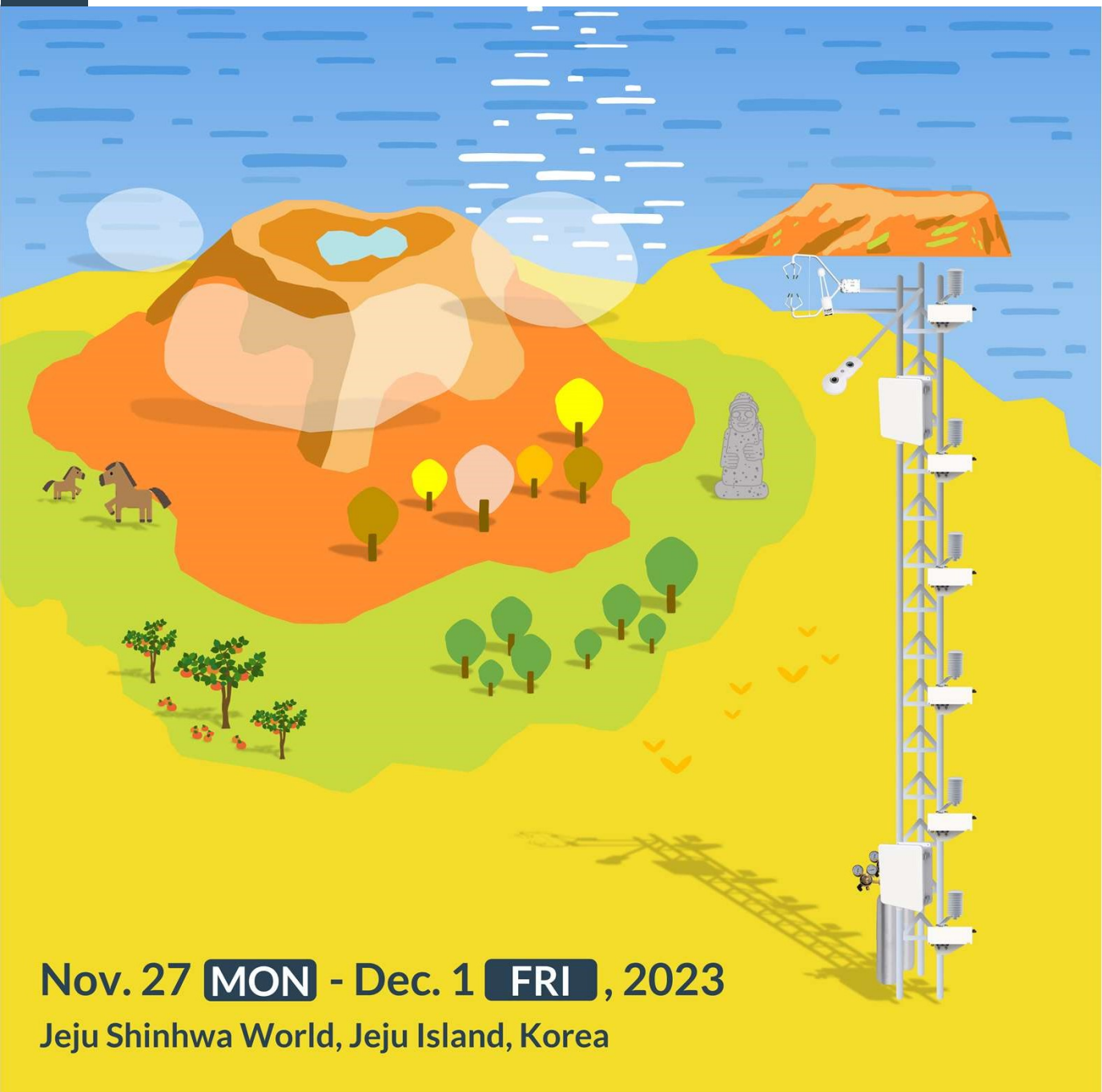


AsiaFlux 2023

The Role of AsiaFlux in the Era of Carbon Neutral and Beyond



Nov. 27 **MON** - Dec. 1 **FRI**, 2023

Jeju Shinhwa World, Jeju Island, Korea

Jointly hosted by



Organized by



In collaboration with



Supported by



AsiaFlux 2023

The Role of AsiaFlux in the Era of Carbon Neutral and Beyond

Nov. 27th – Dec. 1st, 2023

Jeju Shinhwa World, Jeju Island, Korea

JOINTLY HOSTED BY



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SUPPORTED BY



산림청

Korea Forest Service



National Institute of
Forest Science

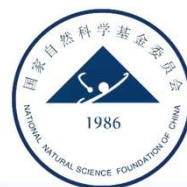


JSPS



National Research
Foundation of Korea

Kofpi 한국임업진흥원
Korea Forestry Promotion Institute



WITH THANKS TO OUR VALUED SPONSORS

PLATINUM



SOLDAN

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PROGRAM AT A GLANCE

11/27 (MON)		11/28 (TUE)		11/29 (WED)		11/30 (THU)		12/1 (FRI)	
TIME	Day 1	TIME	Day 2	TIME	Day 3	TIME	Day 4	TIME	Day 5
09:00 12:00	Training Session	09:00 12:30	Training Session	09:00 10:20	Scientific Session	09:00 10:20	Scientific Session	09:00 16:30 (05:00 18:30)	Field Excursion #1 (Field Excursion #2)
				10:20 10:40	Coffee Break	10:20 10:40	Coffee Break		
				10:40 12:00	Keynote Session	10:40 12:00	Keynote Session		
12:00 13:15	Lunch & Exhibition	12:30 13:10	Lunch & Exhibition	12:00 13:00	Lunch & Exhibition	12:00 13:00	Lunch & Exhibition		
13:15 16:30	Training Session	13:10 13:40	Welcome Address	13:00 14:20	Poster Session	13:00 14:20	Poster Session		
		13:40 14:30	Plenary Session						
		14:30 14:50	Photo Session & Coffee Break	14:20 15:40	Scientific Session	14:20 16:05	Scientific Session		
		14:50 16:40	Special Session						
		16:40 16:55	Coffee Break						
		16:55 17:55	Scientific Session	16:00 17:15	Scientific Session	16:10 16:40	Closing Ceremony		
		17:55 18:30	A3 Program Meeting	17:30 18:30	AsiaFlux SSC Meeting				
			Cocktail		Young Scientist Meeting				
				18:30 20:30	Banquet				

MESSAGE FROM THE CHAIR OF KSAFM

Dear distinguished attendees, welcome to the joint conference between AsiaFlux Network and Korean Society of Agricultural and Forest Meteorology (KSAFM). As a president of the KSAFM, I would like to express my deep gratitude to the presenters, the invited guests and the organizing committee officials. I'm sure we all will make the conference bright and interesting.

Over the past few years, the world has had to go through difficult times due to the spread of COVID-19. The coronavirus outbreak is an example of how human prosperity is like a flame on a fragile foundation. Today, we face a variety of environmental problems, along with the risk of severe climate disasters, such as floods, droughts, heat and cold waves, and forest fires. Future impacts of climate change could bring more severe and lasting widespread shocks to human society and the global ecosystem than in the last century. We scientists have

been trying to understand the structure and operating processes of nature and human society, as well as the principles of their adaptation and evolution to the environmental changes. Those achievements have been gathered to form the basis of the IPCC Climate Change Report, Millennium Assessment Report, and Biodiversity Assessment Report and so on.

