperature and highest greenhouse gas concentrations on record, and in 2025, large-scale fires continue to burn around the world, including South Korea and Japan, and the Arctic and Antarctic sea ice areas are at record lows. In this context, East Asia, which accounts for a large share of the world's population and economic activity, is a very important region both in terms of climate change causes and climate change impacts, and should have autonomous climate change observation capabilities, including satellites.

It is very timely that ISRS2025 will be held in Incheon, Korea, a country with the growing Earth observation capability. I look forward to a broad and cross cutting discussions on remote sensing science, technology development, and real-world applications, including commercial use of remote sensing data, among the senior and the younger generations from countries in East Asia. I truly believe our brighter future will emerge only from such interactions across borders and generations.

Finally, I would like to express my sincere appreciation to the KSRS members for their tremendous efforts in organizing ISRS 2025.

I look forward to meeting you all in Incheon, Korea, soon.

Thank you.

Tsuneo Matsunaga

President of the Remote Sensing Society of Japan

Director, Satellite Observation Center, National Institute for Environmental Studies, Japan

Welcome to the ISRS 2025

Dear Distinguished Guests, Researchers, Students, and Colleagues,

On behalf of the Chinese (Taipei) Society of Photogrammetry and Remote Sensing (CSPRS), it is my great pleasure to welcome you to the 2025 International Symposium on Remote Sensing (ISRS 2025). This prestigious event brings together leading experts, scientists, and practitioners from around the world to share cutting-edge advancements, innovative applications, and future trends in photogrammetry, remote sensing, spatial information sciences and related fields. This event is also a unique opportunity and platform for networking among peers, so we encourage all participants to actively establish friendships and foster collaborations.

Remote sensing and spatial information sciences have become an indispensable part for addressing global challenges, from climate change and natural disaster monitoring to urban planning and sustainable resource management and beyond. The advancement in the “3S” technologies and related domains has enabled us with a great potential to tackle complicated obstacles in various fields of interest. By integrating with other emerging technologies, such as AI, IoT, ICT and big data analytics, we further enhance our ability to analyze, interpret, and visualize intricate geospatial data, unlocking new possibilities for scientific discovery and sophisticated applications. Through keynote speeches, technical sessions, and interactive discussions in ISRS-2025, we aim to inspire innovative solutions that contribute to a smarter and more sustainable future and provide more positive societal impact.

Finally, I would like to extend my deepest gratitude to KSRS, for their efforts in organizing the symposium, and to the sponsors, partners, and participants for their invaluable contributions. Your expertise and enthusiasm are the driving forces behind the success of this event.

Once again, welcome to the 2025 International Symposium on Remote Sensing. Let us seize this opportunity to connect, learn, collaborate and shape the future together.

I wish you a fruitful conference and enjoy the hospitality in Incheon.

Fuan Tsai

*Professor, Center for Space and Remote Sensing Research, National Central University, Taiwan
President, Chinese Society of Photogrammetry and Remote Sensing*



Briefing from Technical Program Committee Chair



On behalf of the Technical Program Committee, I am delighted to welcome you to the International Symposium on Remote Sensing (ISRS) 2025. As the Committee Chair, it is my honor to present this excellent program that brings together leading experts in remote sensing.

Remote sensing has evolved significantly with the integration of advanced satellite technologies, AI-driven analytics, and enhanced computational capabilities, expanding its applications in addressing global challenges related to climate change and environmental monitoring.

ISRS 2025 features a diverse range of presentations, including keynote speeches, technical sessions, and special sessions organized by leading universities and research institutes. The program hosts 180 oral presentations and 77 poster presentations across these sessions. A remarkable trend this year is the surge in AI-related research in remote sensing. More than one-third of all submissions employ AI methodologies, reflecting the rapid advancement of these technologies in our field. In response, we have organized six dedicated Machine Learning sessions over two days, showcasing innovative approaches in deep learning and computer vision that are transforming remote sensing data analysis.

Beyond AI applications, our program offers diverse domain-specific sessions covering vital application areas such as ocean monitoring, polar research, and land management. The photogrammetry and GIS-integrated sessions introduce advancements in spatial analysis that reflect the interdisciplinary nature of modern remote sensing and its capacity to address complex environmental challenges.

We received 61 submissions for the Student Paper Contest, and selecting finalists was challenging due to their exceptional quality. The Technical Program Committee thoroughly reviewed these submissions, and winners will be announced at the Closing Ceremony. Regardless of the results, the passion demonstrated by the next generation of remote sensing researchers is truly inspiring. Their innovative approaches give us confidence in the future advancement of remote sensing technologies in addressing global challenges.

I extend my sincere gratitude to all participants, presenters, organizers, reviewers, and sponsors who have contributed to the success of ISRS 2025. The collaborative spirit between the remote sensing societies of Korea, Japan, and Taiwan continues to strengthen our scientific community and foster international cooperation.

I hope you find the symposium intellectually stimulating and enjoyable.

Yours sincerely,

Junhwa Chi

ISRS 2025 Technical Program Committee Chair

Committees

General Co-Chairs

Joo-Hyung Ryu (President of KSRS, Korea Institute of Ocean Science and Technology, Korea)
Tsuneo Matsunaga (President of RSSJ, National Institute for Environmental Studies, Japan)
Fuan Tsai (President of CSPRS, National Central University, Taiwan)

Steering Committee

Kyung-Soo Han (Pukyong National University, Korea)
No-Wook Park (Inha University, Korea)
Sang-Wan Kim (Sejong University, Korea)
Tsuneo Matsunaga (National Institute for Environmental Studies, Japan)
Hideki Kobayashi (Japan Agency for Marine-Earth Science and Technology, Japan)
Fuan Tsai (National Central University, Taiwan)
Jen-Jer Jaw (National Taiwan University, Taiwan)
Ming-Der Yang (National Chung Hsing University, Taiwan)

Organizing Committee

Seung-Kuk Lee (Chair, Pukyong National University, Korea)
Chul-Soo Ye (Far East University, Korea)
Duk-jin Kim (Seoul National University, Korea)
Hyun-Cheol Kim (Korea Polar Research Institute, Korea)
Hyung-Sup Jung (University of Seoul, Korea)
Jungho Im (Ulsan National Institute of Science and Technology, Korea)
Kwangjae Lee (Korea Aerospace Research Institute, Korea)
Moongyu Kim (SI Imaging Services Co., Ltd, Korea)
Sang-Eun Park (Sejong University, Korea)
Sang-Hoon Hong (Pusan National University, Korea)
Hideki Kobayashi (Japan Agency for Marine-Earth Science and Technology, Japan)
Shin Nagai (Japan Agency for Marine-Earth Science and Technology, Japan)
Wataru Takeuchi (The University of Tokyo, Japan)
Tee-Ann Teo (National Yang Ming Chao Tung University, Taiwan)
Su-Feng Wang (National Changhua University of Education, Taiwan)
Chung-Ru Ho (National Taiwan Ocean University, Taiwan)

Technical Program Committee

Junhwa Chi (Chair, Pukyong National University)
Ahram Song (Kyungpook National University, Korea)
Hyangsun Han (Kangwon National University, Korea)
Jungil Shin (The Seoul Institute, Korea)
Seung Hee Kim (Korea Polar Research Institute, Korea)
Shin Nagai (Japan Agency for Marine-Earth Science and Technology, Japan)
Wataru Takeuchi (The University of Tokyo, Japan)
Yuji Sakuno (Hiroshima University, Japan)
Haruki Oshio (Science Tokyo, Japan)
Chao-Hung Lin (National Cheng Kung University, Taiwan)
Kuo-Hsin Tseng (National Central University, Taiwan)
Walter W. Chen (National Taipei University of Technology, Taiwan)
Yu-Ching Lin (National Defense University, Taiwan)
Shih-Hong Chio (National Chengchi University, Taiwan)

General Information

Currency and Foreign Exchange

Korea's official monetary unit is the won.(KRW). Notes include KRW 1,000, KRW 5,000, KRW 10,000 and KRW 50,000 denominations, while coins include KRW 10, KRW 50, KRW 100, and KRW 500 denominations. Foreign bank notes and traveler's checks can be exchanged into Korean won at foreign exchange banks, airports, hotels and other authorized money exchange outlets.

Electricity

The standard voltage in Korea is 220 volts at 60 Hertz, and the outlet has two round holes. If you do not have a multi-voltage travel adapter, you may ask to borrow or purchase one from your hotel's front desk. You can also find them at the airport, retail stores, major duty-free shops, and even convenience stores.

Credit Cards

Credit cards including VISA, Master Card, American Express, Diners Club and JCB are accepted at major hotels, department stores, restaurants, and retail outlets. However, VISA, Master Card and JCB are only acceptable for the payment of ISRS2025 registration fees at registration desk.

Tip

Tipping is not a regular practice in Korea. Service charges are often included in the bill for rooms, meals, and other services at hotels and upscale restaurants. Koreans occasionally do tip when they are especially pleased with the service.

Business Hour

■ Banks

- Weekday: 09:00-16:00 / Closed weekends & public holidays
- Exceptions: Standard Chartered Bank weekdays 09:30-16:30, EVERICH Bank weekdays 09:00-16:30 / Closed weekends & public holidays

■ Government Offices and Organizations

- Weekdays 09:00-18:00 / Closed weekends & public holidays

■ Post Offices

- Weekdays 09:00-18:00 / Closed weekends & public holidays
- Website: www.koreapost.go.kr (Korean, English)

■ Department Stores

- Monday-Thursday 10:30-20:00, Friday-Sunday & public holidays 10:30-20:30 / Closed days vary by store
- Typically, department stores are closed one day a month, so we recommend checking before visiting

Emergency Calls

Police Department: +82-112 / Fire Department: +82-119 / Medical Emergencies: +82-119

Infectious Disease Emergencies: +82-1339

1330 Korea Travel Hotline Tel: +82-2-1330 (Korean, English, Japanese, Chinese, Russian, Vietnamese, Thai, Indonesian)

Website: www.visitkorea.or.kr

Diplomatic Missions in Korea Website: www.mofa.go.kr (Korean, English)

LOST 112 (Lost and Found Center) Tel: +82-2-182



Songdo Convensia

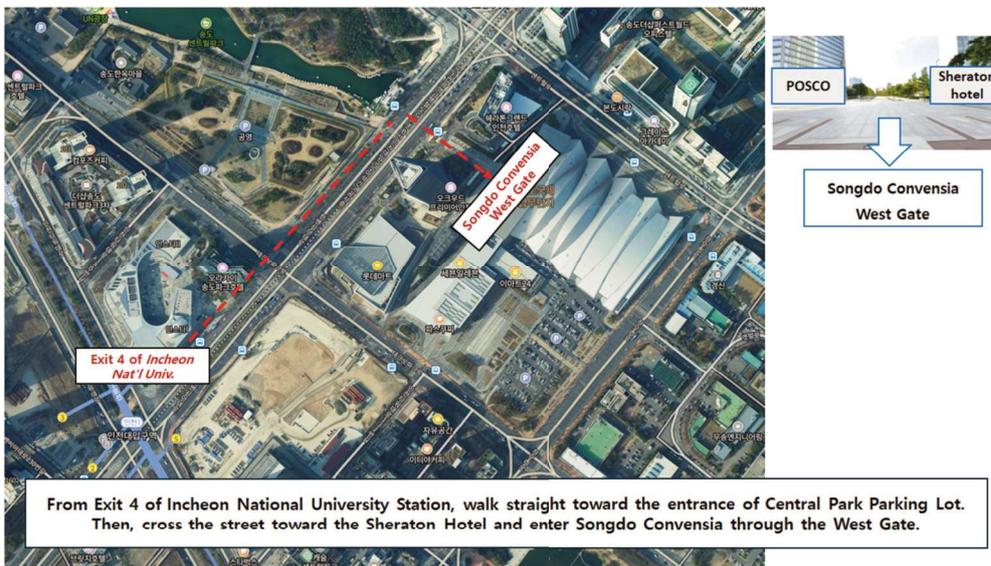
Address: 123 Central Street, Yeonsu-gu, Incheon 21998 Korea
 TEL: +82-32-210-1114
 FAX: +82-32-210-1007

We are pleased to invite you to the upcoming academic conference, which will be held at the state-of-the-art Songdo Convensia in Incheon, South Korea. Located in the heart of Songdo International Business District, Songdo Convensia is an ideal venue for hosting international events, offering a spacious and well-equipped environment for all participants. Songdo Convensia is an international exhibition and convention center located in the center of Songdo Town that can be reached in 20 minutes from Incheon International Airport and 50 minutes from Seoul.

From Gimpo International Airport to Songdo Convensia

- By Subway

Gimpo Int'l Airport Station (AREX) ⇒ Gyeongang Station (Transfer to Incheon Subway Line 1)
 ⇒ Incheon National University Station ⇒ Use Exit 4 and walk approximately 10 minutes



From Incheon International Airport to Songdo Convensia

- By Subway

Incheon International Airport T1 or T2 (AREX) ⇒ Gyeongang Station (Transfer to Incheon Subway Line 1)
 ⇒ Incheon National University Station ⇒ Use Exit 4 and walk approximately 10 minutes

- By Bus

No. 303, 303-1, 6777, 6777-1

Social Programs & Event

Banquet

Wednesday, 14 May 2025 17:30-19:30 2F
(Free for all registered participants and exhibitors)

Welcome Desk

Wednesday, 14 May 2025 10:00-17:00
Try free stamping on traditional Ganghwa cotton handkerchiefs

Thursday, 15 May 2025 09:00-17:00
Make your own traditional Hanji Keyring for free

Booth Visit Event

“Visit booth, collect 10 or more stamps, and drop your completed card into the prize box!”
The prize draw will take place during the closing ceremony on May 16.

Booth Layout
1-2. Stellarvision Inc.
3. Geofocus, Inc.
4-6. Ybderwater Survey Technology 21, Inc.
7. The Univeristy of Tokyo
8. Chinese Society Photogrammetry and Remote Sensing (CSPRS)
9. 3D Labs Inc.
10. Hiroshima University
11. Samwoo Scientific Co.
12. INDYWARE
13. Gaia3D, Inc.
14. National Institute of Environmental Research (NIER)
15-16. YOUNG IN MOBILITY Co., Ltd

Visit the booths!

Collect 10+ stamps for a chance to win a prize.
Raffle Date : May 16, Closing Ceremony

ISRS 2025

Name :

Affiliation :

BOOTH EVENT



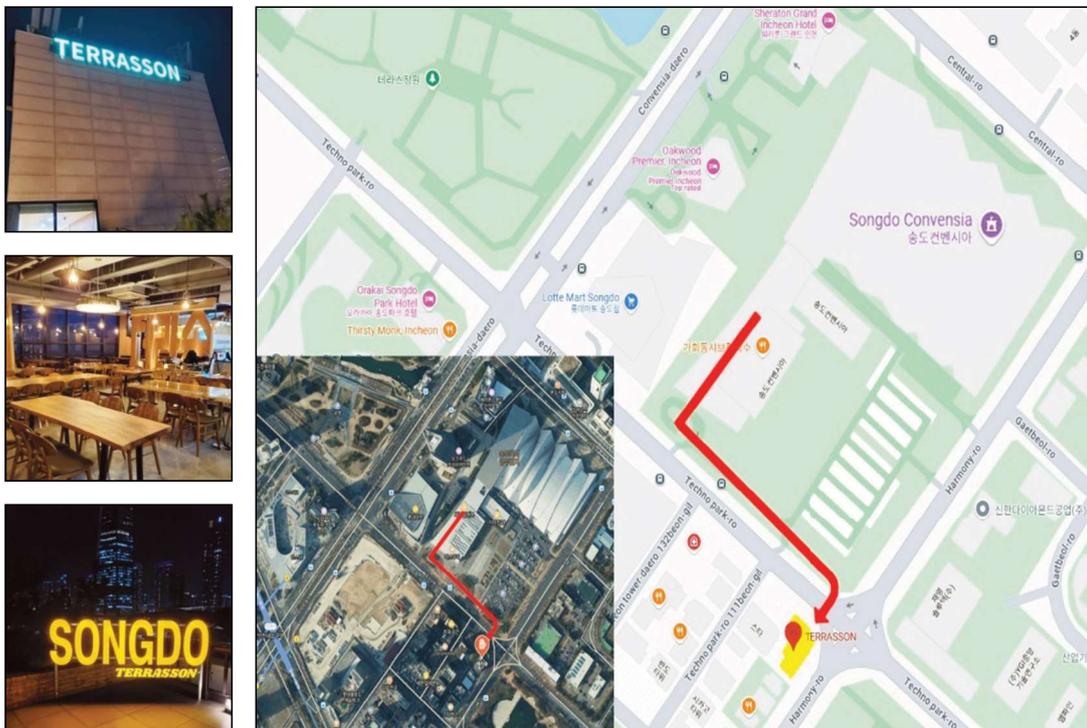
Social Programs & Event

Young Scholars' Night

“Young Scholars' Night” is an activity started from ISRS 2012. This activity is aimed to build international human network between young scholars. This activity would be a good opportunity for graduated students and young scholars, to build future research collaboration as well as to know each other.

Thursday, 15 May 2025 17:30 -19:30

Terrasson (#801, 8F 124 Harmony-ro, Yeonsu-gu, Incheon)



Young Scholars' Night Committee

Taeheon Kim (Korea Aerospace Research Institute, Korea)

Won-Kyung Baek (Korea Institute of Ocean Science & Technology, Korea)

Changhyun Choi (College of Agriculture and Life Sciences, Seoul National University, Korea)

Tzu-Yi Chuang (National Yang Ming Chao Tung University, Taiwan)

Jhe-Syuan Lai (Feng Chia University, Taiwan)

Haruki Oshio (Chair of the External Funding & Consulting Committee, Science Tokyo, Japan)



KAKAO TALK

<https://open.kakao.com/o/gt6HCquh>

Social Programs & Event

Lunch Voucher Usage Guide

During the ISRS 2025 period, lunch vouchers can be used at the restaurants listed below, located on the 1st floor of Songdo Convensia.