Flux studies over the past 30 years have contributed significantly to understanding the atmosphere-vegetation-soil interactions in various Earth ecosystems. This covers a wide range of disciplines, including understanding biometeorology, tree ecophysiology, and ecosystem biochemical processes, as well as the use of satellite RS imagery and the development of ecosystem models. I think all these fields will be covered in this conference and we will enjoy the presentations and discussions on the hard-working research results of many participants.

Lastly, I hope you enjoy the beautiful nature of Jeju Island, one of UNESCO World Natural Heritage Sites, and make many friends at the conference.
Have a good time~ 즐거운 시간 보내세요~



President Sinkyu Kang

MESSAGE FROM THE CHAIR OF ASIAFLUX

It is with great pleasure that I welcome you all to the AsiaFlux Conference 2023, hosted on Jeju Island, Korea. As the Chair of AsiaFlux, I am profoundly honored to host this gathering of brilliant minds and dedicated researchers from across Asia and the world.

This year, we convene under the theme "The Role of AsiaFlux in the Era of Carbon Neutral and Beyond," which reflects our collective commitment to not only advancing scientific understanding but also applying our knowledge for societal contribution toward a carbon neutral society. The challenges of climate change and environmental sustainability are immense, and they require collaborative efforts that forums such as AsiaFlux can foster.

Our agenda in the coming days will be filled with insightful presentations, engaging discussions, and valuable networking opportunities. I encourage each of you to actively participate, exchange ideas, and establish friendships to tackle global environmental issues such as climate change and a carbon-neutral society.

Let us use this time not only to reflect on our recent scientific advancements but also to inspire one another to continue our important work with renewed vigor and shared purpose. Furthermore, we would also like to aim at collaborative contribution toward a carbon-neutral society in Asia and globally.

Once again, welcome the AsiaFlux Conference 2023. I look forward to productive dialogues and innovative collaborations that will arise from this conference.



President Kazuhito Ichii

ABOUT THE KOREAN SOCIETY OF AGRICULTURAL AND FOREST METEOROLOGY



The Korea Society of Agricultural and Forest Meteorology is founded on March 20, 1999 to promote and distribute the research and application of theories and technologies on agricultural and forest meteorology. We also effort to link academic and business, and to contribute to national food security and ecosystem conservation.

Our society conducts academic activities in 10 specialized sections, including agricultural micro-meteorology, local climate, agricultural climate modification, mountain weather, plant disease and insect pest, environmental measurement, ecological model, agricultural utilization, hydrological weather, and agricultural remote sensing. Results of our academic activities are presented through publication of the Korea Journal of Agricultural and Forest Meteorology four times a year as well as annual conference and workshops.

ORGANIZATION

President	: Sinkyu Kang
Vice President	: Kyu Rang Kim, Hyun Seok Kim, Kyo Moon Shim
Directors	: Dae Jun Kim, Kwang Soo Kim, Kwang Hyung Kim, Jaeil Cho, Min Seok Kang, Kyung Do Lee, Jung Hwa Chun, Kyung Ha Hong
Audit	: Jae Cheol Nam
Local Organizing Committee	: Hyun Seok Kim, Youngryel Ryu, Jaeil Cho, Jinkyu Hong

ABOUT THE ASIAFLUX NETWORK



AsiaFlux was established in 1999 as the Asian arm of FLUXNET, the worldwide flux network, to develop collaborative research and data sets on the cycles of carbon and water in key ecosystems in Asia, to organize workshops and training on current and related global change themes, and to cultivate next generation scientists to be informed leaders with skills and perspectives. Over the past 20 years, AsiaFlux has developed into a regional research network composed of 28 member countries. More than 100 flux observation towers were built in Asia, covering diverse terrestrial ecosystems. Researchers of AsiaFlux have made great progress in flux observation, remote-sensing and ecosystem modeling, and made outstanding contributions to quantifying global carbon balance and understanding the functions of Asian terrestrial ecosystems.

ORGANIZATION

Chair : Kazuhito Ichii (Japan)

Vice Chair : Shuli Niu (China), Minseok Kang (Korea)

VISION AND MISSION

AsiaFlux's vision is to serve as the "Science Frontier" in carbon, water, and energy cycles, developing and transferring knowledge characterized by; Consilience, Contextualization, and Cultural diversity. The mission is to bring Asia's key ecosystems under observation to develop and transfer scientific knowledge to ensure quality and sustainability of life in Asia. AsiaFlux's purposes are therefore, to develop collaborative research and data sets on the cycles of carbon, water and energy in key ecosystems in Asia. The network also routinely organizes workshops and training courses on current and related global climate change themes. Ultimately, its purpose is to cultivate the next generation scientists with skills and perspectives to address global climate change in Asia as informed future leaders.

HISTORY OF ASIAFLUX EVENT

2023	27 Nov - 1 Dec 2023	AsiaFlux Conference 2023	Jeju Island, Korea
2022	20-22 September 2022	AsiaFlux Conference 2022	Kuching, Malaysia
2021	20-21 December 2021	AsiaFlux Online Conference 2021	
2019	2-5 October 2019	16 th AsiaFlux Workshop (AsiaFlux2019 - 20 th Anniversary Workshop)	Takayama, Japan
2018	23-26 August 2018	15 th AsiaFlux Workshop (OzFlux-AsiaFlux Joint Conference)	Darwin, Australia
2017	17-19 August 2017	14 th AsiaFlux Workshop (Joint Conference of AsiaFlux Workshop 2017 & the 15th Anniversary Celebration of ChinaFLUX)	Beijing, China
2015	22-29 November 2015	13 th AsiaFlux Workshop	IITM, Pune, India
2014	18-23 August 2014	12 th AsiaFlux Workshop	Los Baños, Philippines
2013	20-24 August 2013	11 th AsiaFlux Workshop	Seoul, Korea
2011	9-11 November 2011	10 th AsiaFlux Workshop	Johor Baru, Malaysia
2010	1-3 December 2010	9 th AsiaFlux Workshop	Guangzhou, China
2009	27-29 October 2009	8 th AsiaFlux Workshop	Sapporo, Japan
2008	17-19 November 2008	7 th AsiaFlux Workshop	Seoul, Korea
2007	19-22 October 2007	6 th AsiaFlux Workshop	Taoyuan, Taiwan
2006	29 Nov - 1 Dec 2006	5 th AsiaFlux workshop	Chiang Mai, Thailand
2005	24-26 August 2005	4 th AsiaFlux Workshop	Fujiyoshida, Japan
2003	1-3 December 2003	3 rd AsiaFlux Workshop	Beijing, China
2002	9-11 January 2002	2 nd AsiaFlux Workshop	Jeju Island, Korea
2000	27-29 September 2000	1 st AsiaFlux Workshop	Sapporo, Japan

PLENARY SPEAKER



Ram Oren

Nicholas Distinguished Professor of Earth
Systems Science
Co-Chair, Master of Forestry

With his graduate students, Oren quantifies components of the water cycle in forest ecosystems, and their responses to biotic and abiotic factors. Relying on the strong links between the carbon and water cycles, he also studies the components of the carbon flux and their response to these factors. Climate variability, including variations in air temperature, vapor pressure deficit, incoming radiation and soil moisture, and environmental change, including elevated atmospheric carbon dioxide, affect the intra- and inter-annual dynamics, and amounts of water used by forest ecosystems, and their spatial distribution, as well as carbon uptake and sequestration. In turn, the variation of water flux influence the temporal and spatial partitioning of incoming radiation between latent and sensible heat. The flow of water from soil through plant leaves into the atmosphere, and the exchange of water for CO₂ absorbed from the atmospheric, are among the processes theoretically best understood in plant and ecosystem physiology. Using these theories, local mass balance approaches, and detailed measurements of water and carbon flux and driving variables in the soil, plants, and the atmosphere, Oren has been attempting to predict the likely responses of forest ecosystems, from the equator to the arctic circle, to environmental change and management.



KEYNOTE SPEAKER



Sébastien Biraud

Climate Sciences Department Head, Earth &
Environmental Sciences Area at Lawrence
Berkeley National Lab(LBNL)
The AmeriFlux Management Project (AMP)
Technical Lead

Dr. Biraud leads the Climate Sciences Department in the Climate and Ecosystem Sciences Division (CESD). He is the Principal Investigator of the DOE-supported Atmospheric Radiation Measurement Carbon Project, Airborne Carbon Measurement Experiments (ARM-ACME). He is also the Technical Lead for the AmeriFlux Management Project, and the Principal Investigator for the US-ARM AmeriFlux site located in the U.S. Southern Great Plains.

Dr. Biraud is an internationally recognized expert in the field of atmospheric greenhouse gases (GHG) observations to support research on carbon cycle, satellites validation, and source attribution. His work relies heavily on the development of measurement capabilities to estimate carbon exchange between the land and the atmosphere. These measurements and analysis activities include: (1) developing eddy covariance systems; (2) building and testing continuous high-accuracy and high precision GHG observations system; (3) integration of GHG observation systems on aircrafts, towers, and UAS platforms; (4) publishing his work on GHG emissions estimates at local and regional scales.



KEYNOTE SPEAKER



Sung-Ching Lee

Eco-Meteorology Group Leader, Department
Biogeochemical Integration (BGI), Max Planck
Institute

Sung-Ching Lee is a broadly trained biometeorologist studying the underlying processes of ecosystem-atmosphere interactions for natural and managed ecosystems. His research investigates the responses of ecosystem-atmosphere carbon and water fluxes to environmental controls in various forest and wetland ecosystems using micrometeorological methods, including flux measurements by the eddy covariance technique, closed-chamber measurements, and stable isotopes approach. Through experimentation and manipulation, he tries to identify potential feedbacks and determine net climate impacts of different activities. Also, he aims to provide estimates at larger spatial scales using remote sensing and modelling approaches.



KEYNOTE SPEAKER



Tomo'omi Kumagai

Professor, Graduate School of Agricultural and Life Sciences, The University of Tokyo

Tomo'omi Kumagai is a professor of Graduate School of Agricultural and Life Sciences, The University of Tokyo, and a guest professor of Institute for Space-Earth Environmental Research, Nagoya University. He is investigating the interaction between climate system and biosphere. Forests, for example, that grow as a result of a certain level of precipitation, generate moisture in the atmosphere through evapotranspiration, and this contributes to precipitation levels in that same region.

His research group is focused on interactions of this sort in terrestrial ecosystems, involving the flow of energy and materials through the atmosphere, plants and soil.



KEYNOTE SPEAKER



Yiqi Luo

Liberty Hyde Bailey Professor, School of Integrative Plant Science, Cornell University

Yiqi Luo's research program is focused on predictive understanding of ecosystem ecology and biogeochemistry under the global environmental change via data-model integration. Major issues include (1) how global change alters structure and functions of terrestrial ecosystems, and (2) how terrestrial ecosystems regulate climate change, addressed using experimentation, observation, data synthesis, modeling, data-model fusion, and theoretical analysis.

Among his many honors, Yiqi is a Fellow of the American Geophysical Union, the Ecological Society of America, and AAAS. He has also been recognized by Web of Science as a highly cited researcher for 2018-2021.



GENERAL INFORMATION

ORAL PRESENTATIONS GUIDELINES

All speakers are asked to send PowerPoint slides via email prior to the conference. Organizers will prepare a laptop for presentation to avoid wasting time switching between personal laptops, and presentation files will be uploaded to the on-site laptop before the conference. Considering software compatibility issues, it is recommended that speakers save the presentation file to a USB memory stick and bring the backup version. Also, since only the basic font is installed in the on-site laptop, please use the basic font (Arial or Times New Roman) for the presentation if possible. Speakers are advised to be in the session room 10 minutes BEFORE the start of their sessions. If there is a technical problem, technical assistant will be available from technicians.

Please prepare your presentation according to the allocated time as follows:

Plenary: 40 mins + 10 mins Q&A

Keynote: 30 mins + 10 mins Q&A

Oral: 12 mins + 3 mins Q&A

POSTER PRESENTATIONS GUIDELINES

All speakers are asked to prepare a poster and display it on a designated panel at the foyer. Each poster including the paper title, authors, and affiliation must fit within a 0.9m x 1.5m space (A0 size recommend). All posters will be mounted for display from 27 November 10:00 AM to 28 November 10:00 AM and removed after a closing ceremony on 30 November. Please claim your poster at the Secretariat desk before the last day of the conference. Any unclaimed posters will be disposed of by the organizers. Scotch tape will be provided for your use, and use of double-sided tape is prohibited. During the session, discussions with participants are encouraged.

NAME TAGS

Name tags will be given upon registration. All participants are kindly requested to wear their name tags provided throughout all conference events. Admittance to scientific sessions may be refused if the required name tags cannot be presented.

GENERAL INFORMATION

EXHIBITION

Commercial exhibitions will be held at the foyer and will be opened throughout the conference. Participants are encouraged to visit the exhibitions during lunch break and coffee break.

ONE-STOP INFORMATION

General inquiries can be made at the secretariat desk. The desk will be opened during the conference.

*The Secretariat reserves the right to change any rules or guidelines without prior notice.

DISCLAIMER

The program book is considered accurate at the time of printing. Note that some information may change due to unforeseen circumstances.

VENUE

Jeju Shinhwa World, 38 Sinhwayeoksaro 304 beon-gil, Andeok-myeon Seogwipo-si, Jeju, Korea
(<https://www.shinhwaworld.com/>)

DINING

There are various dining locations around the Jeju Shinhwa World complex. Please refer to Jeju Shinhwa World website or AsiaFlux Conference 2023 website.

SMOKING PROHIBITION

Smoking is strictly prohibited in and outside of the conference complex.