Each participant will receive two 10,000 KRW vouchers and two 5,000 KRW vouchers.

Please note

You may use the vouchers one at a time or combine multiple vouchers for a single purchase.
 No refunds will be given for any unused balance.
 If your total exceeds the voucher amount, the difference must be paid by the user.

[Voucher valid period] **From 10:00 AM on the 14th to 1:00 PM on the 16th.**

Restaurants
(1st floor)



Fall in sushi
(Sushi Restaurant)



Gahoe-dong Shabu & Kalguksu
(Korean Restaurant)



Hocheondang
(Japanese Restaurant)



Samgyo-ri dongchimi makguksu
(Korean Restaurant)



Songto
(Korean Restaurant)



Gyeongseong hanwoo bulgogi
(Korean Restaurant)



Rainbow Chaihong
(Chinese Restaurant)



Registration Information

All attendees are required to check in at the Registration Desk on the 2nd floor at Songdo Convensia. Each registered participant will receive a name badge, Proceedings, final program, tickets for Baquet/Young Scholar's Night, and tickets for lunch, and receipts of all payment made.

You must wear your own name badge all the time while in the conference area or at conference-sponsored events.

Conference Registration fees

The Registration fees should be paid at the symposium Registration Desk (2nd floor at Songdo Convensia).

All payment must be made in Korea Wons (KRW) or US Dollors (USD)

- Non-student KRW 260,000 (US\$ 200)
- Student KRW 200,000 (US\$ 150)

Presentation Instructions

Oral Presentation

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.

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 for smooth introduction by session chair.

Poster Presentation

[Preparation]

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

Poster Size: A0 size is recommended.

Posters should include title, author's name, affiliation.

[Before the poster presentation]

The given number of posters will be indicated on a board.

Place your poster on the assigned board.

Posting Time (Poster Session I : May 14(Wed) 13:00 ~ 17:00, Poster Session II : May 15(Thu) 09:00 ~ 17:00)

[During the poster presentation]

Poster Session I : May 14(Wed) 14:45-16:00

Poster Session II : May 15(Thu) 14:15-15:30

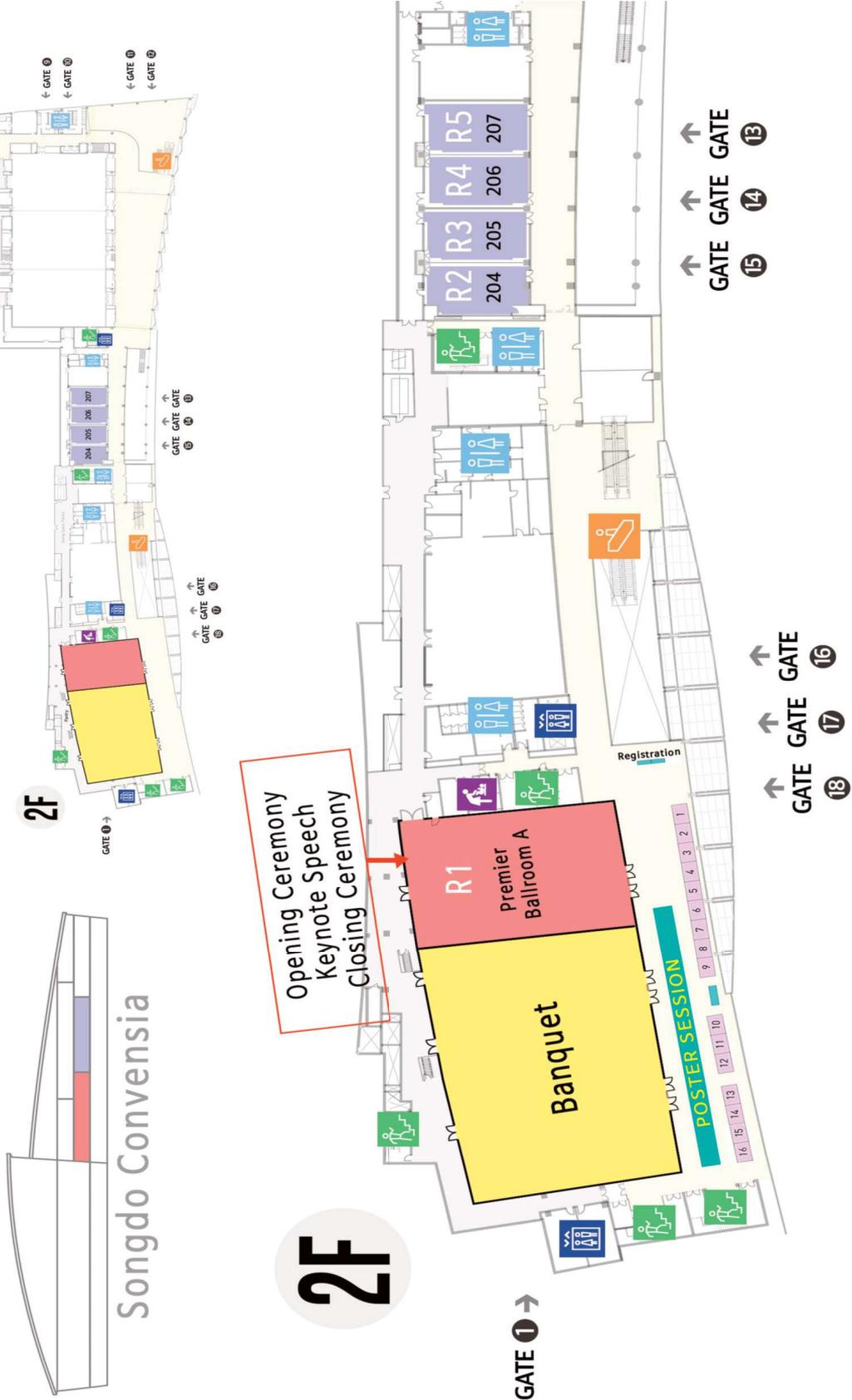
[After the poster session]

Every presenter is required to remove their own posters.

Posters will be discarded after the time announced below.

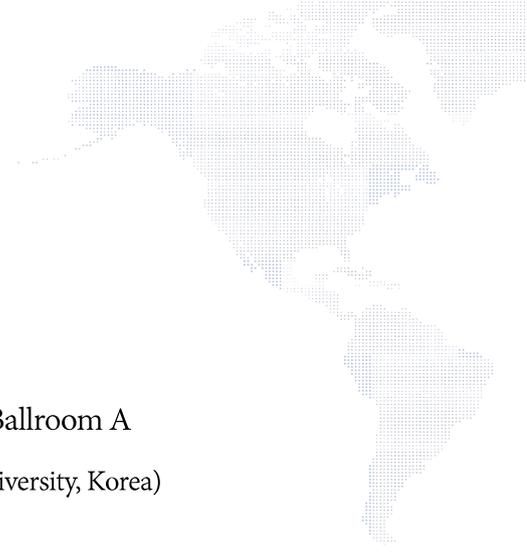
Session	Attaching	Removing
Poster Session I	12:00 on Wednesday	17:00 on Wednesday
Poster Session II	09:00 on Thursday	17:00 on Thursday

Venue Map



Timetable

DAY	Time	[R1] Premier Ballroom A	[R2] 204	[R3] 205	[R4] 206	[R5] 207
1 Day : 14-May 2025 (WED)	10:00-	Registration				
	10:00-10:20	Opening Ceremony (2F Premier Ballroom A)				
	10:20-12:00	Keynote Speech 1-3 (2F Premier Ballroom A)				
	12:00-13:30	Lunch				
	13:30-14:45	[INHA SS1] Special Session on Development of Comprehensive Land Management Technology Using Satellite Image Information Bigdata 1	[UOS SS1] GeoAI-Powered Satellite Observations: Methods and Applications	[GIS1] GIS 1	[OPT] Optical Sensor	[ML1] Machine Learning 1
	14:45-16:00	Poster Session I (2F Lobby)				
2 Day : 15-May 2025 (THU)	16:00-17:15	[INHA SS2] Special Session on Development of Comprehensive Land Management Technology Using Satellite Image Information Bigdata 2	[UOS SS2] Satellite-Based Earth Observations: Methods and Applications	[GIS2] GIS 2	[UAV] UAV	[ML2] Machine Learning 2
	17:30-19:30	Banquet (2F Premier Ballroom B+C)				
	09:00-10:15	[SC1] Student Competition 1	[KIOST SS1] Ocean Color Remote Sensing	[LND1] Land1	[MW] Microwave	[ML3] Machine Learning 3
2 Day : 15-May 2025 (THU)	10:15-10:30	Coffee Break				
	10:30-11:45	[SC2] Student Competition 2	[KIOST SS2] Advancing Tidal Flat Change Detection Using Multi-Platform Remote Sensing	[LND2] Land2	[SAR] SAR	[ML4] Machine Learning 4
	11:45-13:00	Lunch				
	13:00-14:15	[SC3] Student Competition 3	[KOPRI SS] Remote Sensing for Polar Research	[LND3] Landslide, Earthquake	[OCN] Ocean	[ML5] Machine Learning 5
	14:15-15:30	Poster Session II (2F Lobby)				
	15:30-16:45	대한원격탐사학회 이사회	[MNU SS] Application of Airborne Bathymetric LiDAR for Monitoring Spatial Changes in Tidal Flats	[LND4] Fire, Volcano	[ATM] Atmosphere	[ML6] Machine Learning 6
17:30-19:30	Young Scholar's Night (Terrasson)					
3 Day : 16-May 2025 (FRI)	09:00-10:15	[NIES, Japan SS] Satellite Remote Sensing of Greenhouse Gases and Expectations for Future Asian Satellites	[KARI SS1] International Cooperation for Satellite Data Application 1	[CAL1] Calibration and Registration 1	[CLI] Climate Change	[RS1] Remote Sensing Applications 1
	10:15-10:30	Coffee Break				
	10:30-11:45		[KARI SS2] International Cooperation for Satellite Data Application 2	[CAL2] Calibration and Registration 2	[MAP] Mapping	[RS2] Remote Sensing Applications 2
	11:50-12:30	Closing Ceremony (2F Premier Ballroom A)				



Opening Ceremony

Wednesday, 14 May 2025 10:00-10:20 2F Premier Ballroom A

Chairperson: *Prof. Seung-Kuk Lee* (Pukyong National University, Korea)

Welcome messages

Dr. Joo-Hyung Ryu

Korea Institute of Ocean Science and Technology
President, Korean Society of Remote Sensing

Dr. Tsuneo Matsunaga

National Institute for Environmental Studies, Japan
President, Remote Sensing Society of Japan

Prof. Fuan Tsai

National Central University, Taiwan
President, Chinese Society of Photogrammetry and Remote Sensing

Keynote Speech

Wednesday, 14 May 2025 10:20-12:00 2F Premier Ballroom A

Dr. Hyun-Cheol Kim

Center of Remote Sensing & GIS
Korea Polar Research Institute, Korea

Prof. Kuo-Hsin Tseng

Center for Space and Remote Sensing Research
National Central University, Taiwan

Dr. Hironori Maejima

Japan Aerospace Exploration Agency (JAXA), Japan

Keynote Speech 1



Dr. Hyun-Cheol Kim

Director

Center of Remote Sensing & GIS, Korea Polar Research Institute, Korea

Dr. Hyun-Cheol Kim received his Ph.D. in Earth and Environmental Sciences from Seoul National University, specializing in satellite oceanography. Since 2007, he has worked at the Korea Polar Research Institute (KOPRI), focusing on Arctic and Antarctic studies using satellite and UAV remote sensing. Since 2012, he has also served as a faculty member at the University of Science and Technology (UST), teaching polar remote sensing. He established the Remote Sensing Group at KOPRI in 2016 and currently leads the Center of Remote Sensing and GIS. His team specializes in cryospheric research using diverse remote sensing technologies, including KOMPSAT, which he was the first to apply to polar science. He has been actively involved in international collaborations and received the Korea Prime Ministerial Citation in 2019 and the International Cooperation Award from the Ministry of Science and ICT in 2024.

Polar from Space: Korea's Remote Sensing for Cryosphere and Climate Change

The polar regions are undergoing unprecedented transformations due to global climate change. These changes—such as rapid sea ice decline, glacier retreat, and permafrost degradation—not only affect the polar environment but also have profound implications for global sea levels, weather systems, and ocean circulation. In this context, polar research has become an essential component of global climate science. The Korea Polar Research Institute (KOPRI), the nation's leading polar research institution, has been at the forefront of monitoring and understanding these changes through advanced remote sensing technologies. Utilizing both satellite data and UAV-based observations, KOPRI has been steadily advancing research in sea ice and glacier monitoring and developing climate indicators based on long-term cryospheric trends. This keynote will introduce the key achievements of KOPRI's Center of Remote Sensing and GIS, established in 2016 to coordinate and expand Korea's remote sensing capabilities in the Arctic and Antarctic. The presentation will also highlight KOPRI's unique international infrastructure—such as its operation of polar research stations and active participation in global scientific networks—which enables Korea to play a leading role in international climate and cryosphere research. Through interdisciplinary science, global collaboration, and open data practices, KOPRI is committed to supporting the international community's efforts in building resilience against climate change. This keynote will share Korea's vision for polar science and extend an invitation to strengthen international partnerships in remote sensing and cryospheric research.

Keynote Speech 2

Prof. Kuo-Hsin Tseng

Center for Space and Remote Sensing Research, National Central University, Taiwan

Kuo-Hsin (Steven) Tseng earned his B.S. in Civil Engineering from National Chiao-Tung University, Taiwan, in 2005 and his Ph.D. in Geodetic Science from Ohio State University, USA, in 2012. He is a Distinguished Professor at the Center for Space and Remote Sensing Research (CSRSR) at National Central University (NCU), Taiwan, and is affiliated with NCU's Institute of Hydrological and Oceanic Sciences and the Department of Civil Engineering. His research specializes in satellite altimetry, GNSS, and remote sensing applications. He has collaborated with Taiwan's Ministry of the Interior (MOI) on Electronic Navigational Charts (ENC) and coastal geodetic surveys. In 2024, his work integrating ICESat-2 altimetry with multispectral imagery to derive shallow water bathymetry was featured in NASA's Early Adopter Showcase.



Satellite Remote Sensing Approaches for Coastal Geomorphology and Temporal Mapping in Taiwan

Coastal areas are densely populated and subject to various human activities, while the intertidal zones and river mouths support diverse ecosystems. Meanwhile, coastal geomorphology is undergoing amplified changes due to a combination of natural and anthropogenic factors. Understanding the temporal dynamics and current state of land formation is crucial for ensuring sustainable management of these regions. In Taiwan, various satellite remote sensing techniques have been employed to map elevation in coastal zones, enabling the seamless integration of elevation models. For instance, the ICESat-2 laser altimeter, in combination with multispectral imagery from Sentinel-2, maps shallow waters and produces satellite-derived bathymetry (SDB) products. The elevation of intertidal zones is reconstructed using a series of SPOT satellite images captured at varying tidal heights alongside tide models to assess inundation probabilities and actual land formation. Airborne LiDAR-derived Digital Elevation Models (DEMs) provide a static reference for land areas, with temporal changes monitored through the Sentinel-1 PSInSAR time series. Integrating those models from subtidal, intertidal, and upland zones can generate a comprehensive, multidimensional DEM of the entire region, supporting effective planning and management.

Keynote Speech 3



Dr. Hironori Maejima

Japan Aerospace Exploration Agency (JAXA), Japan

Hironori Maejima earned his B.S. in Electrical Engineering from Science University of Tokyo in 1989, M.S. in Communication Engineering from Tohoku University in 1991, and Ph.D. in Systems Engineering from Keio University in 2012. He is a Chief Senior Officer of Earth Observation Missions, JAXA, and a Lecturer in Yokohama National University. He has experienced lots of the Satellite development projects in JAXA including the Earth observation satellite (ADEOS), the Lunar orbiter (SELENE), the Mercury orbiter (BepiColombo) and the X-ray observatory (XRISM).

Outline of the Earth Observation Missions in JAXA

JAXA started its Earth Observation Missions in the 1980s. After two decades of the technology acquisition and validation of the Earth Observation systems in space and on the ground, the demonstration of the utilization has been implemented. The area of utilization has expanded to climate change, disaster monitoring, agriculture, forest and fishery, infrastructure management and so on.

JAXA embarked on a seven-year mid- and long-term plan starting this April. We plan to restructure the Earth Observation program with a view to obtaining tangible benefits and promoting social implementation.

This talk outlines the JAXA's Earth Observation Missions in the past, present and future.