EMERGENCIES

For emergencies, nearest hospital to the Jeju Shinhwa World complex is:

Police

Tel: 112

Fire & Ambulance

Tel: 119

Asan Bon Orthopedic Clinic

Tel: 064-758-7582

Distance: 5.7 km (9 mins by car)

Eston Clinic (family medicine)

Tel: 064-792-3537

Website: www.estonclinic.com

Distance: 6.3 km (11 mins by car)

Seogwipo Medical Center

General Information:

064-730-3000 (day); 064-730-3015(night)

Medical Consultation:

064-730-3155(day); 064-730-3015(night)

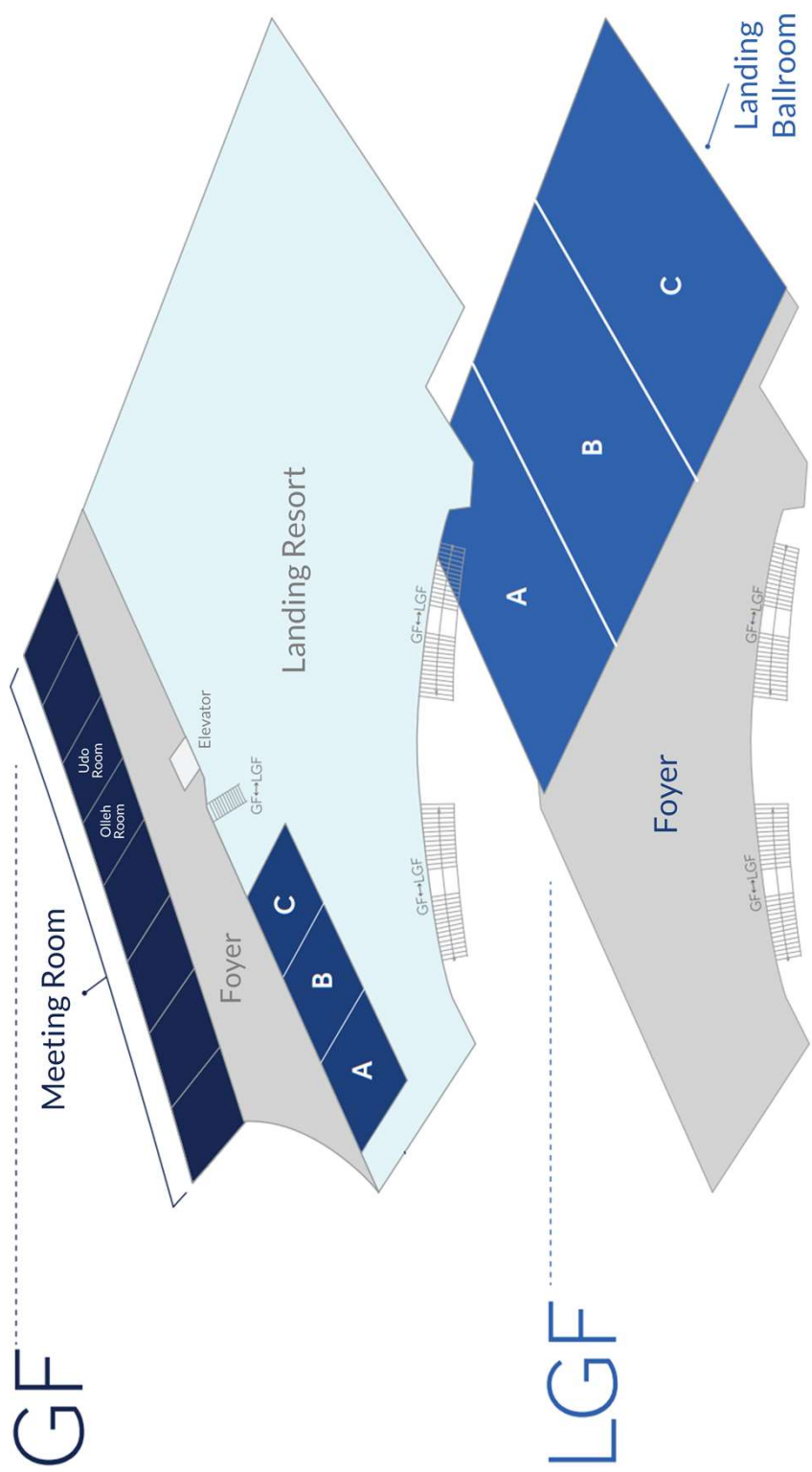
24-hour Emergency Medical Center:

064-730-3001~3003

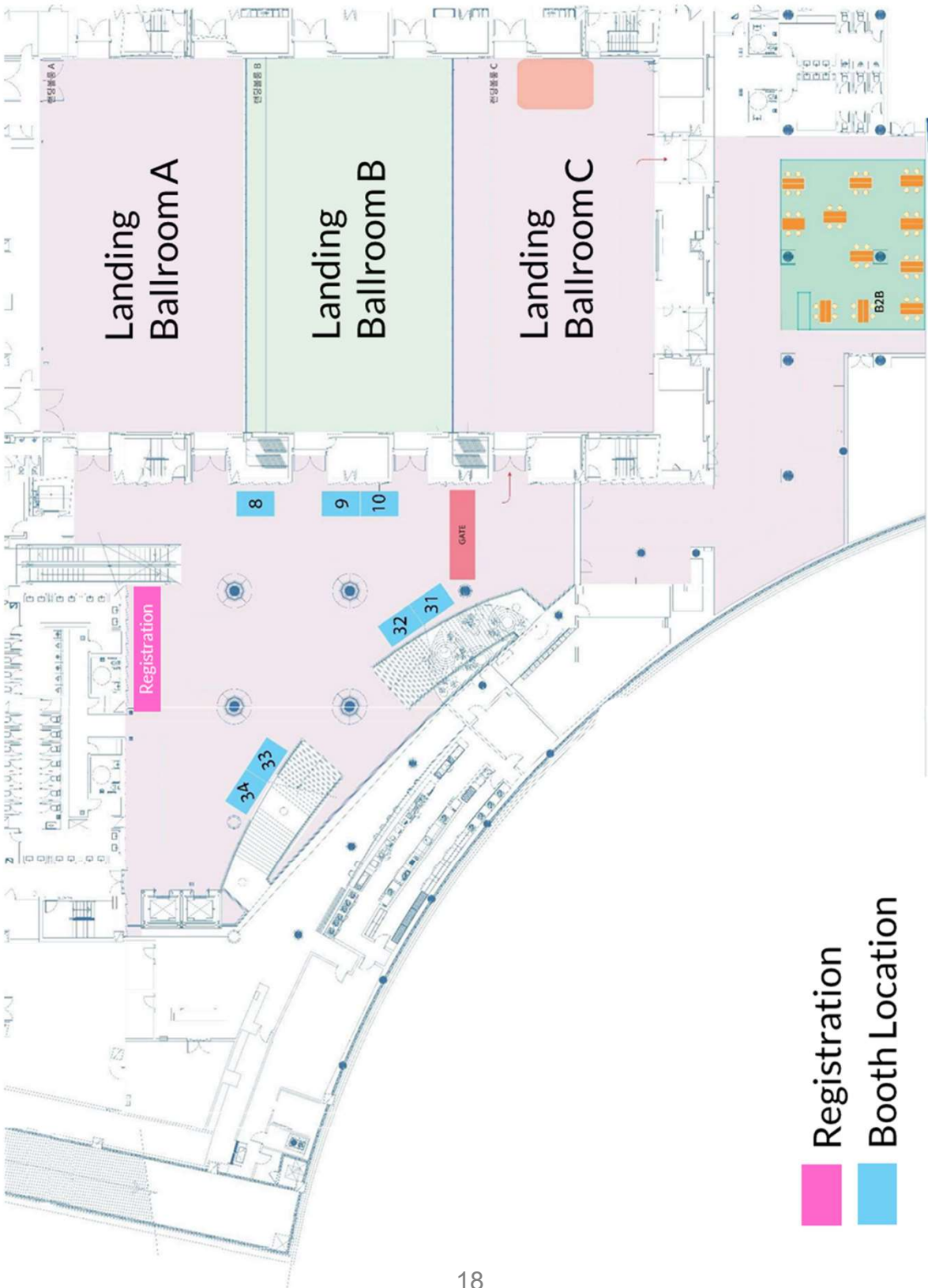
Website: <https://www.jjsmc.or.kr/>

Distance: 27.6 km (38 mins by car)

FLOOR PLAN



FLOOR PLAN



DIRECTORY OF EXHIBITORS

Booth No. 8

PICARRO

Picarro, Inc.