Closing Ceremony

Friday, 16 May 2025 11:50~12:30 2F Premier Ballroom A

Chairperson: *Prof. Seung-Kuk Lee* (Pukyong National University, Korea)

Technical Review of ISRS2025

Dr. Junhwa Chi

Pukyong National University
Chair, Technical Program Committee

Announcement of Student Award

Prof. Junhwa Chi

Pukyong National University
Chair, Technical Program Committee

Announcement of ISRS2026

Dr. Tsuneo Matsunaga

National Institute for Environmental Studies, Japan
President, Remote Sensing Society of Japan

Closing Remarks

Dr. Joo-Hyung Ryu

Korea Institute of Ocean Science and Technology
President, Korean Society of Remote Sensing

Wednesday, 14-May 2025

R1 (Premier Ballroom A)

13:30-14:45

INHA SS1

Special Session on Development of Comprehensive Land Management Technology Using Satellite Image Information Bigdata 1

Chair: TAEJUNG KIM (Inha University)

- 13:30 PROJECT SUMMARY AND CURRENT ACHIEVEMENTS FOR DEVELOPMENT OF COMPREHENSIVE LAND MANAGEMENT TECHNOLOGY USING SATELLITE IMAGE INFORMATION BIGDATA
TAEJUNG KIM
- 13:45 ACCURACY VERIFICATION OF SATELLITE IMAGE BIGDATA PROCESSING TECHNOLOGY
SEUNGHWAN BAN, TAEJUNG KIM
- 14:00 DEVELOPMENT OF A BIG DATA PLAT FORM FOR SATELLITE INFORMATION
PYUNG-CHAE LIM, HYEONG-GYU KIM, SOOAHM RHEE
- 14:15 THE POLICIES OF LICENSE AND PRICE OF SATELLITE IMAGERY FOR PROMOTING SATELLITED DERIVED INFORMATION - TARGETING LOCAL GOVERNMENT DEMAND SOURCES
EUNMI CHANG, JIWON KIM, SEONHEE HONG
- 14:30 ACCURACY ANALYSIS OF BUILDING CLASSIFICATION DEEP LEARNING MODELS BASED ON DIFFERENCES IN ACQUISITION CONDITIONS BETWEEN TRAINING AND TEST DATASETS
CHUL-SOO YE

16:00-17:30

INHA SS2

Special Session on Development of Comprehensive Land Management Technology Using Satellite Image Information Bigdata 2

Chair: CHUL-SOO YE (Far East University)

- 16:00 MULTI-SATELLITE IMAGERY AND AI TECHNIQUES FOR RESERVOIR MONITORING IN KOREA
WANYUB KIM, MINHA CHOI
- 16:15 AN ENSEMBLE OF AI TIME-SERIES MODELS FOR RESERVOIR STORAGE RATE IN SOUTH KOREA: ACCURACY IMPROVEMENT USING EXPERT KNOWLEDGE-BASED RAINFALL-RUNOFF MACHANISM
JAESEONG PARK, YANGWON LEE
- 16:30 ANALYSIS OF WATERBODY CHANGES IN SMALL- AND MEDIUM-SIZED RESERVOIRS USING OPTICAL SATELLITE IMAGERY BASED ON GOOGLE EARTH ENGINE
YOUNGHYUN CHO
- 16:45 WILDFIRE SUSCEPTIBILITY MAPPING WITH MULTI-RESOLUTION DATA FUSION: INTEGRATING REMOTE SENSING AND GIS DATA FOR ENHANCED RISK PREDICTION
WONBIN KANG, YONGIL KIM
- 17:00 ESTIMATION OF FOREST CANOPY HEIGHT USING LIDAR, NDVI, AND INSAR DATASETS
YUN-JAE CHOUNG, JOON-HO SHIN, SAMAR MOHAMED
- 17:15 PORT MONITORING THROUGH SATELLITE IMAGES
HO-KUN JEON, HYUNSOO KIM, JAE-YEOP KWON, TAE-HO KIM

R2 (204)

13:30-14:45

UOS SS1 GeoAI-Powered Satellite Observations: Methods and Applications

Chair: SUNMIN LEE (KEI)

- 13:30 **A STUDY OF WATER-BODY SEGMENTATION IN URBAN AREAS USING TERRASAR-X IMAGES**
EURU LEE, JUN-HYEOK JUNG, HYUNG-SUP JUNG
- 13:45 **SNOW COVER MAPPING VIA 3D ATTENTION U-NET FOR THE GEOSTATIONARY ENVIRONMENT MONITORING SPECTROMETER (GEMS)**
JIN-WOO YU, JUN-HYEOK JUNG, HYUNG-SUP JUNG
- 14:00 **A STUDY ON WILDFIRE-AFFECTED AREAS IN VALPARAÍSO, CHILE, IN 2024 USING LANDSAT IMAGERY AND SENTINEL-1 SATELLITE DATA**
BONGCHAN KIM, ARIEF RIZQIYANTO ACHMAD, WAHYU LUGMANUL HAKIM, MUHAMMAD FULKI FADHILLAH, EUNSEOK PARK, CHANG-WOOK LEE
- 14:15 **UTILIZATION OF OPTICAL AND RADAR IMAGERY FOR WILDFIRE SUSCEPTIBILITY MAPPING USING COUPLED CNN-LSTM ALGORITHM: A CASE STUDY IN THE 2025 LOS ANGELES WILDFIRE**
ARIEF RIZQIYANTO ACHMAD, EUN-SEOK PARK, CHANG-WOOK LEE

16:00-17:15

UOS SS2 Satellite-Based Earth Observations: Methods and Applications

Chair: SUNMIN LEE (KEI)

- 16:00 **OBSERVATION OF GROUND UPLIFT DUE TO GROUNDWATER LEVEL CHANGE WITH MT-INSAR TIME-SERIES**
SEONGCHEON PARK, SANG-HOON HONG, FRANCESCA CIGNA
- 16:15 **L-BAND UNMANNED AERIAL VEHICLE SAR FOR SURFACE DEFORMATION MONITORING: APPLICATION TO SLOPE STABILITY ASSESSMENT**
JEONGHEON JU, SANG-HOON HONG, SANG-WAN KIM, OTHMAR FREY
- 16:30 **APPLICATION OF GOCI TO THE ESTIMATE OF HABITAT FOR MACKEREL IN THE SOUTH KOREA EXCLUSIVE ECONOMIC ZONE**
DONI NURDIANSAH
- 16:45 **GEOSPATIAL MODELING OF SEAWEED AQUACULTURE SUITABILITY IN LOMBOK, INDONESIA USING OCEAN COLOR REMOTE SENSING**
MD RAKESUR RAHMAN

R3 (205)

13:30-14:45

GIS1

GIS 1

Chair: CHANG-WOOK LEE (Kangwon National University)

- 13:30 **UTILIZATION OF MULTI-TEMPORAL SAR FOR LAND SUBSIDENCE SUSCEPTIBILITY ASSESSMENT IN THE SEMARANG-DEMAK AREA, INDONESIA**
WAHYU LUQMANUL HAKIM, SEULKI LEE, SUNGJAE PARK, MUHAMMAD FULKI FADHILLAH, CHANG-WOOK LEE
- 13:45 **ADVANCED ENSEMBLE MACHINE LEARNING APPROACH FOR ESTIMATING SPATIOTEMPORAL DISTRIBUTION OF TOTAL HYDROCARBON (THC) CONCENTRATION IN TAIWAN**
THIA PRAHESTI, AJI KUSUMANING ASRI, YU-TING ZENG, SHIH-CHUN CANDICE LUNG, CHIH-DA WU
- 14:00 **APPLICATION OF GEOSPATIAL ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING TO INVESTIGATE THE IMPACT OF HYDROGEN-FUELED POWER PLANTS ON REGIONAL PM2.5**
CHIEH YING CHEN, SIN YI LAI, YU TING ZENG, CHIH DA WU
- 14:15 **MULTI-SENSOR TIME SERIES INSAR MONITORING OF SPATIOTEMPORAL LAND SUBSIDENCE WITH INTEGRATING MACHINE LEARNING APPROACH IN BANGKOK, THAILAND**
MUHAMMAD FULKI FADHILLAH, WAHYU LUQMANUL HAKIM, CHANG-WOOK LEE
- 14:30 **ANALYZING THE UNSEEN: MODULAR OPEN-SOURCE GEOSPATIAL DATA SCIENCE ECOSYSTEM FOR GEOAI**
JINHA JUNG, BENJAMIN HANCOCK, MINYOUNG JUNG

16:00-17:15

GIS2

GIS 2

Chair: JI SANG PARK (ETRI)

- 16:00 **NATIONWIDE LAND COVER CLASSIFICATION IN SOUTH KOREA USING SENTINEL-1 AND SENTINEL-2 IMAGERY IN GOOGLE EARTH ENGINE**
EESHA AFRIDI, AISHA JAVED, YOUKYUNG HAN
- 16:15 **EQUITABLE SIDEWALKS FOR ALL: ENHANCING HOSPITAL PEDESTRIAN ACCESSIBILITY THROUGH DATA-DRIVEN ASSESSMENT**
FEBRIAN FITRYANIK SUSANTA, PEI FEN KUO, I GEDE BRAWISWA PUTRA, BIMO TEDJO
- 16:30 **THE FLOOD RISK SPATIAL ANALYSIS OF ULAANBAATAR CITY**
ENKHZAYA. E, GAN-ERDENE. G, UURIINTSOLMON. G, BALJINNAYM. B, BAYANMUNKH. N, ENKHJARGAL. N, IDERBAYAR. SH, NURMAA. B, BOLORMAA. B
- 16:45 **ASSESSMENT OF OPTIMAL SITES FOR SOLAR-POWER IRRIGATION SYSTEMS USING REMOTE SENSING AND GIS: CASE OF THE PHILIPPINES**
JEARK PRINCIPE, WATARU TAKEUCHI
- 17:00 **IDENTIFYING RISK FACTORS FOR OLDER ADULT PEDESTRIAN AND BIKE CRASHES USING PERCEPTION-BASED STREET VIEW IMAGERY AND SPATIAL MODEL**
I GEDE BRAWISWA PUTRA, PEI-FEN KUO, FEBRIAN FITRYANIK SUSANTA, BIMO HARYA TEDJO

R4 (206)

13:30-14:45

OPT Optical Sensor

Chair: KUO-HSIN TSENG (National Central University)

- 13:30 A TRIAL OF SHIPS AND OYSTER RAFTS DETECTION USING OPTICAL AND SAR SENSORS OFF THE COAST OF HIROSHIMA PREFECTURE, JAPAN**
KOTOE UENO, YUJI SAKUNO
- 13:45 ENHANCING REMOTE SENSING OF WATER QUALITY IN TRIBUTARIES THROUGH PARTICIPATORY SCIENCE**
MIN-SUN LEE, CO, MARIA TZORTZIOU CO, JI-EUN PARK, TONG LIN, PATRICK NEALE, SHELBY BROWN, TARA SILL, ALISON CAWOOD
- 14:00 A SOFT CONSTRAINT-BASED RPC REFINEMENT FOR IMPROVING GEOMETRIC ACCURACY**
BO YI LIN
- 14:15 HYPERSPECTRAL SUPER-RESOLUTION FOR GEMS: A DEEP LEARNING APPROACH TO ENHANCING GEOSTATIONARY ENVIRONMENTAL MONITORING**
SIHYUN LEE, HYUNYOUNG CHOI, JUNGH0 IM
- 14:30 A COST-EFFECTIVE MULTI-SENSOR SYSTEM FOR INTEGRATED TRACK ALIGNMENT AND GEOMETRY INSPECTION IN NARROW-GAUGE FOREST RAILWAYS**
YU-HSIANG KANG, TZU-YI CHUANG

16:00-17:15

UAV UAV

Chair: MING-DER YANG (National Chung Hsing University)

- 16:00 DETECTION OF OFFSHORE WIND TURBINE TOWER TILT AND RUSTED: INTEGRATION OF UAV IMAGERY AND TOTAL STATION TECHNOLOGY**
PO YEN CHEN, TZU YI CHUANG
- 16:15 EVALUATION OF UAV-BASED ORTHOMOSAIC ACCURACY BASED ON IOP SETTINGS**
CHANSOL KIM, SEUNGCHAN LIM, DONGGYU KIM, CHULUONG CHOI
- 16:30 COMPARISON OF YOLO OBJECT DETECTION ACCURACY BEFORE AND AFTER LENS DISTORTION CORRECTION**
SEUNGCHAN LIM, CHANSOL KIM, DONGGYU KIM, CHULUONG CHOI
- 16:45 ESTIMATING TEA TREE ABOVEGROUND BIOMASS AND CARBON STORAGE USING UAV RGB IMAGERY**
SHIH-JUNG PAI, HUI PING TSAI, KUO-JUNG CHAO
- 17:00 LANDSLIDE OBSERVATION OF MT. TOHAM USING TEMPORAL SPATIAL DATA OF DRONE MAPPING**
SEONGSAM KIM, EONTAEK LIM, YONGHAN JUNG, SEUL KOO

Wednesday, 14-May 2025

R5 (207)

13:30-14:45

ML1

Machine Learning 1

Chair: JEARK PRINCIPE (University of the Philippines, Diliman)

- 13:30 **GAP FILLING IN HISUI HYPERSPECTRAL CLASSIFICATION MAPS THROUGH INTEGRATION WITH ASTER MULTISPECTRAL DATA IN IBARAKI PREFECTURE, JAPAN**
HIDEKI TSUBOMATSU, HIDEYUKI TONOOKA
- 13:45 **DEEP LEARNING-BASED BUILDING FOOTPRINT EXTRACTION FROM PLEIADES VERY HIGH-RESOLUTION IMAGERY**
YOFRI FURQANI HAKIM, FUAN TSAI
- 14:00 **FAÇADE INFORMATION-BASED POLYGONAL BUILDING EXTRACTION FROM OFF-NADIR SATELLITE IMAGERY**
DONGHYEON LEE, YONGIL KIM
- 14:15 **ENHANCED INTERTIDAL ZONE MONITORING USING SENTINEL-1/2-DERIVED WATERLINES METHOD**
YUANRUI LUO, DUK-JIN KIM
- 14:30 **UP SHADOW GAN-BASED SHADOW REMOVAL FOR IMPROVING BUILDING SEGMENTATION IN AERIAL IMAGERY**
JUHEE LEE, JANGWOO CHEON, INHYEOK LEE, CHONG LEE, DONGUN LEE, BUI NGOC AN, IMPYEONG LEE

16:00-17:15

ML2

Machine Learning 2

Chair: CHAO-HUNG LIN (National Cheng Kung University)

- 16:00 **A VOXEL-BASED ALGORITHM FOR DETECTING CHANGES IN ROAD OBJECTS USING TEMPORAL POINT CLOUDS**
GUANG-KUEI LIANG, CHI-KUEI WANG, HONG-PING LO
- 16:15 **LAND COVER CHANGE DETECTION USING TIME SERIES SENTINEL-2 MSI: CLOUD REMOVAL BY HIMAWARI AHI**
HIROKI OHASHI, MASAYUKI MATSUOKA
- 16:30 **UNSUPERVISED MULTICLASS CHANGE DETECTION BASED ON CLUSTER-TO-CLUSTER FEATURE REPRESENTATION**
TAEHONG KWAK, YONGIL KIM
- 16:45 **LAND USE AND LAND COVER CHANGE DYNAMICS AND FUTURE IMAGING USING ML AND QGIS-MOLUSCE**
OYUNBILEG ERDENEBAKRAKH, BOLORMAA BATSUURI, GANDOLJIN NERGUI, BUYANDELGER MYAGMARSUREN, DAGVA RENTSSENDAGVA, ENKHJARGAL NATSAGDORJ, BYAMBASUREN DAMDIN
- 17:00 **BUILTUP CHANGE DETECTION USING OPEN-SOURCE GIS FOR VADODARA URBAN DEVELOPMENT AUTHORITY**
SWEATA KATWALA, ANJANA VYAS

POSTER SESSION I

2F Robby
14:45-16:00

- WP-01 **TRANSFORMING WINTER ROAD CONDITIONS MONITORING WITH ADVANCED SPATIAL ANALYTICS AND DEEP LEARNING**
MICHAEL URBIZTONDO, MINGJIAN WU, TAE J. KWON
- WP-02 **APPLICATION OF PRECISE POINT POSITIONING TECHNOLOGY IN TIDE COMPONENT ESTIMATION FOR BATHYMETRY SURVEY**
YU-I CHUNG, TA-KANG YEH, HSUAN-CHANG SHIH
- WP-03 **ANALYSIS OF THE RELATIONSHIP BETWEEN URBAN GREEN SPACES AND ECONOMIC DISPARITIES IN SEOUL USING NDVI**
JIYOON MOON, KWANGJAE LEE
- WP-04 **COMPARATIVE ANALYSIS OF CYCLEGAN AND PIX2PIX FOR SAR-TO-OPTICAL IMAGE TRANSLATION ACROSS FOUR LAND COVER TYPES**
HIROFUMI SHIMAOKA, KAN-ICHIRO MOCHIZUKI, HIDEKI SHIMAMURA, KAHU URUNO, AYANE HAMA, REI SONOBE
- WP-05 **GAN-BASED DEM-TO-ORTHO IMAGE TRANSLATION USING LUNAR ORBITER KAGUYA TERRAIN CAMERA DATA**
YUKI SANO, KAN-ICHIRO MOCHIZUKI, HIDEKI SHIMAMURA, REI SONOBE
- WP-06 **DEEP LEARNING-BASED PSEUDO LABELING TECHNIQUE FOR GENERATION OF HIGH-RESOLUTION DEFORESTATION DATASET**
YEONJU CHOI, DONGOO LEE
- WP-07 **SPECTRALLY SEGMENTED DATA MINING BASED HYPERSPECTRAL BAND SELECTIONS FOR IMPROVING FOREST TYPE IDENTIFICATIONS**
YI-CING SUN, JHE-SYUAN LAI, YUNG-CHUNG CHUANG, PEI-JUNG WANG, UEN-HAO WANG
- WP-08 **ANALYSIS OF SUN INTERFERENCE TIME FOR SATELLITE LONGITUDE CHANGE IN GOCI-II IMAGE DATA RECEPTION**
YOUNG-MIN CHO
- WP-09 **DESIGN OF A TOOLBOX FOR SAR SATELLITE IMAGE PROCESSING AND UTILIZATION COVERING KOMPSAT-5/6 AND OTHER SATELLITES, AND EXPERIMENTAL APPLICATION OF CHANGE DETECTION FUNCTIONS**
SUNG-HO CHAE, KWAN-YOUNG OH, KWANG-JAE LEE
- WP-10 **FEATURE SELECTION AND MACHINE LEARNING-BASED CLASSIFICATION OF FOREST TYPE USING MULTISPECTRAL AND SAR IMAGERY**
GENG-GUI WANG, HUI PING TSAI
- WP-11 **NG REMOTE SENSING TO INVESTIGATE THE IMPACT OF PHOTOVOLTAIC PANELS ON SURFACE TEMPERATURE – A CASE STUDY OF TAINAN CITY**
WEI-JYUN CHEN, SU-FEN WANG