<https://www.picarro.com/>

Booth No. 9



CAMPBELL SCIENTIFIC, INC.

<https://www.campbellsci.com/>

Booth No. 10

B&P

|주| 비엔피인스트루먼트

B&P INSTRUMENT

<https://www.bandp.co.kr/>

Booth No. 31



EPINET

<http://www.epinet.co.kr/>

Booth No. 32



Gasmeter Technologies Oy

<https://www.gasmeter.com/>

Booth No. 33



LI-COR, Inc.

<https://www.licor.com/>

Booth No. 34



SOLDAN

SOLDAN

<http://soldan.co.kr/>

PROGRAM

- COCKTAIL -



An opportunity to socialize with others for friendships and network

Date : 28th November, 2023

Time : 17:55 – 18:30

Venue : Foyer in front of Landing Ballroom, Jeju Shinhwa World

- BANQUET -



An evening to welcome delegates with Korean folk fusion music concert

Date : 28th November, 2023

Time : 18:30 – 20:30

Venue : Landing Ballroom A+B, Jeju Shinhwa World

PROGRAM

- YOUNG SCIENTIST MEETING -



An opportunity to hear experiences from senior/early career scientists

Date : 29th November, 2023

Time : 17:30 – 18:30

Venue : Meeting Room , Jeju Shinhwa World

Speakers : Sung-Ching Lee, Tomo'omi Kumagai, Yiqi Luo

FIELD EXCURSION #1



Gosan Global Atmosphere Watch Station



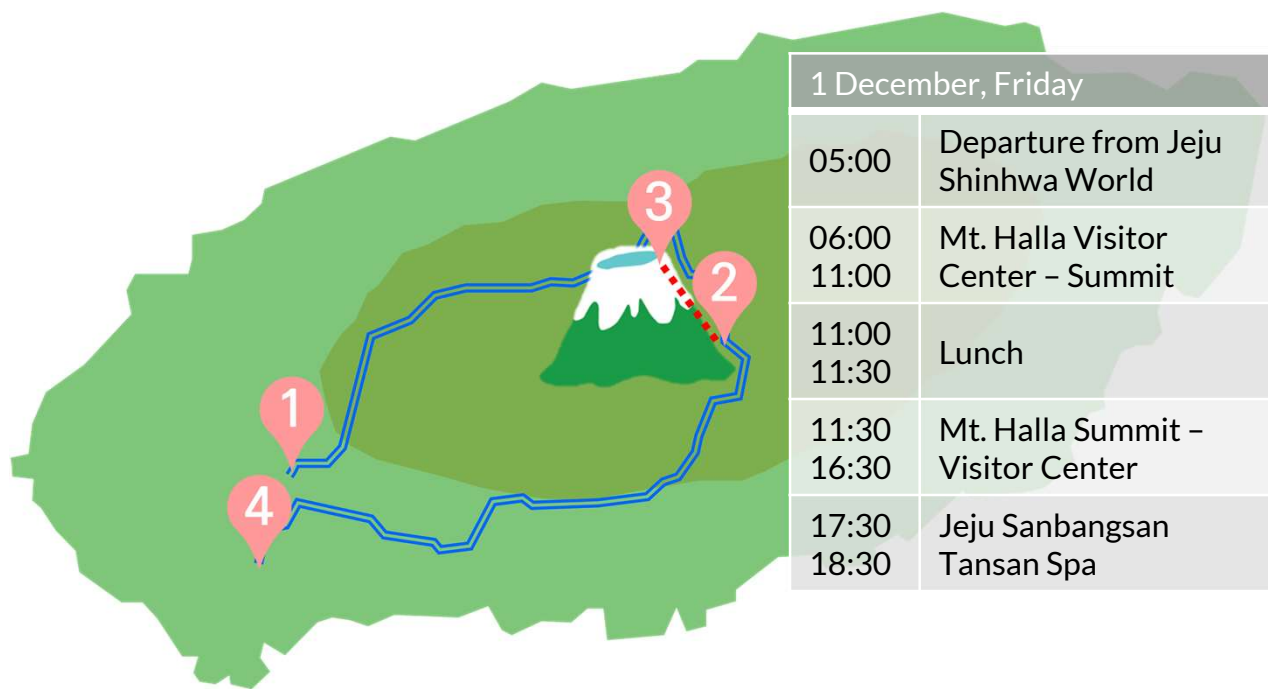
<https://agage.mit.edu/stations/gosan>

Hallim Park



<https://hallimpark.com/>

FIELD EXCURSION #2



Hallasan Mountain



<https://visithalla.jeju.go.kr/main/main.do>

Sanbangsan Tansan Spa



<https://www.tansanhot.com/>

ASIAFLUX CONFERENCE 2023 THEME

THE ROLE OF ASIAFLUX IN THE ERA OF CARBON NEUTRAL AND BEYOND

The conference will focus on scientific topics related to ecosystems' roles in the climate change and carbon neutral.

PLENARY SESSION

Mechanisms regulating tree water uptake in a patchy woodland-grass system and consequences to net ecosystem carbon exchange: Setting limits to management options under changing climate

KEYNOTE SESSIONS

- Lessons learned from 25 years of cooperative eddy covariance measurements in the Americas
- What extra information do long-term and ancillary data give us?
- El Niño-Southern Oscillation forcing on carbon and water cycling in a Bornean tropical rainforest
- Ecological principles underlying carbon dioxide removal towards carbon neutrality

SESSION 1: ADVANCEMENTS IN GREENHOUSE GAS FLUXES MONITORING AND MODELING

This session would focus on the latest advancements in monitoring and modeling greenhouse gas (GHG) fluxes in terrestrial ecosystems. It would cover topics such as innovative measurement techniques, data integration and assimilation methods, and model developments. The session would also explore the role of AsiaFlux in advancing our understanding of GHG cycling and its implications for achieving carbon neutrality.

ASIAFLUX CONFERENCE 2023 THEME

SESSION 2: LEVERAGING THIRD-GENERATION GEOSTATIONARY SATELLITES FOR TERRESTRIAL ECOSYSTEM MONITORING: ADVANCES, CHALLENGES, AND APPLICATIONS

This session focuses on the utilization of third-generation geostationary satellites, such as Himawari-8/9, GeoKomsat-2A, Fengyun-4, and GOES-16/17/18, for terrestrial ecosystem monitoring. The session aims to discuss the advancements, challenges, and novel applications of these satellite sensors in estimating land surface parameters, calibration, validation, and their integration with AsiaFlux data. It also welcomes studies on atmospheric parameters related to land surface phenomena. International collaboration efforts and the application of AsiaFlux data are highly encouraged.