Wednesday, 14-May 2025

- WP-12 **K-ARD: DEVELOPMENT AND APPLICATION OF ANALYSIS READY DATA (ARD) FOR KOMPSATS**
WOOSUNG PARK, DOCHUL YANG, JAEHEON JEONG, PYUNG-CHAE LIM
- WP-13 **CLOUD CORRECTION IN TEMPERATE FORESTS USING SPECTRAL-TEMPORAL BARLOW TWINS: A PRACTICAL APPLICATION**
SOOHYUN KWON, CHUL-HEE LIM
- WP-14 **METHANE EMISSION MONITORING USING SENTINEL-2 SATELLITE DATA AND GOOGLE EARTH ENGINE CLOUD COMPUTING-BASED ANALYSIS: CASES OF OIL AND GAS PRODUCTION FACILITIES AND A LANDFILL SITE**
MINJU KIM, JEONGWOO PARK, MINKYEONG KANG, CHANG-UK HYUN
- WP-15 **HIGH-RESOLUTION LAND USE AND LAND COVER CLASSIFICATION BY GEE-BASED MACHINE LEARNING SCHEME**
JEONGHEE LEE, SEUNGJAE JOO, KIWON LEE
- WP-16 **SUPER-RESOLUTION OF HIMAWARI AHI USING SRCNN: PERFORMANCE EVALUATION BY SPECTRAL BAND AND SPATIAL RESOLUTION**
YOHEI KATO, MASAYUKI MATSUOKA
- WP-17 **INTEGRATION-BASED STRATEGY FOR ANALYSIS READY DATA PROCESSING OF HETEROGENEOUS SATELLITE METADATA**
JIHYUN LEE, SEUNG CHUL LEE, KWANGSEOB KIM
- WP-18 **A PRELIMINARY STUDY ON OPTIMIZING HIGH-RESOLUTION SATELLITE DATA PROCESSING FOR GENERATIVE MODEL**
TAE YEON WON, KWANGSEOB KIM, SEUNG CHUL LEE
- WP-19 **ADVANCED TEMPORAL DOWNSCALING OF GROUND-LEVEL NH₃ FROM BIWEEKLY TO DAILY RESOLUTION**
SAMAN MALIK, EUNJIN KANG, YOJIN KANG, JUNGHOO IM
- WP-20 **MAGMATIC ACTIVITY OF CERRO AZUL VOLCANO AFTER THE 2017 UNREST INVESTIGATED USING TIME-SERIES INSAR**
SEOHYEON KIM, HYANGSUN HAN, SEUNG CHUL LEE
- WP-21 **UAV PATH FINDING USING DEEP Q NETWORK**
PEI-HSUAN HUANG, CHAO-HUNG LIN
- WP-22 **PIECEWISE RPCS BIAS-COMPENSATION OF HIGH-RESOLUTION SATELLITE IMAGES**
JAEHONG OH, HYEONJEONG JO, JAEUK RYU
- WP-23 **OPTIMAL GSD DETERMINATION FOR COASTAL DEBRIS MONITORING BASED ON FIELD CONDITIONS: A CASE STUDY OF THE EAST SEA, KOREA**
BORAM KIM, YEBEEN DO, TAEHOON KIM, JUNHWA CHI
- WP-24 **EFFECT OF BRDF ON GROUND OBSERVATION ACCORDING TO THE SENSOR VIEWING AND SOLAR ILLUMINATION ANGLES**
HYUN-DONG MOON, KYEONG-MIN KIM, BO-KYEONG KIM, SUBIN CHOI, HYUNHWAN YANG, JAE-HYUN RYU, HO-YONG AHN, JAEIL CHO

- WP-25 DEEP LEARNING BASED DIGITAL HEMISPHERICAL PHOTOGRAPHY IMAGE SEGMENTATION FOR ACCURATE LAI ESTIMATION**
JIWON LEE, JAESE LEE, WOOHYEOK KIM, YOOJIN KANG
- WP-26 RESEARCH AND TECHNOLOGY OF ALGORITHMS FOR THE CALCULATION OF SURFACE REFLECTANCE THROUGH MULTI-SATELLITE DATA FUSION**
DOHEE HAN, SUHWAN KIM, YEJIN LEE, YOONJI KIM, SEOKJIN HAHN, YOUNGRYEL RYU, SEUNGTAEK JEONG, JONGSEONG HA, JONGMIN YEOM
- WP-27 ADVANCED WEED DETECTION IN PADDY FIELDS USING HYPERSPECTRAL UAV AND MACHINE LEARNING**
NIK NORASMA CHE'YA, AMIERUL AMIN AZMAN, MUHAMMAD NOOR HAZWAN ABD MANAF, NORSIDA MAN
- WP-28 SATELLITE DATA AUGMENTATION VIA LABEL-TO-IMAGE TRANSLATION FOR KOMPSAT SATELLITE IMAGERY**
GANGHYUN PARK, SUN-GU LEE
- WP-29 A STUDY OF ENHANCING SATELLITE IMAGE RESOLUTION: APPLICABILITY OF STGDFM FOR SPATIAL-SPECTRAL DATA FUSION**
YESEUL KIM, KWAN-YOUNG OH
- WP-30 ANALYSIS OF GEOLOCATION ERROR IN SAR IMAGERY USING KOMPSAT-5 AND ICEYE**
JIHUN HONG, SUNGU LEE, SANGHYUCK HAN, SUNG-HO CHAE, YEONJU CHOI
- WP-31 AUTOMATED OUTLIER DETECTION IN MULTIBEAM ECHOSOUNDER POINT CLOUD DATA USING POINT-BASED NEURAL NETWORKS**
HAO-YUN CHIANG
- WP-32 CAS500-1 BCD: BUILDING CHANGE DETECTION DATASET FOR SOUTH KOREA**
DONGHYEOK JIN, JISANG PARK, JUNHWA CHI
- WP-33 DEVELOPMENT AND VERIFICATION OF KARI ACTIVE TRANSPONDER FOR SAR SATELLITE CALIBRATION AND IMAGE QUALITY VALIDATION**
HORYUNG JEONG, DONGHYUN KIM, DOCHUL YANG, DOOCHUN SEO
- WP-35 WATER LEVEL ESTIMATED BY SWOT PIXEL CLOUD DATA IN TAIWAN**
KUO-HSIN TSENG
- WP-36 ASSESSMENT OF MULTI-SATELLITE HARMONIZED REFLECTANCE DATA FOR AGRICULTURAL MONITORING**
HOYONG AHN, JAE-HYUN RYU, KYUNG-DO LEE, YOUNG-AH JEON
- WP-37 VALIDATION OF SENTINEL-3A/B SLSTR SKIN SEA SURFACE TEMPERATURE IN COASTAL REGIONS OF THE KOREAN PENINSULA**
NA-YEON CHA, CHAE-YOUNG LIM, KYUNG-AE PARK, TAE-SUNG KIM, JAE-JIN PARK, MOON-JIN LEE
- WP-38 MONITORING OF THE OIL SPILL ACCIDENT AT SEONGSAN PORT, JEJU ISLAND USING SENTINEL-2 SATELLITE IMAGERY**
JINHO LEE, KYUNG-AE PARK, JAE-JIN PARK, TAE-SUNG KIM

Thursday, 15-May 2025

R1 (Premier Ballroom A)

09:00-10:15

SC1

Student Competition 1

Chair: HYANGSUN HAN (Kangwon National University), SHIN NAGAI (JAMSTEC)

- 09:00 **REFERENCE-FREE UAV IMAGE QUALITY ASSESSMENT USING DEEP LEARNING**
YA-LI LIN, LAI-HAN ZOU, GUAN-CHIN SU, CHAO-HUNG LIN, JIANN-YE0U RAU, CHENG HSIN LI, CHIH-CHAO HU, WEI-SHEN LAI
- 09:15 **BPA-BASED INSAR FOR HIGH-RESOLUTION DEM GENERATION WITH HIGH-PRECISION ANTENNA TRAJECTORY ESTIMATION**
SANGHO AN, DUK-JIN KIM
- 09:30 **PARAMETERIZATION OF TIME-VARYING VEGETATION SCATTERING ALBEDO FOR SOIL MOISTURE RETRIEVAL IN OIL PALM WITH AMSR2**
CHIHIRO NAITO, WATARU TAKEUCHI
- 09:45 **REPLAY-BASED CONTINUAL LEARNING FOR PRACTICAL UTILIZATION OF REMOTE SENSING IMAGERY**
YESEOK LEE, YONGIL KIM
- 10:00 **ANALYSIS OF FLOOD VULNERABILITY IN SEOUL USING ARTIFICIAL NEURAL NETWORK**
JUNHYEOK JUNG, EORU LEE, HYUNGSUP JUNG

10:30-11:45

SC2

Student Competition 2

Chair: SEUNG HEE KIM (KOPRI), KHIN MYAT KYAW (The University of Tokyo)

- 10:30 **ACCURACY VALIDATION OF GCOM-C SST USING A DATA LOGGER AT KURE PORT, HIROSHIMA PREFECTURE AND SPATIOTEMPORAL INTERPOLATION OF MISSING DATA**
SHUNSUKE URA, YUJI SAKUNO
- 10:45 **ENHANCED VESSEL TRAJECTORY PREDICTION USING HDBSCAN-BASED CLUSTERING AND LSTM SEQ2SEQ MODEL**
HYUNSUN LEE, DUK-JIN KIM
- 11:00 **POLARIMETRIC CALIBRATION OF GROUND-BASED INTERFEROMETRIC DATA USING CORNER REFLECTORS**
JE-YUN LEE, CHAN-UK LEE, JIN-UK GO, SANG-HOON HONG
- 11:15 **RECONSTRUCTION OF GOCI-II CHLOROPHYLL-A DATA USING SPATIO-TEMPORAL ATTENTION PARTIAL CONVOLUTION**
CHAE-EUN KIM, JUNHWA CHI
- 11:30 **FASTSAM-BASED BOUNDARY REFINEMENT OF BUILDING DETECTION RESULTS IN AERIAL IMAGERY**
LEE DONGUN, CHEON JANGWOO, LEE INHYEOK, LEE CHONG, LEE JUHEE, BUI NGOC AN, LEE IMPYEONG

R1 (Premier Ballroom A)

13:00-14:15

SC3

Student Competition 3

Chair: WATARU TAKEUCHI (The University of Tokyo), AHRAM SONG (Kyungpook National University)

- 13:00 **MAMBA-GAN NETWORK FOR HIGH-RESOLUTION REMOTE SENSING IMAGE SUPER-RESOLUTION**
VICTORIA AMADIN, MINKYUNG CHUNG, YOUKYUNG HAN
- 13:15 **UAV VISUAL GEOLOCATION USING LEARNING-BASED IMAGE MATCHING**
TZU-HSIU CHEN, LAI-HAN TSOU, YEN-CHENG LIN, CHAO-HUNG LIN, JIANN-YEOU RAU
- 13:30 **IMPROVEMENT OF WATER LEVEL ESTIMATION ALGORITHM USING SWOT SLC DATA SPECIALIZED TO RESERVOIRS IN SOUTH KOREA**
JINGLIN JIN, DUK-JIN KIM
- 13:45 **RESERVOIR WATER LEVEL ESTIMATION USING A SINGLE SATELLITE IMAGE AND TERRAIN HEIGHT INTERPOLATION**
HONGJUN YOUN, TAEJUNG KIM

Thursday, 15-May 2025

R2 (204)

09:00-10:15

KIOST SS1 Ocean Color Remote Sensing

Chair: JONG-KUK CHOI (KIOST)

- 09:00 **RECENT UPDATES IN GOCI-II RADIOMETRIC CORRECTION MODEL**
MINSANG KIM, MYUNG-SOOK PARK, JAE-HYUN AHN, JONG-KUK CHOI
- 09:15 **REFINING GOCI-II GAS ABSORPTION CORRECTION VIA INTEGRATION WITH AMI AND GEMS ATMOSPHERIC DATA**
KYEONG-SANG LEE, MYUNG-SOOK PARK, JONG-KUK CHOI, JAE-HYUN AHN
- 09:30 **A STUDY TO ESTIMATE PHOTOSYNTHESIS AVAILABLE RADIATION (PAR) USING GOCI-II IMAGERY**
DEUK JAE HWANG, KYEONG-SANG LEE, JAE-HYUN AHN, SUJUNG BAE, JONG-KUK CHOI
- 09:45 **APPLICATION OF GOCI SERIES IN MONITORING SEA SURFACE SALINITY**
EUNNA JANG, JONG-KUK CHOI, JAE-HYUN AHN, SUJUNG BAE
- 10:00 **MARINE HEATWAVES IMPACTS ON SEASONAL CYCLES OF PHYTOPLANKTON: INSIGHTS FROM GOCI-II VS. POLAR ORBIT SATELLITES**
JI-YEON BAEK, MYUNGSOOK PARK

10:30-11:45

KIOST SS2 Advancing Tidal Flat Change Detection Using Multi-Platform Remote Sensing

Chair: JUN-HO LEE (KIOST)

- 10:30 **AN ADVANCED APPROACH TO SPATIAL DATA ON THE ABUNDANCE OF MULTIPLE MACROINVERTEBRATE SPECIES IN INTERTIDAL SEDIMENTS USING DRONES AND ARTIFICIAL INTELLIGENCE**
JAEHWAN SEO, CHUNG HO KIM, KEUNYONG KIM, YOENGJAE JANG, DONGUK LEE, HYEONG-TAE JOU, JOO-HYUNG RYU, BON JOO KOO
- 10:45 **COMPARATIVE ANALYSIS OF SPECTRAL CHARACTERISTICS BASED ON SEDIMENT COMPOSITION AND MEAN GRAIN SIZE (Φ) USING SENTINEL-2 IMAGERY**
MINJU KIM, WON-KYUNG BAEK, DONGUK LEE, JOO-HYUNG RYU
- 11:00 **TIDAL CREEK EXTRACTION AND HIERARCHICAL CLASSIFICATION USING TOPOGRAPHIC AND FLOW ACCUMULATION DATA**
GA-RAM YUN, SU-BIN HA, YE-YOUNG KIM AND SEUNG-KUK LEE
- 11:15 **DIFFUSION MODEL-BASED SUPER-RESOLUTION OF TIDAL FLATS: A GUIDED DDPM APPROACH**
DONGUK LEE, HYEONG-TAE JOU, JOO-HYUNG RYU

R2 (204)

13:00-14:15

KOPRI SS Remote Sensing for Polar Research

Chair: HYUN-CHEOL KIM (KOPRI)

- 13:00 **POLAR APPLICATIONS USING NEXTSAT-2: MILNE ICE SHELF**
SEUNG HEE KIM, HYUN-CHEOL KIM
- 13:15 **JOINT SEA ICE CLASSIFICATION AND DRIFT RETRIEVAL FROM SAR IMAGERY**
JEONG-WON PARK, HYUN-CHEOL KIM
- 13:30 **MONITORING ADELIE PENGUIN GUANO HABITAT CHANGES AT CAPE HALLETT USING COMBINED SATELLITE AND AERIAL IMAGERY**
JINKU PARK, JEONG-HOON KIM, HYUN-CHEOL KIM, SUPRATIM GUHA
- 13:45 **A COMPREHENSIVE ANALYSIS OF GLACIER LAKE CHANGES USING LANDSAT IMAGERY AT RUSSELL GLACIER, GREENLAND**
SUPRATIM GUHA, YONGSIK JEONG, HYUN-CHEOL KIM, JINKU PARK
- 14:00 **REGIONAL CHANGES IN THE MEAN AND VARIABILITY OF SST OVER THE ARCTIC OCEAN**
JOO-EUN YOON, HYUN-CHEOL KIM, JINKU PARK

15:30-16:45

MNU SS Application of Airborne Bathymetric LiDAR for Monitoring Spatial Changes in Tidal Flats

Chair: JAEBIN LEE (Mokpo National University)

- 15:30 **CASE STUDY ON THE APPLICATION OF AIRBORNE MULTI-SENSING FOR CONSTRUCTING TIDAL FLAT GEOSPATIAL INFORMATION**
HYUNSOO HUR, GWANGJAE WE, KAHYEON KIM, KYOUNGMIN KIM, MINYOUNG KIM
- 15:45 **AN UNSUPERVISED MULTI-STAGE PIPELINE FOR OUTLIER REMOVAL IN AIRBORNE BATHYMETRIC LIDAR DATA**
JAWANG LEE, JAEHONG OH
- 16:00 **OPTIMIZING OBJECT DETECTION MODEL FOR MARINE DEBRIS IDENTIFICATION IN SOUTH KOREA'S TIDAL FLATS USING AI-HUB'S COASTAL POLLUTION SUBSTANCE DATA**
AHRAM SONG
- 16:15 **EVALUATION OF WAVEFORM PROCESSING ALGORITHMS FOR IMPROVING BATHYMETRIC MEASUREMENTS IN TURBID WATERS USING VARIOUS AIRBORNE BATHYMETRIC LIDAR DATA**
HYEJIN KIM, JAEBIN LEE, CHEOLHO CHO

R3 (205)

09:00-10:15

LND1

Land 1

Chair: YESEUL KIM (KARI)

- 09:00 **EXTRACTION OF COASTLINE AND VOLUMETRIC CHANGE ANALYSIS USING SENTINEL-2: A STUDY IN FUNAFUTI, TUVALU**
SREE JUWEL KUMAR CHOWDHURY, CHAN-SU YANG
- 09:15 **LANDSLIDE DATING WITH TRANSFORMER MODELS: A FUSION OF SENTINEL-1 AND SENTINEL-2 TIME-SERIES DATA**
TSUNG-HAN WEN, TEE-ANN TEO
- 09:30 **EVALUATING THE SUSTAINABILITY AND THERMAL BENEFITS OF VERTICAL GREEN INFRASTRUCTURE IN MORI BUILDING PROJECTS IN CENTRAL TOKYO**
TAISHI KIMURA-DAVIES, WATARU TAKEUCHI
- 09:45 **MANGROVE CANOPY HEIGHT ESTIMATION USING SENTINEL-2 AND GEDI DATA WITH EXTREME GRADIENT BOOSTING REGRESSION MODEL**
ILHAM JAMALUDDIN, YING-NONG CHEN, AMALIA GITA AYUDYANTI, KUO-CHIN FAN
- 10:00 **AI-DRIVEN HOURLY GPP ESTIMATION IN EAST ASIA INCORPORATING HIMAWARI-8 AHI AND AEROSOL-INDUCED RADIATION VARIABILITY**
BAE SEJEONG, SON BOKYUNG, SUNG TAEJUN, KANG YOOJIN

10:30-11:45

LND2

Land 2

Chair: CHUL-SOO YE (Far East University)

- 10:30 **BUILDING SEGMENTATION DATASETS CONSTRUCTION FROM HIGH-RESOLUTION SATELLITE IMAGERY: A COMPARATIVE STUDY OF SAM2-BASED AUTOMATIC MASKS AND MANUAL POLYGON ANNOTATIONS**
JAEUK RYU, JAEHONG OH
- 10:45 **GEOSPATIAL ANALYSIS OF ENVIRONMENTAL FACTORS INFLUENCING LAND COVER CHANGE IN MBEYA AND SONGWE, TANZANIA**
CONSOLATHA S. NICHOLAUSA, FUAN TSAI
- 11:00 **ESTIMATION OF BAMBOO EXPANSION AREA IN THE TSUNAMI-DAMAGED COASTAL REGION USING HIGH-RESOLUTION SATELLITE IMAGERY**
TOMOKI NARISAWA, CHINATSU YONEZAWA, KIYOSHI TAKEJIMA
- 11:15 **ANALYZING THE IMPACT OF COVID-19 ON URBAN HEAT ISLAND DYNAMICS USING DOWNSCALED LAND SURFACE TEMPERATURE IN DAEGU METROPOLITAN CITY, REPUBLIC OF KOREA**
KIM YOUNGSEOK, LEE SIWOO, CHO DONGJIN, IM JUNGHO
- 11:30 **FLOWERING PHENOLOGY OBSERVATIONS BY SENTINEL-2 SATELLITES**
SHIN NAGAI, CHIFUYU KATSUMATA

R3 (205)

13:00-14:15

LND3 Landslide, Earthquake

Chair: TEE-AN TEO (National Yang Ming Chiao Tung University)

- 13:00 **DETECTION OF LANDSLIDE USING SAR SUPER-RESOLUTION TECHNIQUE**
BYEONGWOON MIN, JUNSE OH, YOON TAEK JUNG, YE-JUN CHO, SANG-EUN PARK
- 13:15 **POST-SEISMIC STRUCTURAL INTEGRITY ASSESSMENT OF JATILUHUR DAM USING INSAR-BASED DEFORMATION ANALYSIS**
ARLIANDY P. ARBAD, WATARU TAKEUCHI
- 13:30 **MONITORING BUILDING DEMOLITION ACTIVITY USING INTERFEROMETRIC COHERENCE TIME-SERIES IN 2024 NOTO EARTHQUAKE**
KHIN MYAT KYAW, WATARU TAKEUCHI
- 13:45 **3D U-NET-BASED SEMANTIC SEGMENTATION FOR LANDSLIDE DETECTION USING MULTI-TEMPORAL SATELLITE IMAGERY**
YI FANG WU, TSUNG HAN WEN, TEE ANN TAO
- 14:00 **INTEGRATING SAR TIME SERIES AND LSTM FOR ENHANCED LANDSLIDE DETECTION**
SHOU HAO CHIANG

15:30-16:45

LND4 Fire, Volcano

Chair: SAKUNO YUJI (Hiroshima University)

- 15:30 **EVALUATION OF DIFFERENT ENSEMBLE LEARNING ALGORITHMS FOR FOREST FIRE MAPPING USING SENTINEL-2 IMAGERY (CASE STUDY: PART OF CALIFORNIA IN 2025)**
AMALIA GITA AYUDYANTI, YING-NONG CHEN, ILHAM JAMALUDDIN
- 15:45 **FALSE COLOR COMPOSITES OF GEMS IMAGES FOR WILDFIRE SMOKE DETECTION: A COMPARISON BETWEEN ECDF CORRECTION AND STYTR-2 MODEL**
YEMIN JEONG, YANGWON LEE
- 16:00 **BURNED AREA MAPPING FROM C-BAND SAR DATA USING INDICES AND U-SHAPED DEEP LEARNING MODELS**
S M SOHEL RANA, JAESE LEE, JUNGH0 IM
- 16:15 **ENHANCEMENT OF FOREST REGROWTH ASSESSMENT USING TIME-SERIES RECONSTRUCTION OF VEGETATION INDICES**
GA-RAM LEE, MINHWA KIM, YEJI LEE, SU-YOUNG KIM, EUN-HO NOH, SANG-EUN PARK
- 16:30 **DEFORMATION OF THE YELLOWSTONE CALDERA FROM INSAR AND GNSS OBSERVATIONS, 2016-2021**
HONG-XUAN CHEN, WU-LUNG CHANG

Thursday, 15-May 2025

R4 (206)

09:00-10:15

MW

Microwave

Chair: DUK-JIN KIM (Seoul National University)

- 09:00 **ENSEMBLE DEEP LEARNING FOR WATER BODY DETECTION USING X-BAND SAR AND AUXILIARY GEOSPATIAL FEATURES**
SOYEON CHOI, YANGWON LEE
- 09:15 **SURFACE WATER VARIATIONS OF THE MIDDLE REACH OF THE CONGO RIVER FROM SAR AND ALTIMETRY DATA**
DONGHWAN KIM
- 09:30 **ATMOSPHERIC CORRECTION FOR PERSISTENT SCATTERER INTERFEROMETRY USING GPRI-II GROUND-BASED RADAR**
YEOJIN KIM, JEONG-HEON JU, SEONG-CHEON PARK, SANG-HOON HONG
- 09:45 **AMSR2SMAP: CONVERTING AMSR2 SOIL MOISTURE DATA TO L-BAND FORMAT USING IMAGE-TO-IMAGE TRANSLATION**
GYEONGBIN LEE, JAESE LEE, JUNGHO IM
- 10:00 **EXAMINING THE ACCURACY OF PSINSAR MEASUREMENTS EFFECTED BY DIFFERENT PS QUALITY INDICES AND WEATHER CONDITIONS**
YAN AKHBAR PAMUNGKAS, SHOU HAO CHIANG

10:30-11:45

SAR

SAR

Chair: SANG-HOON HONG (Pusan National University)

- 10:30 **EXPLORING THE APPLICATION OF SAR2OPT FOR SLOPE COLLAPSE DETECTION: A CASE STUDY OF THE 2024 HUALIEN EARTHQUAKE**
WEN-HONG CHEN, SHOU-HAO CHIANG
- 10:45 **INVERSE SYNTHETIC APERTURE RADAR (ISAR) IMAGING OF MOVING VEHICLES USING GPRI-2 GROUND-BASED RADAR**
SEONG-WOO JUNG, SANG-HOON HONG
- 11:00 **ESTIMATING ATMOSPHERIC PHASE SCREEN AT DATA ACQUISITION USING DIFFERENTIAL INTERFEROGRAM SUBTRACTION DATASETS AND U-NET**
GWANG-WOO OH, SEUNG-KUK LEE
- 11:15 **MAPPING LANDSLIDE-AFFECTED AREAS FOR THE 2024 NOTO PENINSULA EARTHQUAKE USING LATENT DIFFUSION MODELS (LDM)**
CHIH-CHUN CHUANG, SHOU-HAO CHIANG
- 11:30 **MACHINE LEARNING APPROACH FOR FLOOD SUSCEPTIBILITY MODEL BASED ON THE SENTINEL-1 SAR FLOOD INVENTORY CONSTRUCTION**
APRIZAL VERDYANSYAH, TANG-HUANG LIN

R4 (206)

13:00-14:15

OCN

Ocean

Chair: MYUNG-SOOK PARK (KIOST)

- 13:00 **INCREASING MARINE HEATWAVE TRENDS IN THE BELIZE BARRIER REEF BASED ON A 40-YEAR ANALYSIS (1985–2024)**
NAYDELINE TERESITA SMITH, PO-CHUN HSU
- 13:15 **SATELLITE-BASED MONITORING OF MARINE HEATWAVE OCCURRENCES ALONG THE WESTERN COAST OF ACEH**
FAQIH MUSYAFFA, PO-CHUN HSU
- 13:30 **IMPROVEMENT OF KOOS SEA SURFACE TEMPERATURE (SST) SERVICE: HOURLY SST PRODUCT**
DAE-WOON SHIN, CHAN-SU YANG, WON-JUN CHOI
- 13:45 **ANALYSIS OF WAVEFORM SHAPES IN COASTAL AREAS AROUND THE KOREAN PENINSULA USING SATELLITE ALTIMETERS**
DO-HYUN HWANG, HAHN CHUL JUNG, HAN AH PARK, SEUNG HWAN LEE, HYONGKI LEE
- 14:00 **RECONSTRUCTING GLOBAL 3D CHLOROPHYLL-A USING PHYSICS REANALYSIS AND PROFILE CLASSIFICATION WITH SATELLITE AND BGC-ARGO DATA**
HANEUL CHO, SIHUN JUNG, JUNGHO IM

15:30-16:45

ATM

Atmosphere

Chair: KYEONG-SANG LEE (KIOST)

- 15:30 **RETRIEVAL OF DAILY NET ECOSYSTEM EXCHANGE FOR RICE PADDIES IN SOUTH KOREA USING MACHINE LEARNING AND SATELLITE DATA**
NARI KIM, JAEIL CHO, YANGWON LEE
- 15:45 **EVALUATION OF REGIONAL IONOSPHERE MODEL FOR REAL-TIME PRECISE POINT POSITIONING: A CASE STUDY IN TAIWAN**
YU-CHEN LEE, MING YANG, FENG-YU CHU
- 16:00 **GLOBAL HIGH-RESOLUTION METHANE PLUME MONITORING: DEVELOPING AN AUTOMATED DEEP LEARNING ALGORITHM WITH HYPERSPECTRAL SENSORS**
SEYOUNG YANG, YEJIN KIM, MINKI CHOO, HYUNYOUNG CHOI
- 16:15 **MACHINE LEARNING BASED BIAS CORRECTION OF GLOBAL METHANE (XCH₄) FROM GOSAT, GOSAT-2 AND SENTINEL-5P**
JEBUN NAHER KEYA, YEJIN KIM, SEYOUNG YANG, JUNGHO IM
- 16:30 **ENSEMBLE LEARNING-BASED ATMOSPHERIC CORRECTION FOR INLAND WATER IN LANDSAT 8 IMAGERY**
DEWINTA HERIZA

09:00-10:15

ML3

Machine Learning 3

Chair: JEONG-WON PARK (KOPRI)

- 09:00 **INTEGRATING FEATURE-FUSED ATTENTION MECHANISM ON MULTITASK MODEL FOR EFFICIENT RICE LODGING IDENTIFICATION**
HSIN-HUNG TSENG, MING-DER YANG
- 09:15 **DEVELOPMENT OF AN INTEGRATED SAR-OPTICAL MACHINE LEARNING FRAMEWORK FOR ALL-WEATHER NDVI MONITORING UNDER CLIMATE CHANGE**
YOUJEONG YOUN, YANGWON LEE
- 09:30 **A STUDY ON DEEP LEARNING-BASED FEATURE MATCHING AND SUPER-RESOLUTION TECHNIQUES FOR SATELLITE IMAGE REGISTRATION**
YUNGYO IM, YANGWON LEE
- 09:45 **DEEP LEARNING-BASED BURNED AREA MAPPING: MULTI-SATELLITE FUSION WITH SUPER-RESOLUTION**
YOUNGMIN SEO, YANGWON LEE

10:30-11:45

ML4

Machine Learning 4

Chair: No-WOOK PARK (Inha University)

- 10:30 **QUANTIFYING THE PATCH AREA USING DEEP LEARNING AND PHOTOGRAMMETRY BASED ON CONTINUOUS IMAGES**
RUEI-LIAN WANG, CHI-KUEI WANG, HONG-PING LO, YI-JHEN YANG
- 10:45 **SWEET POTATO IMAGE GENERATION AND AUGMENTATION BASED ON STABLE DIFFUSION AND CONTROLNET**
YU-CHING WANG, MING-DER YANG
- 11:00 **APPLYING YOLO TO ASSIST GCP MARKING FOR 3D MODELING OF SALT WAREHOUSE**
LU-CHIH CHEN, JIANN-YEOU RAU, CHING-JUNG HUNG
- 11:15 **A LONG-TERM GLOBAL HIGH-RESOLUTION XCO₂ PRODUCT USING MULTI-SOURCE DATA AND MACHINE LEARNING**
SOOMIN HWANG, HYUNYOUNG CHOI, YOOJIN KANG, JUNGH0 IM
- 11:30 **SEMANTIC SEGMENTATION OF URBANIZED AREAS USING MULTI-SENSOR SATELLITE DATA**
SUNG HYUN GONG, HYUNG SUP JUNG, GEUN HAN KIM, GEUN HYOUK HAN JIN SUNG HONG

R5 (207)

13:00-14:15

ML5

Machine Learning 5

Chair: JUNGH0 IM (UNIST)

- 13:00 **EVALUATION OF PREDICTABILITY OF SATELLITE NDVI AND GPP PRODUCTS USING DEEP LEARNING-BASED TIME SERIES IMAGE PREDICTION MODELS**
GEUNAH KIM, YANGWON LEE
- 13:15 **SEA FOG DETECTION FROM MULTI-SATELLITE IMAGES USING DEEP LEARNING TECHNIQUES**
JONGGU KANG, YANGWON LEE
- 13:30 **DEVELOPMENT OF A MACHINE LEARNING-BASED ATMOSPHERIC CORRECTION ALGORITHM FOR SENTINEL-2 IMAGES**
SEOYEON KIM, YANGWON LEE
- 13:45 **DEEP LEARNING-BASED BUILDING AND ROAD DETECTION USING CAS500-1 IMAGERY**
RIWON KIM, YANGWON LEE
- 14:00 **COMPARISON BETWEEN PAN-ARCTIC AND REGIONAL SEA ICE CONCENTRATION PREDICTION WITH DEEP LEARNING APPROACH ALONG THE NORTHERN SEA ROUTE**
GARYUNG LEE, WOOHYEOK KIM, MINKI CHOO, JUNGH0 IM

15:30-16:45

ML6

Machine Learning 6

Chair: YOUKYUNG HAN (Seoul National University of Science and Technology)

- 15:30 **SENTINEL-2 AND RGB IMAGE FUSION WITH FULLY CONNECTED TENSOR NETWORK DECOMPOSITION FOR SUPER-RESOLUTION**
RAO CHENKAI, MASAYUKI MATSUOKA
- 15:45 **OPTICAL IMAGE RESTORATION USING SAR IMAGERY AND GENERATIVE DEEP LEARNING MODELS**
SOYEON PARK, No-WOOK PARK
- 16:00 **DEEP LEARNING-BASED LANDSLIDE TRANSITION DETECTION AND CLASSIFICATION WITH REMOTE SENSING DATA**
SHANG-NIEN TSAI, FUAN TSAI
- 16:15 **EXAMINING TRANSFERABILITY OF ADVERSARIAL ROBUSTNESS IN FINE-TUNED YOLOV5 OBJECT DETECTOR FOR SATELLITE IMAGERY**
MIHEYON JEONG, SEONHOON KIM, DAEWON CHUNG