SESSION 3: IMPACTS OF CLIMATE CHANGE ON ASIAN ECOSYSTEMS

This session would explore the impacts of climate change on Asian ecosystems and how they intersect with carbon cycling. Presentations could cover a range of topics, including shifts in vegetation dynamics, changes in ecosystem productivity, altered water and nutrient cycles, and the responses of biodiversity to changing climatic conditions. Discussions would focus on the role of AsiaFlux in monitoring and quantifying these impacts.

SESSION 4: BIOSPHERE-ATMOSPHERE INTERACTIONS IN SOUTHEAST ASIA'S (SUB)TROPICAL ECOSYSTEMS: UNDERSTANDING AND EVALUATING GHG FLUXES

This session aims to bring together researchers from various disciplines to discuss the complex biosphere-atmosphere interactions within (sub)tropical ecosystems in Southeast Asia. It focuses on the role of AsiaFlux in advancing our understanding of GHG fluxes in this region, addressing the urgent need for additional data and analysis to describe and explain these interactions. The session also explores the implications for global biogeochemical cycling and climate change mitigation efforts, emphasizing the evaluation and constraint of terrestrial ecosystem models.

ASIAFLUX CONFERENCE 2023 THEME

SESSION 5: MONITORING AND MANAGING ECOSYSTEM RESILIENCE TO CLIMATE CHANGE

This session would delve into the efforts to monitor and manage ecosystem resilience in the face of climate change. Discussions could revolve around long-term monitoring efforts, remote sensing applications, and case studies highlighting successful adaptation and mitigation strategies for climate change. Presentations on the potential solutions towards resilient ecosystems would also be included.

SESSION 6: HARNESSING BIG DATA AND ARTIFICIAL INTELLIGENCE IN FLUX RESEARCH

This session would explore the intersection of big data, artificial intelligence (AI), and flux research. It would encompass topics such as the integration of AI techniques in data processing, data-driven approaches for analyzing flux data, and machine learning algorithms for predictive modeling. The session could also feature demonstrations of data management and sharing platforms.

SESSION 7: NATURE-BASED SOLUTIONS FOR CARBON NEUTRALITY IN ASIA

This session would showcase innovative nature-based solutions and strategies for achieving carbon neutrality in Asia. Presentations could address topics such as sustainable land use and agriculture practices, carbon sequestration initiatives, and the role of ecosystems in reducing carbon emissions. The session would emphasize the importance of AsiaFlux in providing scientific insights to inform and support these carbon neutrality efforts.

ASIAFLUX CONFERENCE 2023 THEME

SPECIAL SESSION: A3 FORESIGHT PROGRAM

The A3 Foresight Program “Study on ecosystem GHGs exchange and its response to climate change in Northeast Asia” is an international collaborative project which was designed to conduct network-to-network integrative research on carbon cycle studies by integrating ChinaFLUX, JapanFlux, and KoFlux. This project will bring together scientists from China, Japan, and Korea to evaluate and integrate CO₂ and other greenhouse gases (e.g., CH₄, N₂O) flux measurements made in individual countries, and to up-scale site-specific results, to regional, national, and finally entire Northeast Asia. This project aims to improve land surface models by regional data assimilation, to synthetically quantify and understand the terrestrial carbon budget in Northeast Asia and its roles in the global carbon cycle.

SPECIAL SESSION: KOREAN SOCIETY OF AGRICULTURAL AND FOREST METEOROLOGY

SPECIAL SESSION: KOREA CARBON PROJECT (KCP)

The Korea Carbon Project (KCP) is a groundbreaking research initiative generously supported by the Ministry of Environment. In its inaugural year, KCP has made remarkable strides in carbon monitoring (emissions and sequestration). This session promises to be an enlightening journey into the innovative work undertaken by KCP, offering valuable insights into the carbon landscape in Korea.

The background of the page features abstract, flowing shapes in shades of blue and grey. A large, light grey shape dominates the upper half, while the lower half is composed of various blue and grey waves and curves that create a sense of movement and depth.

DAILY PROGRAM

DAILY PROGRAM

Day 1 - Monday, 27th November, 2023

Flux Training Session (Landing Ballroom C)

09:00 - 09:20	Welcome and opening remarks; Participant introductions
09:20 - 10:00	Scaling up to ecosystem measurements and eddy covariance theory
10:00 - 12:00	Instrumentation – Eddy Covariance and Biomet Systems
12:00 - 13:15	Lunch
13:15 - 14:00	Applications; Designing an experiment
14:00 - 16:30	Deployment and integration; Hands-on Installation

Day 2 - Tuesday, 28th November, 2023

Flux Training Session (Landing Ballroom C)

09:00 - 09:45	Data monitoring; Maintenance
09:45 - 10:30	Hands-On Data Processing
10:30 - 11:30	Data Analysis with Tovi
10:30 - 11:30	Data Analysis with Tovi
11:30 - 12:30	Hands-on Data processing with EddyPro; Ecosystem monitoring – supplemental Biological measurements
12:30 - 13:10	Lunch

DAILY PROGRAM

Day 2 - Tuesday, 28th November, 2023

Plenary Session (Landing Ballroom C)

13:10 - 13:40	Welcome Address
13:40 - 14:30	Plenary: Ram Oren Mechanisms regulating tree water uptake in a patchy woodland-grass system and consequences to net ecosystem carbon exchange: Setting limits to management options under changing climate
14:30 - 14:50	Photo Session & Coffee Break

A3 Foresight Program Special Session (Landing Ballroom C)

14:50 - 15:10	Kyung-Ja Ha Changes in land-atmosphere coupling increase compound drought and heatwaves over northern East Asia
15:10 - 15:30	Joon Kim Handshaking between the Two A3 Foresight Programs: Re-thinking Science, Service, and Stewardship
15:30 - 15:50	Gayoung Yoo Quantifying Carbon Flux in Urban Roadside Greenery: Integrating Shrub Photosynthesis and Soil Respiration into Net Ecosystem Production
15:50 - 16:10	Soon-Chang Yoon A short history of Future Earth in Korea

Korea Forestry Promotion Institute Special Talk (Landing Ballroom C)

16:10 - 16:40	Soonjin So Innovation issues to expand supply of forest carbon credit in Korea
16:40 - 16:55	Coffee Break

DAILY PROGRAM

Day 2 - Tuesday, 28th November, 2023

S1. Advancements in Greenhouse Gas Fluxes Monitoring and Modeling (Landing Ballroom C)

16:55 - 17:10	Hyungwoo Lim Estimating carbon flux of forest wood biomass
17:10 - 17:25	Ruci Wang An evaluation of globally estimated GPP derived from the VISIT model through comparisons with diverse GPP products
17:25 - 17:40	Kentaro Takagi Long-term CO ₂ and O ₃ flux monitoring in a cool-temperate forest to evaluate the effect of forestry management activities
17:40 - 17:55	Shaoyu Wang Integration of Flux Tower, Drone-Based Hyperspectral Imagery, and Satellite Data for Precise High-resolution Wetland Carbon Flux Mapping
17:55 - 18:30	A3 Foresight Program Meeting (A3 Program Members) (Olleh Room)
17:55 - 18:30	Cocktail (General Participants) (Foyer in front of Landing Ballroom)
18:30 - 20:30	Banquet (Landing Ballroom A+B)