Thursday, 15-May 2025

POSTER SESSION II

2F Robby
14:15-15:30

- SP-01 **SAM-BASED FOREST ROAD DETECTION WITH FINE-TUNING USING GOOGLE STREET VIEW**
(SC) HAYOUNG LEE, SEUNG-YUB KIM, AND KIWON LEE
- SP-02 **COMPLEX FAULT SLIP MECHANISM OF THE 2018 KAKTOVIK EARTHQUAKES IN ALASKA REVEALED BY SENTINEL-1 AND ALOS-2 DINSAR OBSERVATIONS AND INVERSION**
TAEWOOK KIM, HYANGSUN HAN
- SP-03 **USING GEOSPATIAL ARTIFICIAL INTELLIGENCE TO DEVELOP A SPATIOTEMPORAL AIR POLLUTION PREDICTION MODEL FOR ANALYZING THE IMPACT OF THERMAL POWER PLANTS ON SURROUNDING AREAS IN CENTRAL TAIWAN.**
SIN-YI LAI, CHIEH YING CHEN, YU TING ZENG, CHIH DA WU
- SP-04 **IDENTIFYING PRIMARY CAUSAL FACTORS OF LANDSLIDES USING SATELLITE RADAR COHERENCE IN LANDSLIDEDAMAGED ZONES**
YUNSU ROH, CHUL-HEE LIM
- SP-05 **SPECTRAL SIGNATURES OF FOREST DISTURBANCES WITH EMPHASIS ON CHEMICAL DEFORESTATION**
KYEONGJOO YEOM, CHUL HEE LIM
- TP-01 **LIST FOR STATISTICAL ANALYSIS OF KOMPSAT-3A SPATIAL QUALITY MEASUREMENT RESULTS**
DONGHAN LEE
- TP-02 **ASSESSMENTS OF INDOOR 3D MAPPING WITH LOW-COST POINT CLOUDS**
JHE-SYUAN LAI, YI-CING SUN
- TP-03 **COMPARATIVE STUDY OF FILTERS AND DEEP NEURAL NETWORKS FOR SAR IMAGE CLASSIFICATION**
ZHI XIAN CHEN, HSUAN REN
- TP-04 **SEDIMENTOLOGICAL CHARACTERISTICS AND ENVIRONMENTAL CHANGES IN THE TIDAL FLATS OF GOMSO BAY, KOREA: A TEXTURAL AND HYDRODYNAMIC ANALYSIS**
JUN-HO LEE, HOI-SOO JUNG, KEUNYONG KIM, YEONG JAE JANG, HAN JUN WOO
- TP-05 **INTEGRATION OF SATELLITE DATA INTO AREA YIELD INDEX INSURANCE FOR RICE CROP**
CHI HARU HONGO, TAISEI IIDA, GUNARDI SIGIT, EISAKU TAMURA
- TP-06 **DETECTION AND EVALUATION OF EARTHQUAKE-INDUCED BUILDING DAMAGES USING SPACE-BORNE SAR IMAGES WITH MACHINE LEARNING AND FEATURE ENGINEERING**
YUN-CHEN TU, JHE-SYUAN LAI, MASASHI MATSUOKA
- TP-07 **REAL-TIME POTHOLE DETECTION USING YOLOV11**
CHENG ZONG YANG

- TP-08 **SIGNBOARD OBJECT DETECTION WITH YOLOV8 FOR IMAGE BASED POSITIONING**
SEONU YI, WANSANG YOUN, SOOAHM RHEE
- TP-09 **PERFORMANCE VERIFICATION OF SAR CALIBRATION EQUIPMENT**
DOCHUL YANG, WOOSUNG PARK
- TP-10 **ACCURACY ASSESSMENT OF BACKWARD GEOCODING FOR ICEYE MICROSATELLITE IMAGES USING DIFFERENT GEOMETRICAL MODELS**
TEE-ANN TEO, TSUNG-HAN WEN, K.H. Hsu, M.C. Wu
- TP-11 **APPLICATION OF PLANETSCOPE DATA TO MONITOR CULTIVATED CROPS**
YUTA TSUCHIYA, HIROSHI TANI, ATSUSHI KIMURA, REI SONOBE
- TP-12 **EXPLORING THE KOMPSAT-5 SIGNAL DELAY PHENOMENON DUE TO THE TROPOSPHERE**
NAHYUN LEE, DOCHUL YANG, DONGHYUN KIM, HO-RYUNG JEONG
- TP-13 **DEEP LEARNING APPROACH FOR AI-BASED DSM TO DEM CONVERSION**
NAHYUN AHN, HANEUM LEE, SOOAHM RHEE
- TP-14 **ASSESSING COSEISMIC AND POSTSEISMIC DEFORMATION OF THE APRIL 3RD, 2024 HUALIEN EARTHQUAKE SEQUENCE WITH DINSAR AND PSINSAR TECHNOLOGY**
 TSAI YUN HSIEH, HSUAN REN., CHUNG PAI CHANG
- TP-15 **DETECTION OF ANOMALIES IN JAPANESE RICE FIELDS USING SENTINEL-2 BASED ON A GENERATIVE ADVERSARIAL NETWORK**
SHOHEI OGAWA, MASAYUKI MATSUOKA
- TP-16 **GENERATION OF GRIDDED DATA FROM GK2A SEA SURFACE TEMPERATURE PRODUCTS AND AI-BASED TIME SERIES IMAGERY PREDICTION EXPERIMENTS**
JIHYE AHN, YANGWON LEE
- TP-17 **CAN SUPER-RESOLUTION AND AI IMPROVE THE CLASSIFICATION OF FRAGMENTED MANGROVES?: A CASE STUDY OF THE SOLOMON ISLANDS**
HYEON KWON AHN, CHUL-HEE LIM
- TP-18 **CALCULATION OF FIRE DAMAGE AREA USING DNBR, BASED ON GAUSSIAN DISTRIBUTION CHARACTERISTICS**
EUNSEOK PARK, SEULKI LEE, ARIEF RIZQIYANTO ACHMAD, SUNGJAE PARK, CHANG-WOOK LEE
- TP-19 **PRECISE WATER BODY DETECTION IN HYPERSPECTRAL IMAGERY VIA HIERARCHICAL CLUSTERING WITH DEEP FEATURE EXTRACTION**
SEOJIN KONG, HANEUM LEE, PYUNGCHAE LIM, SOOAHM RHEE
- TP-20 **CREATION OF TRUE ORTHO IMAGE USING INPAINTING FOR UTILIZATION OF A DIGITAL TWIN SATELLITE BASE MAP**
SEUNGHEE KIM, SOOAHM RHEE

- TP-21 **EVALUATION OF CHLOROPHYLL CONCENTRATION IN SAMANGEUM WATERSHED USING GEOSTATIONARY OCEAN COLOR IMAGING SATELLITE AND BACK PROPAGATION NEURAL NETWORK(BPNN) MODEL**
YEJIN LEE, SUHWAN KIM, DOEHEE HAN, DOWON KIM, JONG-MIN YEOM
- TP-22 **CLOUD DETECTION IMPROVEMENT AND EVALUATION USING KOMPSAT TOP OF ATMOSPHERE REFLECTANCE AND DEEPLABV3+ MODEL**
SUHWAN KIM, DOHEE HAN, YEJIN LEE, SIEUN SONG, HAN OH, JONGMIN YEOM
- TP-23 **GROUND POINT EXTRACTION FROM AIRBORNE LIDAR DATA USING POINT TRANSFORMER**
YEN-CHIH CHEN, CHAO-HUNG LIN
- TP-24 **ANALYSIS OF SEA SURFACE TEMPERATURE, OCEAN CURRENTS, AND CHLOROPHYLL-A CONCENTRATION IN UNDERSTANDING SEASONAL VARIATIONS IN THE MALACCA STRAIT**
AKHMAD HARIS KARSENA, EDI RAHMANTO, RHEINHART CHRISTIAN HAMONANGAN HUTAURUK
- TP-25 **INTEGRATION OF REMOTE SENSING AND MACHINE LEARNING FOR FOREST CARBON STOCK ASSESSMENT IN DARKHAN-UUL PROVINCE, MONGOLIA**
BATTUYA SANJAAKHAND, BAYANMUNKH NOROVSUREN, ULZIISAIKHAN GANBOLD, OCHIRKHUYAG LKHAMJAV, TSOLMONBAYAR SHAGDAR
- TP-26 **APPLICATION OF REMOTE SENSING METHODS IN GEOLOGICAL LITHOLOGY MAPPING**
NARANGARAV ULZIJ, MUNKHBOLD NOROVSUREN, JAMINDORJ KHATANBAATAR, BAYANMUNKH NOROVSUREN
- TP-27 **A SIMPLE YET EFFECTIVE APPROACH TO HYPERPARAMETER AND LOSS FUNCTION SELECTION FOR BUILDING EXTRACTION MODEL**
NGOC AN BUJ, JANGWOO CHEON, INHYUK LEE, CHONG LEE, JUHEE LEE, IMPYEONG LEE
- TP-28 **VALIDATION OF FAPAR PREDICTION METHODS USING MULTIPLE APPROACHES**
SUBIN CHOI, HYUN-DONG MOON, BO-KYEONG KIM, HAYEON WON KYEONG-MIN KIM, JAEIL CHO
- TP-29 **VOLUME-BASED BIOMASS ESTIMATION OF COASTAL SHRUBS: A CASE STUDY IN DENSITY ASSESSMENT**
BORA LEE, EUNHA PARK, SANGEUN KWAK, KYEONGYOUNG WOO
- TP-30 **DEVELOPMENT OF SOIL MOISTURE AND DROUGHT INDEX ESTIMATION TECHNOLOGY UTILIZING SATELLITES**
JINHYEONG LEE, SUBIN HA, SEUNGKUK LEE
- TP-31 **VALIDATION OF SEA SURFACE TEMPERATURE FROM GEOSTATIONARY SATELLITE AND ANALYSIS OF SATELLITE ZENITH ANGLE EFFECTS**
HYE-JIN WOO, KYUNG-AE PARK
- TP-32 **SEA WATER TYPE CLASSIFICATION AROUND THE IEODO OCEAN RESEARCH STATION BASED ON SATELLITE OPTICAL SPECTRUM**
NA-YEON CHA, KYUNG-AE PARK

- TP-33 **SEA WATER TURBIDITY VARIABILITY AND ITS ASSOCIATIONS WITH TIDAL DYNAMICS AND ENVIRONMENTAL CONDITIONS IN THE KOREAN COASTAL ZONE OF THE YELLOW SEA**
SU-RAN KIM, TAE-SUNG KIM, KYUNG-AE PARK, JAE-JIN PARK, MOON-JIN LEE
- WP-34 **EXPLORING MULTIMODAL FUSION IN DIFFUSION-BASED CLOUD REMOVAL**
YOUNGWOOK KIM
- WP-39 **PRECISE IMAGE REGISTRATION BETWEEN MULTI-SCALE ELECTRO-OPTICAL AND INFRARED SATELLITE IMAGES**
TAEHEON KIM, YOUKYUNG HAN, KWANGJAE LEE, YESEUL KIM, DOOCHUN SEO



Friday, 16-May 2025

R1 (Premier Ballroom A)

International Symposium on Remote Sensing (ISRS) 2025

[NIES, Japan SS] *Special Session on* Satellite Remote Sensing of Greenhouse Gases and Expectations for Future Asian Satellites

Date and Time: 9:00 AM, Friday, May 16, 2025 (80 minutes)

Venue: Premier Ballroom A, Songdo Convensia, Incheon, Korea

Session Chair: **Tsuneo Matsunaga** (National Institute for Environmental Studies, Japan)

Session Objective

The concentrations of greenhouse gases (GHGs) in the Earth's atmosphere, such as carbon dioxide and methane, have been increasing since the beginning of the Industrial Revolution more than 200 years ago and the impacts of climate change have been clearly seen in the past few years. It is now imperative to monitor the status of atmospheric GHGs in both global and local scales and to provide government authorities and private sectors with GHGs data which support their activities to mitigate future climate change. This session will provide the overview of global satellite remote sensing of GHGs in the past two decades and planned activities using future Asian and other GHGs satellites to quantify and reduce local emissions of GHGs by Japanese and Korean groups.

Presentations

Tsuneo Matsunaga and Hiroshi Tanimoto (National Institute for Environmental Studies, Japan):

Overview of Satellite Remote Sensing of Greenhouse Gases and Japanese GOSAT Serie

Tomonori Deguchi (ArkEdge Space Inc., Japan), Takahiro Kawashima, Akira Iwasaki (The University of Tokyo, Japan),

Takeo Wanibuchi, and Takayoshi Fukuyo (ArkEdge Space Inc., Japan):

An Overview of the Small Hyperspectral Satellites Project: Application for Greenhouse Gas Monitoring

Yohei Toyohara, Shota Sugiyama, Yusuke Ito, Toshiki Fujino, Daisuke Sango, Kohei Kurihara, Yasutaka Fujii

(Mitsubishi Electric Corporation, Japan), Naoki Aizawa, Kazutaka Kumeno (Satellite Data Services Co., Ltd.),

Kazuya Tanigawa, Kazuhiro Noda, and Takumi Hashizume (MUFG Bank, Ltd.):

Enhancing GHG Transparency and MRV through Satellite Data Solutions

Jaemin Hong, Sujung Jeong, Yu-Ri Lee, Dong Yeong Chang (Seoul National University, South Korea),

Geuk-Nam Kim, Jae-Pil Park, Jinyoung Shin, and Namgyu Kim (Nara Space Technology Inc., South Korea):

Development and Preliminary Validation of XCH₄ Retrieval Algorithm for the Narsha Methane Monitoring Microsatellites

Yu-Ri Lee, Sujung Jeong, Dong Yeong Chang, and Jaewon Joo (Seoul National University, South Korea):

Identification of Urban Methane Point Sources through EMIT Satellite Observations

R2 (204)

09:00-10:15

KARI SS1 International Cooperation for Satellite Data Application 1

Chair: BORAM KIM (KARI), YEJI KIM (KARI)

- 09:00 **ADVANCING SATELLITE IMAGE ANALYSIS FOR EARTH OBSERVATION APPLICATIONS THROUGH INTERNATIONAL COOPERATION**
YEJI KIM, HYUN OK KIM, BORAM KIM
- 09:15 **ADDRESSING THE NEEDS OF DEVELOPING COUNTRIES THROUGH SATELLITE DATA: KOREA'S ROLE AND INITIATIVES**
KWANWOO JUNG, JYUN PARK
- 09:30 **INTERNATIONAL COLLABORATION BASED ON THE OCEAN SATELLITE SENSORS**
JONGKUK CHOI
- 09:45 **THE GEO BLUE PLANET ASIAN SECRETARIAT: ACTIVITIES AND ACHIEVEMENTS**
SUNG-JIN CHO
- 10:00 **THE EFFORTS OF INTERNATIONAL ORGANIZATIONS TO UTILIZE SPACE TECHNOLOGY IN ADDRESSING CLIMATE CHANGE RISK**
EUNJEONG KIM

10:30-11:45

KARI SS2 International Cooperation for Satellite Data Application 2

Chair: BORAM KIM (KARI), YEJI KIM (KARI)

- 10:30 **SATELLITE EARLY WARNING COPING WITH MULTIPLE NATURAL HAZARDS**
YONG-SANG CHOI, HYOJI KANG, HWAYON CHOI
- 10:45 **LEVERAGING SATELLITE INFORMATION APPLICATION FOR INTERNATIONAL COOPERATION TECHNOLOGY AND SUSTAINABLE INNOVATION: RISE**
SUNJEONG HAM, DARONGSAE KWON, JAE EUN YANG
- 11:00 **TRANSFORMING OBSERVATIONS INTO ACTION: GLOBAL COLLABORATIONS IN ENVIRONMENTAL MONITORING THROUGH SATELLITE ANALYTICS**
MINSIK KIM, ALEXANDRA JERCAIANU, JUNGKYU LEE, KWANGWON LEE, KEUNHOO CHO, SEONGWHAN LEE, HYUNGJIK OH, JAE-PIL PARK

Friday, 16-May 2025

R3 (205)

09:00-10:15

CAL1

Calibration and Registration 1

Chair: TAEJUNG KIM (Inha University)

- 09:00 **EXPERIMENTAL REFLECTANCE CALIBRATION TARGET AND ATMOSPHERIC OBSERVATION NETWORK DEVELOPMENT FOR AN ABSOLUTE RADIOMETRIC CALIBRATION.**
KYOUNG-WOOK JIN, DONG-HWAN CHA, DOO-CHUN SEO
- 09:15 **A COMBINED APPROACH FOR FILTERING IMAGE FEATURES IN THE CREATION OF GROUND CONTROL FRAMEWORKS FOR AERIAL PHOTOGRAMMETRY AND REMOTE SENSING IMAGES**
HSUAN YANG, LIANG-CHIEN CHEN, JYUN-YI WU, HSI-HSIEN WU, KUAN-YI LEE, CHEN-YUNG LU
- 09:30 **IMPACT OF TEMPORAL AND SPECTRAL COLLOCATION OF GEMS AND AMI IMAGES FOR GEOMETRIC ACCURACY ASSESSMENT**
SEUNGHYEOK CHOI, TAEJUNG KIM
- 09:45 **CONCRETE LINING IMAGE DEBLURRING STRATEGIES**
HOU-REN CHEN, JEN-JER JAW
- 10:00 **ACCURACY ANALYSIS OF SELF-ORTHO RECTIFICATION OF SATELLITE IMAGES USING BUNDLE ADJUSTMENT**
SEUNGHWAN BAN, TAEJUNG KIM

10:30-11:45

CAL2

Calibration and Registration 2

Chair: JEN-JER JAW (National Taiwan University)

- 10:30 **PRECISION GEOMETRIC CORRECTION OF VERY HIGH-RESOLUTION SATELLITE IMAGES USING GCP CHIP MATCHING**
HYEONA KIM, HYEON-GYEONG CHOI, TAEJUNG KIM
- 10:45 **PRECISE WATER LEVEL MEASUREMENT IN TRANSPARENT CONTAINERS USING IMAGING TECHNIQUES**
WEI-CHI HO, JEN-JER JAW
- 11:00 **SIMULATED IMAGE GENERATION USING A CAS500-4 PHYSICAL SENSOR MODEL**
HONGJIN KIM, TAEJUNG KIM
- 11:15 **OPTIMIZATION OF TEXTURE PRESERVATION AND BOUNDARY PROCESSING FOR SHADOW REMOVAL**
BO-AN JI, JEN-JER JAW
- 11:30 **GRAPH NEURAL NETWORK-DRIVEN FEATURE MATCHING FOR ROBUST CROSS-SENSOR POINT CLOUD REGISTRATION**
HAO YU, TEE-ANN TEO

R4 (206)

09:00-10:15

CLI Climate Change

Chair: YONGSIK JEONG (KOPRI)

- 09:00 **DEVELOPMENT OF AN OPTIMAL RICE YIELD PREDICTION MODEL CONSIDERING CLIMATE CHANGE USING SATELLITE IMAGERY AND ARTIFICIAL INTELLIGENCE**
JAEUNG SIM, YANGWON LEE
- 09:15 **MACHINE LEARNING-BASED MAPPING OF RICE PADDY METHANE EMISSIONS USING METEOROLOGICAL AND SATELLITE DATA**
JIAH JANG, YANGWON LEE
- 09:30 **MACHINE LEARNING-BASED GENERATION OF OCO-2-LIKE ATMOSPHERIC CO₂ DATA FROM THE GEO-KOMPSAT-2A AND HIMAWARI-8/9 GEOSTATIONARY SATELLITES**
YEWOON LEE, SUNGWOOK HONG
- 09:45 **SATELLITE-DERIVED NET PRIMARY PRODUCTIVITY FOR CARBON STOCK ESTIMATION: INTEGRATING SENTINEL-2 IMAGERY WITH THE CASA MODEL**
LI-YI LU, TEE-ANN TEO
- 10:00 **APPLYING GENETIC ALGORITHMS AND PRINCIPAL COMPONENT ANALYSIS TO OPTIMIZE HEAT VULNERABILITY IN HO CHI MINH CITY**
CUONG CHI PHAM

10:30-11:45

MAP Mapping

Chair: SOOAHM RHEE (3Dlabs Co. Ltd)

- 10:30 **RAPID MOSAICKING OF UAV IMAGES USING LIGHTGLUE AND STRIP-BASED BUNDLE ADJUSTMENT**
SUNGHYEON KIM, TAEJUNG KIM
- 10:45 **AUTOMATED LANE LINE RECONSTRUCTION USING MULTIVIEW VEHICLE-MOUNTED IMAGERY AND DEEP LEARNING**
PEI-CHENG CHEN, TEE-ANN TEO, KUAN-YI LEE, CHEN-YUNG LU
- 11:00 **A DEEP LEARNING METHOD FOR BUILDING FOOTPRINT EXTRACTION AND LOD-2 3D BUILDING MODEL RECONSTRUCTION**
IRADAF MANDAYA, JIANN-YEOU RAU
- 11:15 **CARGO DIMENSION MEASUREMENT USING A DEPTH CAMERA BASED ON DBSCAN CLUSTERING OF PLANES**
YI-CHEN LEE
- 11:30 **ENHANCING REGION MATCHING ACCURACY THROUGH SEMANTIC SEGMENTATION AND MULTI-CRITERIA SIMILARITY FILTERING**
YUNG-CHING YANG, JEN-JER JAW

Friday, 16-May 2025

R5 (207)

09:00-10:15

RS1

Remote Sensing Applications 1

Chair: CHANG-UK HYUN (Dong-A University)

- 09:00 **SPATIAL ANALYSIS OF ORNAMENTAL FISH AQUACULTURE FARMING IN MALAYSIA**
NORSIDA MAN, ELEANOR DANIELLA LOKMAN, NOLILA MOHD NAWI, NIK NORASMA CHE'YA
- 09:15 **SOIL POLLUTION IN MONGOLIA: ASSESSING HEAVY METAL CONTAMINATION AND MITIGATION STRATEGIES**
BILGUUNMAA MYAGMARDULAM, SANJAA TUYA, DAMBADARJAA NARANBAT, ERDENECHIMEG KHALTAR, NYAMSUREN LKHAGVASUREN
- 09:30 **AI-BASED ACCURACY IMPROVEMENT OF PRECIPITATION MAPPING FOR THE KOREAN PENINSULA**
HYOJU PARK, YANGWON LEE
- 09:45 **INTEGRATING DATA MINING SHARPENING AND SPECTRAL INDICES FOR ENHANCEMENT OF MODIS LAND SURFACE TEMPERATURE WITH LANDSAT IMAGERY**
HYEONSEONG CHOI, YONGIL KIM
- 10:00 **ASSOCIATION BETWEEN PRENATAL EXPOSURE TO ULTRAFINE PARTICLES AND TERM LOW BIRTH WEIGHT: A HOSPITAL-BASED BIRTH COHORT STUDY IN CENTRAL TAIWAN**
MING WANG, YU-TING LIN, LI-HAO YOUNG, TZU-CHIEH CHOU

10:30-11:45

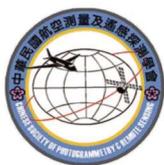
RS2

Remote Sensing Applications 2

Chair: JHE-SYUAN LAI (Feng Chia University)

- 10:30 **MULTI TEMPORAL SPATIAL ANALYTICS FOR MONITORING MINING SURFACE DYNAMICS IN MINING AREAS**
KONI DWI PRASETYA, FUAN TSAI
- 10:45 **DETECTION OF AREAS AT RISK OF SNOWMELT FLOODING IN ULAANBAATAR CITY USING REMOTE SENSING TECHNOLOGY**
B.BATSUREN, B.JAVZANDULAM, N.ENKHJARGAL, L.URANBILEG, B.BATBILEG, N.DAVAASAMBUU
- 11:00 **SPECTRAL HARMONIZATION OF HIGH-RESOLUTION PLANETSCOPE TO LOW-RESOLUTION JPSS-VIIRS IMAGERY FOR GRASSLAND MONITORING**
JARGALSAIKHAN MARGAD-ERDENE, MASAHIKO NAGAI, DORJ ICHIKAWA
- 11:15 **PREDICTING THE DISTRIBUTION OF HUMAN-BLACK BEAR CONFLICTS IN TOYAMA AND AKITA PREFECTURES, JAPAN**
DIDIER KAI DELGORGE, WATARU TAKEUCHI
- 11:30 **APPLICATION OF SPECTRAL FOREST INDEX (SFI) FOR SUSTAINABLE FOREST MANAGEMENT IN DARKHAN-UUL PROVINCE, MONGOLIA**
BATTUYA SANJAAKHAND, SARANTUYA ODKHUU, GANKHUYAG PUREV, OCHIRKHUYAG LKHAMJAV

Student Paper Award Sponsors



CSPRS
Chinese Society of Photogrammetry
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Exhibitors

1-2. Stellarvision Inc.
<https://www.stellarvision.net/>



3. GeoFocus, Inc.
<https://www.geofocus.kr>



4-6. Underwater Survey Technology 21, Inc.
www.ust21.co.kr



7. The University of Tokyo
<https://www.u-tokyo.ac.jp>



8. Chinese Society Photogrammetry and Remote Sensing (CSPRS)
<https://csprs.org.tw>



9. 3DLabs Inc.
<https://www.3dlabs.co.kr>



10. Hiroshima University
<https://www.hiroshima-u.ac.jp/en>



11. Samwoo Scientific Co.
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12. INDYWARE
<https://www.indyware.space>



13. Gaia3D, Inc.
<https://www.gaia3d.com>



14. National Institute of Environmental Research (NIER)
<https://nier.go.kr>



15-16. YOUNG IN MOBILITY Co., Ltd
<https://www.younginmobility.com>





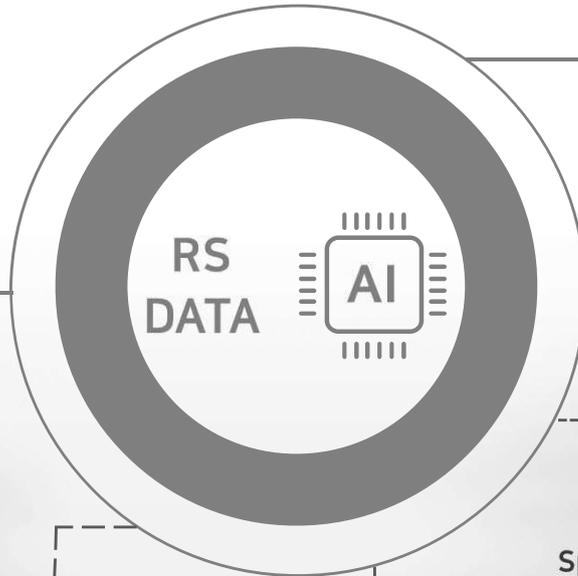
Remote Sensing Technology Development for Mineral Resources and Geohazard

Research on:

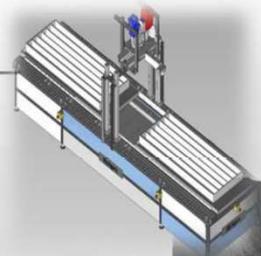
- Mineral and Lithology
- Hyperspectral Hardware Platform
- Landslide, Earthquake and Environmental Pollution

Multi-/Hyper-spectral and SAR Satellite Data

KIGAM Drone Multi-/Hyper-spectral System



KIGAM Drill-Core Hyperspectral Scanner



Spectroscopy



KIGAM Underground Hyperspectral System





QUREOS

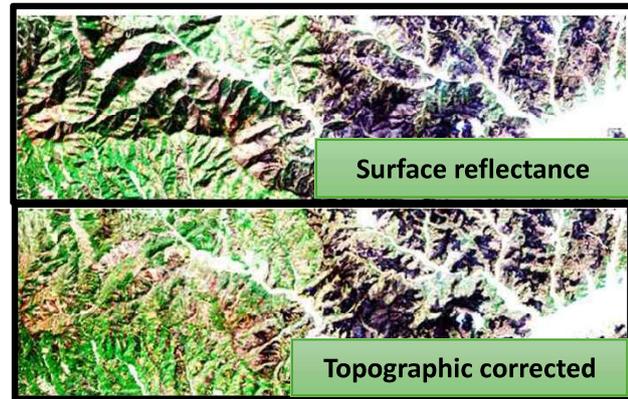
- Lab for Quantitative Remote Sensing -
Pusan National University



QUREOS is a research group focusing on quantitative remote sensing at Pusan National University. We conduct in-depth research on retrieving geophysical variables, utilizing various remote sensing platforms such as satellites, aircraft, and drones.

From UAV to Satellite: Supporting CAS500-4 Forest Monitoring

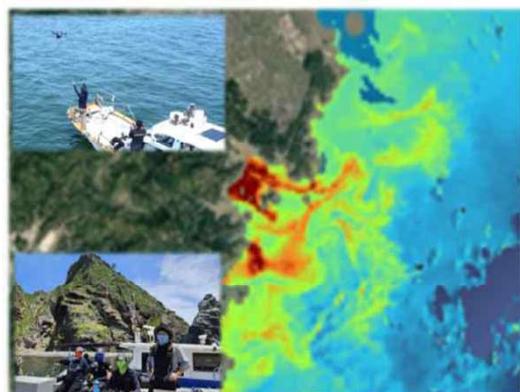
We are developing advanced forest monitoring technologies for South Korea's upcoming agroforestry satellite, CAS500-4, by integrating drone-based multispectral imagery with in-situ optical measurements. Our research includes terrain correction to minimize reflectance variability caused by topographic effects. Additionally, we are investigating the bidirectional reflectance distribution function (BRDF) of forested areas to better characterize their angular reflectance properties, thereby enhancing the interpretation of spectral signals observed from space.



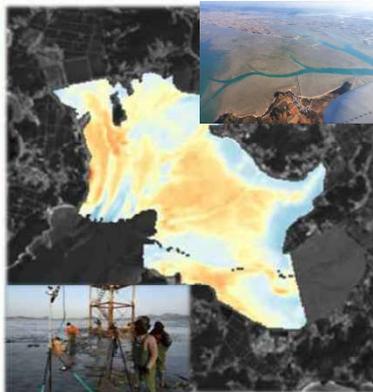
Topographic Correction Algorithm for CAS500-4

Major Research

- **Tidal Flat Remote Sensing:** Applying atmospheric correction to airborne hyperspectral imagery and developing retrieval algorithms for benthic microalgae estimation.
- **Thermal Remote Sensing:** Conducting vicarious calibration of MWIR sensors and developed temperature retrieval algorithms for KOMPSAT-3A and KOMPSAT-7 satellite missions.
- **Benthic Habitat Mapping:** Developing mapping techniques for coastal and intertidal zones using advanced hyperspectral remote sensing data.
- **Red Tide Detection:** Developing detection algorithms using the GK-2B Geostationary Ocean Color Imager for real-time monitoring of harmful algal blooms.



Development of Red Tide Detection algorithms



Estimation of MPB in Tidal Flats



Benthic Mapping for Coastal Regions of Indonesia



We are looking for motivated graduate students who are passionate about quantitative remote sensing and environmental analysis. If you're eager to work with real-world remote sensing data, develop models, and contribute to advancing science through rigorous, data-driven research, this is the lab for you. Interested students can visit our lab through the [QR code](#) below.

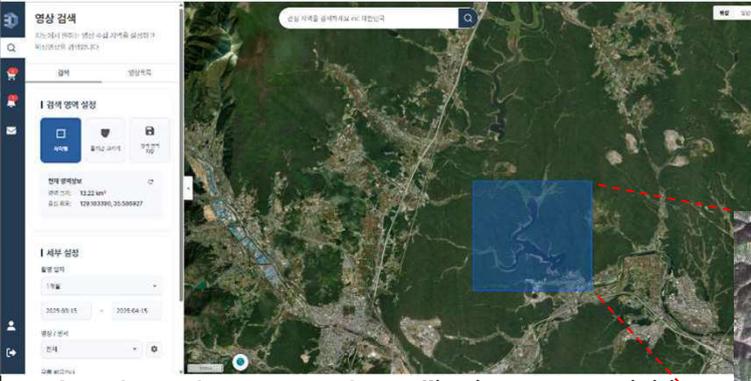




1 Big Data Platform for Satellite Information

From satellite data **collection** to **production** and **management**—

Generating precise orthoimages using GCP chips enables time-series analysis across different satellites.



- App-based automated satellite image acquisition and processing
- Grid-based satellite image generation tailored to user requirements
- Web-based satellite image search and download



CAS500-1



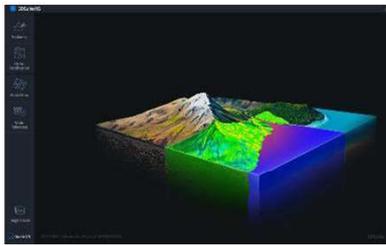
KOMPSAT-5



PlanetScope

Time-series outputs for area of interest

2 Hyperspectral AI Software



AI-based software for processing and analyzing Corning and Headwall hyperspectral data



Headwall mosaic image

Corning mosaic image

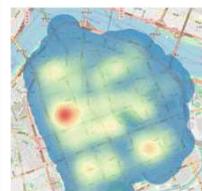
- Data standardization for processing Corning and Headwall data
- Mosaicking of Corning and Headwall imagery
- Standard hyperspectral image analysis and object classification

3 QGIS Chat-Bot, QueryGIS

QGIS Chat-Bot Plugin that makes your QGIS Life Easier



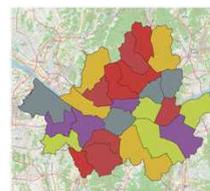
Use Case 1 (Vector Layer) Use Case 2 (Raster Layer)



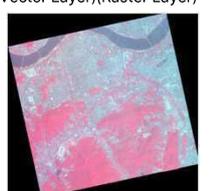
"Draw a Heat Map"

"Export features separately by district"

"Create a false color composite to clearly visualize vegetation."