DAILY PROGRAM

Day 3 - Wednesday, 29th November, 2023

S1. Advancements in Greenhouse Gas Fluxes Monitoring and Modeling (Landing Ballroom A)

09:00 - 09:05	Introduction
09:05 - 09:20	Zayar Phyo Responses of heavy snowfall events on aboveground litterfall respiration in subtropical evergreen broadleaf forest of Ailao Mountain, Southwest China
09:20 - 09:35	Ivan Bogoev Flow distortion effects by open-path gas analyzers for eddy-covariance applications
09:35 - 09:50	Sunchai Phungern Gap-filling greenhouse gas fluxes for flux-gradient method using machine learning techniques at paddy fields in central Japan
09:50 - 10:05	Wei Xiao Evaluation of the Maximum Evaporation Model for Inland Waterbodies
10:05 - 10:20	Xiang Zhang Vegetation Phenology and Simulation GPP from Harmonized Landsat and Sentinel-2 in a Chinese Savanna Ecosystem During Different Phenological Phases
10:20 - 10:40	Coffee Break

Day 3 - Wednesday, 29th November, 2023

S4. Biosphere-Atmosphere Interactions in Southeast Asia's (Sub)tropical Ecosystems (Landing Ballroom B)

09:00 - 09:05	Introduction
09:05 - 09:20	Gnanamoorthy Palingamoorthy Carbon processes are more resilient than water processes in a subtropical forest following extreme snow events
09:20 - 09:35	Shih-Chieh Chang Characteristics of a new flux site on solar panel farm in Taiwan
09:35 - 09:50	Ting-Wei Chang Effect of time of day and leaf position on isoprene emission rate from oil palm (<i>Elaeis guineensis</i>)
09:50 - 10:05	Bora Lee Mangrove and Semi-Mangrove Potential in Carbon Sequestration and Climate Mitigation Strategies
10:05 - 10:20	Rungtawan Thabkhum Carbon sequestration of rubber plantations in Thailand
10:20 - 10:40	Coffee Break

DAILY PROGRAM

Day 3 - Wednesday, 29th November, 2023

Korean Society of Agricultural and Forest Meteorology (Landing Ballroom C)

09:00 - 09:05	Introduction
09:05 - 09:20	Jeonghyun Hong Experimental analysis of the PM2.5 reduction characteristics between pine and oak plants under different densities and arrangement structures
09:20 - 09:35	Seohyun Kim Comparisons of Hydraulic and Photosynthetic Characteristics among Coexisting Four Subalpine Species under Drought and Warming Treatments
09:35 - 09:50	Mega Trishuta Pathiassana Nectar Properties and Plant Responses to Varied Environmental Treatments in <i>Veronica rotunda</i> sp.
09:50 - 10:05	Minsu Lee Estimation of the flowering period of honey tree using satellite data
10:05 - 10:20	Jihyeon Jeon Evaluating Isotope Analyzers and Extraction Techniques: A study of Water Isotope Compositions in Soil and Xylem
10:20 - 10:40	Coffee Break

Day 3 - Wednesday, 29th November, 2023

Keynote Session (Landing Ballroom A)

10:40 - 11:20	Sébastien Biraud Lessons learned from 25 years of cooperative eddy covariance measurements in the Americas
11:20 - 12:00	Sung-Ching Lee Power of long-term flux observation and synergies in land-atmosphere interactions
12:00 - 13:00	Lunch
13:00 - 14:20	Poster Session

DAILY PROGRAM

Day 3 - Wednesday, 29th November, 2023

S1. Advancements in Greenhouse Gas Fluxes Monitoring and Modeling (Landing Ballroom A)

14:20 - 14:35	Rui Hu Separation of soil respiration by a Random Forest approach
14:35 - 14:50	Mi Zhang Response of CH ₄ and CO ₂ fluxes to ecological restoration in a Lake aquaculture farm
14:50 - 15:05	Jihyeon Yeo Linking physiological SIF yield with photosynthesis for reliable remote sensing of crop productivity
15:05 - 15:20	Yiheng Wang Multiple dimensions of drought had different impacts on global gross primary productivity
15:20 - 15:35	Daniel Henri Analyzing the Effect of Different MODIS Product Versions Towards Long- term Terrestrial Carbon Cycle Monitoring in Asia
15:40 - 16:00	Coffee Break
16:00 - 16:15	Lingyan Zhou Effect of Long-term Nutrient Fertilization on Biodiversity in Subtropical Forest
16:15 - 16:30	Olga Kuricheva RuFLUX: the network of the eddy covariance sites in Russia
16:30 - 16:45	Yuji Kominami An approach to estimate forest NEP including ecosystem disturbances using long-term flux observations in Japan
16:45 - 17:00	Hina Yamanuki Elucidation of soil CO ₂ /CH ₄ budget by integrated analysis of soil observation data
17:00 - 17:15	Masato Oda Estimation of Methane Emissions from Lake Using Satellite Observation and Machine Learning Method

DAILY PROGRAM

Day 3 - Wednesday, 29th November, 2023

Korea Carbon Project (KCP) (Landing Ballroom B)

14:20 - 14:35	Bo-Kyeong Kim The Characteristics of Methane Emissions before and after Transplanting in Paddy Fields in Naju, South Korea using Eddy Covariance
14:35 - 14:50	Yerang Yang Age-associated increase in soil organic matter enhances soil microbial diversity and abundance in urban green spaces
14:50 - 15:05	Ji-Yeon Cha Radiocarbon analysis of throughfall in Taehwa Research Forests: Implications for the internal carbon cycle
15:05 - 15:20	Hyun shin Koh The effect of soil properties on Korean fir (<i>Abies koreana</i>) dieback and its influence on SOC decomposition in a high-altitude forest ecosystem
15:20 - 15:35	Jin-Soo Kim Land use and land cover change impact on future carbon sequestration by terrestrial ecosystem in East Asia
15:40 - 16:00	Coffee Break
16:00 - 16:15	Kyung-Hwan Kwak An estimating method of atmospheric CO ₂ diffusivity using the urban meteorological observation system in Seoul
16:15 - 16:30	Sangji Lee Establishing a network for continuous and consistent phenology research in Korea
16:30 - 16:45	Geun Jae Choi Evaluation of CO ₂ Flux Characteristics by Urban Ground Type Considering High Resolution Footprint
16:45 - 17:00	Minseop Jeong Influence of Canopy Structure and Understory Layers on Soil Respiration Hysteresis Patterns
17:00 - 17:15	Jongho Kim Estimation of High-Resolution Carbon Flux in Terrestrial Ecosystems Using Geosatellite Data and Machine Learning

DAILY PROGRAM

Day 3 - Wednesday, 29th November, 2023

Korean Society of Agricultural and Forest Meteorology (Landing Ballroom C)

14:20 - 14:35	Huaize Feng An Eight-Year Analysis of Energy Fluxes and Corresponding Controlling Factors in a Korean Rice Paddy
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14:35 - 14:50	Nanghyun Cho Anomaly versus CDF (Cumulative Distribution Function) for Assessment of Vegetation Growth Condition
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S3. Impacts of Climate Change on Asian Ecosystems Monitoring (Landing Ballroom C)