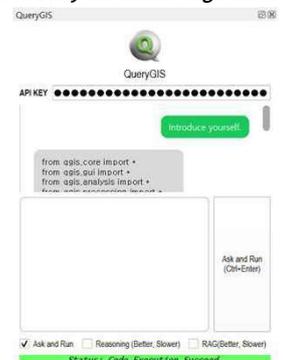
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- 도봉구
- 용산구
- 마포구
- 영등포구
- 광진구
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- 동대문구
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Easier access to geospatial data for **QGIS beginners**

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T. 032) 876-7608 / 02) 2677-7608
 F. 032) 815-7608
 E-mail. support@3dlabs.co.kr

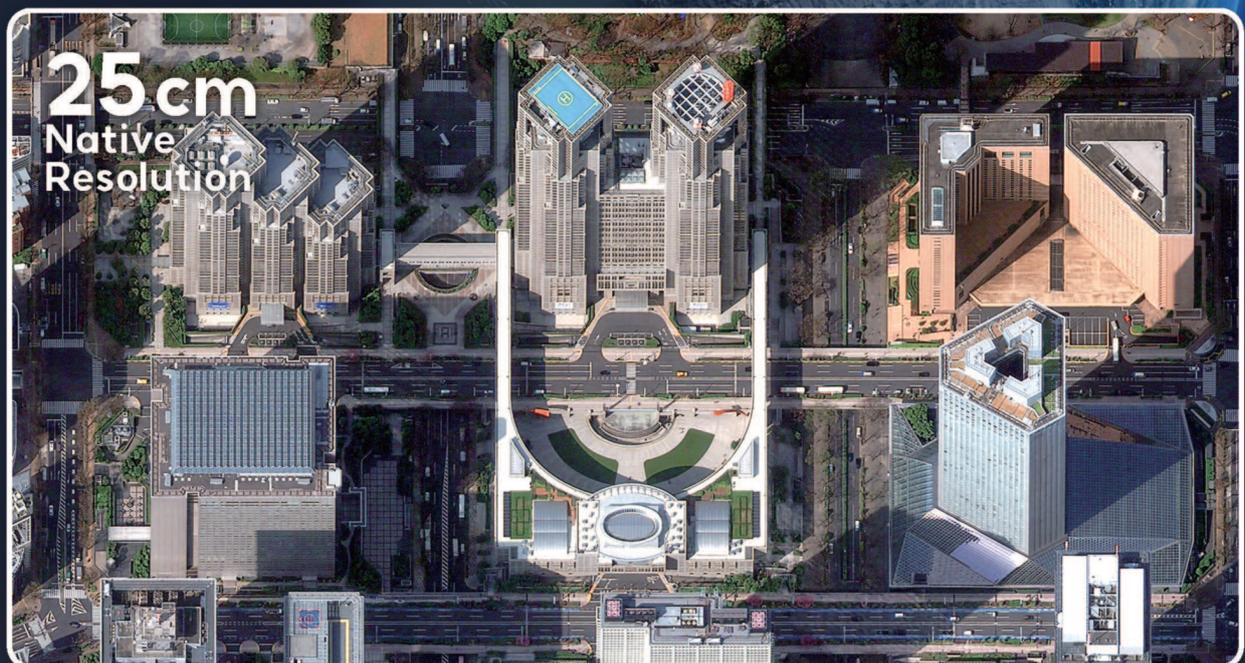




SATREC INITIATIVE

SpaceEye-T

Bands	PAN + 4 MS
GSD	PAN 0.25m, MS 1.2m
Swath Width	12km
D/L Speed	2.0 Gbps

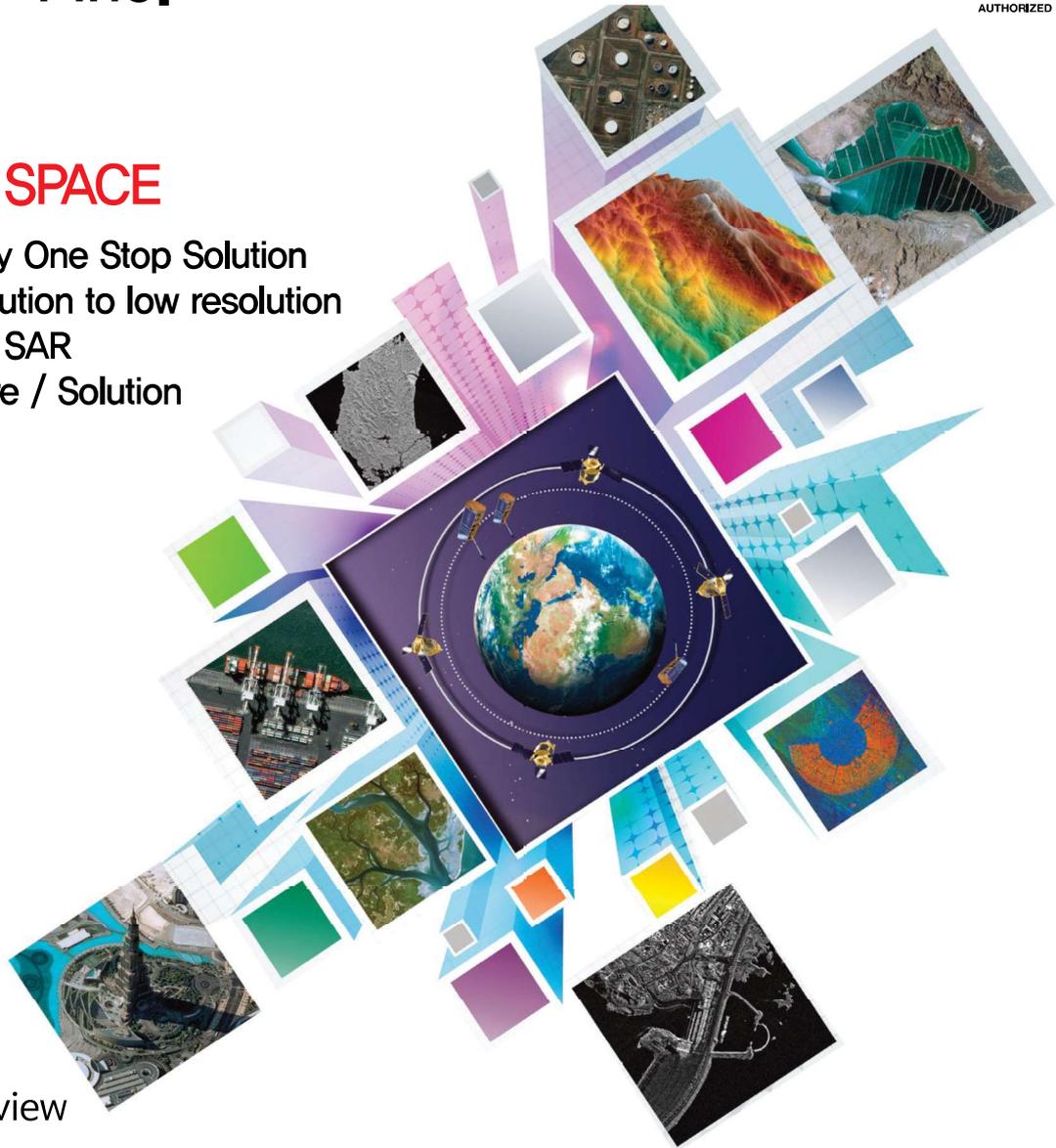


Contributes to Higher Accuracy and Broader Accessibility of Remote Sensing Data



AIRBUS DEFENCE & SPACE

- ▶ Satellite Imagery One Stop Solution
- ▶ From high resolution to low resolution
- ▶ From Optical to SAR
- ▶ Related Software / Solution



Company Overview

GeoSat-I(GSI) is providing various kind of satellite images, image processing, application and GIS & RS solution in Korean market as specialized in GIS & RS. As a reseller of AIRBUS DEFENCE & SPACE in Korea, GSI provides not only satellite imagery (Pleiades, TerraSAR-X & SPOT) but also Street Factory (Automatic 3D model creating S/W) to Korean market. Also GSI continues partnerships with state-of-the-art technology companies in all over the world to ensure providing the highest quality products.

Business Field

1. Imagery Business

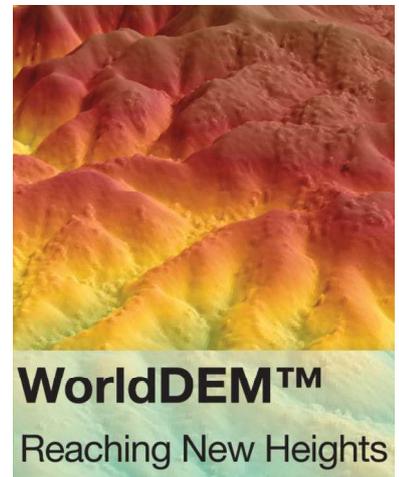
- One Stop Solution for satellite imagery
From high to low resolution, from optical to SAR imagery.
- Optical Imagery | Pleiades, SPOT, TripleSat, KazEOSat-1
 - SAR Imagery | TerraSAR-X, TanDEM-X, ALOS

2. S/W

- Pixel Factory
- Street Factory
- Sky Factory

3. GIS & RS Solution

- Image processing & Application development
- Mapping DB
- 3D GIS business (3D modeling & 3D solution)
- U-City business
- GIS & RS S/W



Korea Aerospace Research Institute National Satellite Operation & Application Center

- Integrated Operation of National Satellites
- Integrated Management of National Satellite Images
- Promotion of the Satellite Application Industry
- Satellite Image Analysis and Quality Control



Satellite Operation

- Stable operations of the national space-based assets (Satellites & Ground stations)
- Advanced multi-satellite integrated operation technology and operating system
- Protection of the national space-based assets through space situation recognition and space traffic control research



Satellite Application

- Research on various value-added products to increase accessibility and utilization of satellite imagery
- Research on converged multi-satellite applications and AI-based big data processing technology
- Strengthening domestic and international satellite utilization cooperation network



Quality Management

- Establishment of a quality control system and satellite image quality management
- Optimization of cal/val procedures and designing of image quality definitions for subsequent satellites
- Research on image quality improvement and management technology based on special imaging such as star images



SSA Research Office

- Space mission operation
- Space environment management
- Space situation recognition





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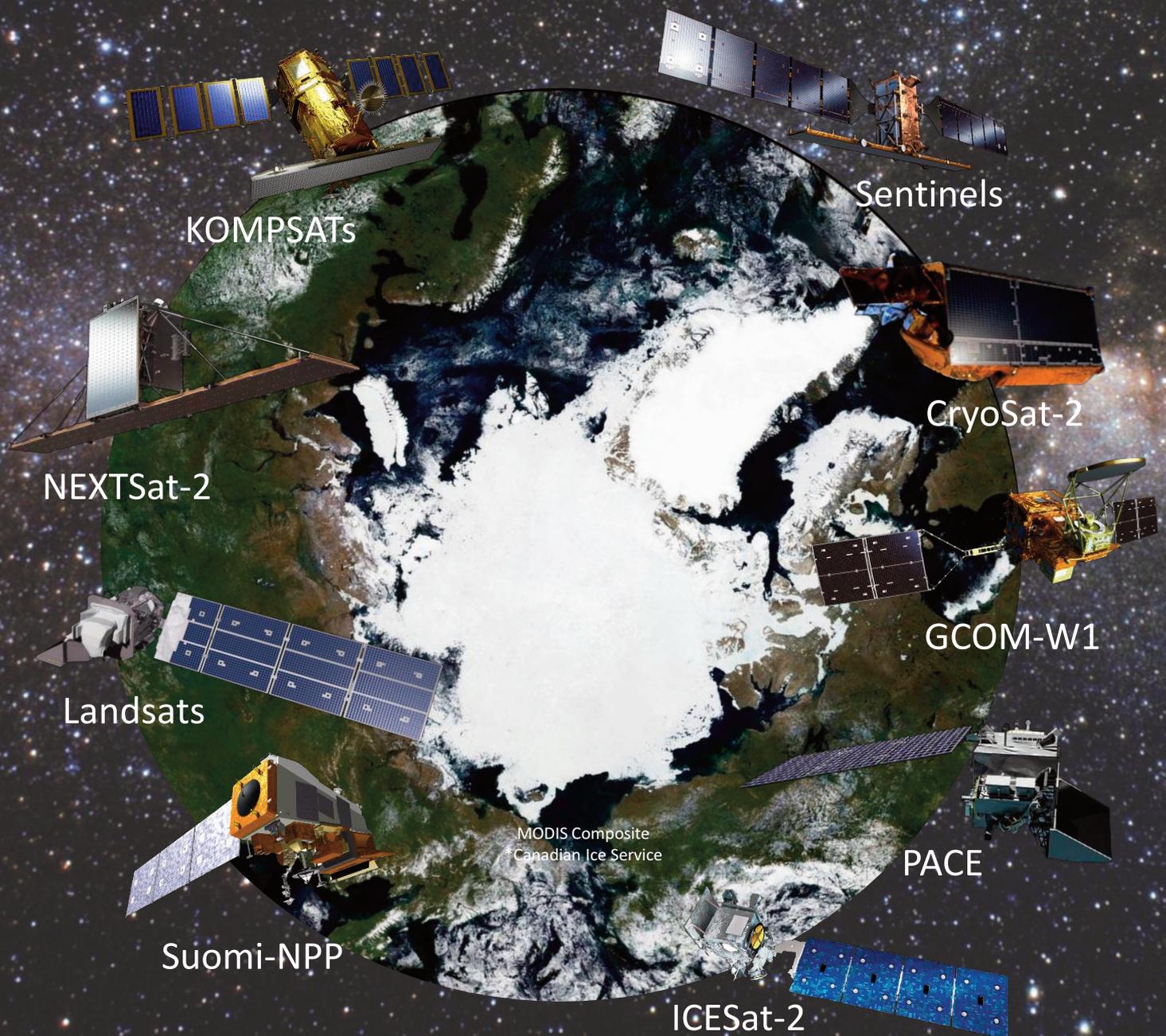
ENVI Inform performs automated cloud-based processing and analysis on remotely sensed data, delivering valuable insights and answers to customers.

POLAR FROM SPACE

우주에서 극지를 보다

The Center of Remote Sensing and GIS at Korea Polar Research Institute (KOPRI) is dedicated to advancing an integrated remote sensing network for polar regions. We continuously monitor the environments surrounding our polar research stations, as well as the broader cryosphere in both the Arctic and Antarctic.

As a permanent observer to the Arctic Council, we are committed to fulfilling our international responsibilities by providing accurate and reliable cryosphere remote sensing data.



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UST21 continuously strives for excellence and distinctive value creation in remote sensing, marine surveys, marine forecasting, monitoring, and marine SI.



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Responsibility



Committed responsibly from present to future challenges

Innovation



Opening new paths through cutting-edge technology and a spirit of challenge

Respect



Embracing diversity and accepting differences without prejudice

History

1999	2000	2004	2006	2008	2010	2016	2019	2020	2021	2024
Founded	Certified as MOF Startup	Certified as Engineering Company	Registered for Marine Survey	Registered for KHOA Hydrographic Survey	Registered for Marine Mapping	Registered for Construction Engineering	MOU with Fugro	Registered for Underwater Construction	Registered for Navigation Aids Management	Established Fugro-UST21

Service Items

Remote Sensing	Hydrographic Survey	Underwater Acoustics
Marine Data Analysis	Marine Observation & Survey	Geophysical Exploration
Unmanned Systems	Numerical Modeling	Hydrographic Survey

Address

H/Q	129, Gaetbeol-ro, Yeonsu-gu, Incheon
Office	2 nd floor, 7-5, Jungang-daero 214beon-gil, Dong-gu, Busan



Marine Convergence Department

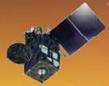
Specialized in preprocessing, analysis, and application of multi-source satellite imagery (SAR, optical, ocean color), offering customized services such as **object tracking, monitoring, change detection, and recognition based on big data and AI**

Geostationary Ocean/Meteorological Satellite (Ocean Color Sensor)

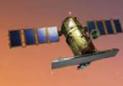
Polar-Orbit Earth Observation Satellite (Optical/Radar/Hyperspectral Sensor)

CubeSat Constellation for Earth Observation (Optical/Radar Sensor)

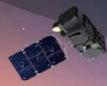
Low-Altitude Remote Sensing Platform (Optical/Hyperspectral)



Himawari-8



Komsat-3/5



Sentinel-1/2/3



SkySat



Geo-Komsat 2A



Geo-Komsat 2B



Rapideye



Landsat-8/9



Planetscope



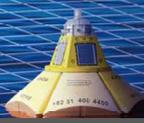
ICEYE



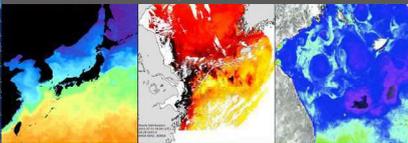
CAS500-1/2



Worldview



Open Sea

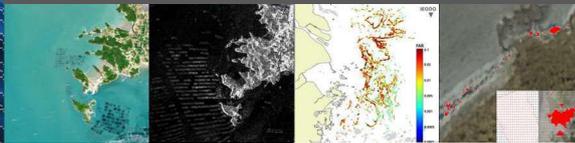


Sea Surface Temperature

Sea Surface Salinity

Chlorophyll-a

Coastal Waters

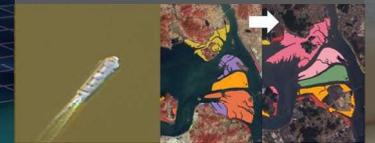


Submerged Potential Aquaculture Sites

Sargassum

Marine Debris

Ports and Coastal Land Areas



Vessel Detection

Tidal Flat Distribution

High-quality, customized marine information with remote sensing technology

ISRS 2026

International Symposium on Remote Sensing 2026

Held in conjunction with the 80th RSSJ spring meeting



13 – 15 May 2026 Kunibiki Messe, Matsue, Japan

Important date (tentative)

Abstract submission : February 14, 2026

Full-paper submission: March 31, 2026

Registration : March 31, 2026



Organized by

Remote Sensing Society of Japan (RSSJ)

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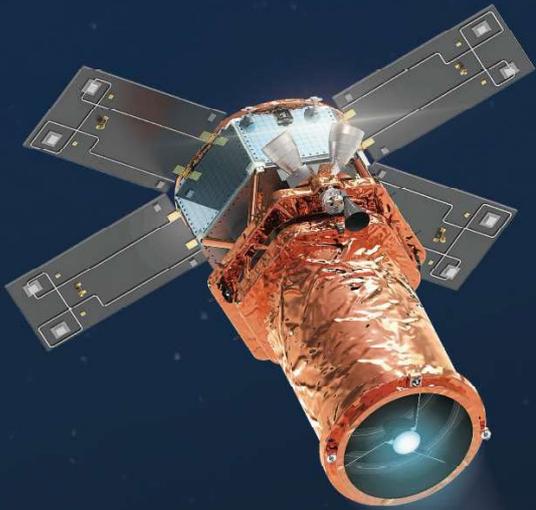
Chinese (Taipei) Society of Photogrammetry and Remote Sensing (CSPRS)

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