14:50 - 15:05	Hideki Ninomiya The future production of non-structural carbohydrate effects on global vegetation dynamics with climate change by using SEIB-DGVM-NSC
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15:05 - 15:20	Shweta Pokhariyal Analyzing the Impact of Heat Waves on Carbon and Water Vapour Fluxes in Sugarcane-Based Agroecosystems
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15:20 - 15:35	Minamo Terai Soil and mycorrhizal mycelium respiration along a 2,500-m elevation gradient in central Japan
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15:40 - 16:00	Coffee Break
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16:00 - 16:15	Naishen Liang Large CH ₄ Uptake Potential of Monsoon Asian Forest Soils
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16:15 - 16:30	Akira Tani Variabilities of terpenoid emission rates of major tree species grown in Japan
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16:30 - 16:45	Noboru Masui Relationship between feeding behavior of forest insects and biogenic volatile organic compounds under air-polluted environments
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16:45 - 17:00	Kai Zhu Vertical distribution of SIF and its environmental impact mechanism in subtropical evergreen forest
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17:00 - 17:15	Hongyang Chen Opposite temperature dependencies of wetland CH ₄ and CO ₂ emissions along global climate gradients
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DAILY PROGRAM

Day 3 - Wednesday, 29th November, 2023

17:30 - 18:30	AsiaFlux SSC Meeting (Olleh Room)
17:30 - 18:30	Young Scientist Meeting (Udo Room)

Day 4 - Thursday, 30th November, 2023

S3. Impacts of Climate Change on Asian Ecosystems (Landing Ballroom A)

08:30 - 08:35	Introduction
08:35 - 08:50	Zhenhai Liu Significant seasonality in warming response of methane exchanges over the wetlands and grasslands on the Qinghai-Tibetan Plateau
08:50 - 09:05	Xiangzhong Luo Uncertain changes of vegetation greenness interannual variability on half of the global vegetated surface
09:05 - 09:20	Yibo Liu Causes for the increases in both evapotranspiration and water yield over vegetated mainland China during the last two decades
09:20 - 09:35	Sukyoung Kim Improving predictions for spring flowering time with high-resolution daily temperature data
09:35 - 09:50	Seunguk Kim Dynamics of carbon storage and species composition in forest ecosystems under climate change and natural disturbance regime
09:50 - 10:05	Xing Chen GPP projection over East Asia constrained by sensitivity to precipitation
10:05 - 10:20	Jing Zhang Variations of long-term water use efficiency and its response to environmental factors in a primary subtropical evergreen broad-leaved forest in southwest China
10:20 - 10:40	Coffee Break

DAILY PROGRAM

Day 4 - Thursday, 30th November, 2023

S5. Monitoring and Managing Ecosystem Resilience to Climate Change (Landing Ballroom B)

08:45 - 08:50	Introduction
08:50 - 09:05	Jinghua Chen Radiation and temperature dominate the spatiotemporal variability in resilience of subtropical evergreen forests in China
09:05 - 09:20	Minkyu Moon A high spatial resolution land surface phenology dataset for AmeriFlux and NEON sites
09:20 - 09:35	Changhyun Choi Potential Advanced Ecosystem Productivity Mapping: Integrating Spaceborne SAR, Flux, and Dense LiDAR Point Cloud Data for NPP/GPP Ratio Estimation
09:35 - 09:50	Shuli Niu Thermal optimality of ecosystem carbon fluxes
09:50 - 10:05	Nanghyun Cho Can process-based BGC models simulate drought-induced tree mortality worldwide?
10:05 - 10:20	Abhishek Chakraborty Assessment of the Long-term Ecosystem Health of India using the Interplay of Trends of Resilience of Carbon and Water Use Efficiencies
10:20 - 10:40	Coffee Break

DAILY PROGRAM

Day 4 - Thursday, 30th November, 2023

S2. Leveraging Third-Generation Geostationary Satellites for Terrestrial Ecosystem Monitoring (Landing Ballroom C)

08:30 - 08:35	Introduction
08:35 - 08:50	Kazuhito Ichii Application of new generation geostationary satellites to help our understandings of terrestrial ecosystems in Asia
08:50 - 09:05	Yuhei Yamamoto Drivers of diurnal variations in gross primary production in East Asia using geostationary satellite data
09:05 - 09:20	Zhiyan Liu Quasi-Hourly Land Surface Temperature Observations over the Pan-arctic Regions using a Unique Dawn-Dusk Orbit Satellite
09:20 - 09:35	Beichen Zhang Generating Hourly Continuous Evapotranspiration Using Himawari-8 Geostationary Satellite Data
09:35 - 09:50	Youngryel Ryu Tracking diurnal variations of photosynthesis via geostationary satellites
09:50 - 10:05	Taiga Sasagawa Development of "blended GRV" for accurate vegetation phenology estimation with Himawari/AHI
10:05 - 10:20	Joongbin Lim Designing a Calibration and Validation Site for CAS500-4 in the Context of Forestry Vegetation Index Validation
10:20 - 10:40	Coffee Break

DAILY PROGRAM

Day 4 - Thursday, 30th November, 2023

Keynote Session (Landing Ballroom A)

10:40 - 11:20	Tomo'omi Kumagai El Niño-Southern Oscillation forcing on carbon and water cycling in a Bornean tropical rainforest
11:20 - 12:00	Yiqi Luo Ecological principles underlying carbon dioxide removal towards carbon neutrality
12:00 - 13:00	Lunch
13:00 - 14:20	Poster Session

Day 4 - Thursday, 30th November, 2023

S7. Nature-based Solutions for Carbon Neutrality in Asia (Landing Ballroom A)

14:20 - 14:35	Chandra Shekhar Deshmukh Unraveling the GHG effects of land-use change: a case study on Acacia crassicaarpa fibre wood plantation in Indonesian peatlands
14:35 - 14:50	Ning Liu Restoration can substantially reduce net carbon emissions from global drained wetlands
14:50 - 15:05	Jehn-Yih Juang Investigating influences of management strategies on microenvironment and flux patterns in tea fields
15:05 - 15:20	Fei Wu Nitrogen addition inhibits arbuscular mycorrhizal fungi respiration and methane uptake in an alpine meadow on the Qinghai-Tibetan Plateau

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Day 4 - Thursday, 30th November, 2023

A3 Foresight Program Special Session (Landing Ballroom B)

14:20 - 14:35	Mingyu Sun Estimation and pattern analysis of Bowen ratio of terrestrial ecosystem
14:35 - 14:50	Jinshuai Li Analysis of methane emission characteristics and environmental response in natural wetlands
14:50 - 15:05	Xiaojun Dou High spatial variability in water use efficiency of terrestrial ecosystems throughout China is predominated by biotic factors
15:05 - 15:20	Li Zhang Interannual variability of terrestrial net ecosystem productivity in East Asia: attribution and uncertainty
15:20 - 15:35	Xuhui Zhou Effects of extreme drought on root exudates and its priming effects on SOC decomposition in a subtropical forest
15:35 - 15:50	Xinyu Zhang Soil organic carbon cycling in different forest ecosystems along the north-south transect of the Da Xing'anling Mountains
15:50 - 16:05	Yong Lin Spatial patterns of LRC parameters and their influencing factors

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16:10 - 16:40	Closing Ceremony (Landing Ballroom B)
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DAILY PROGRAM

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Poster Session

0006	Yiping Zhang Phenological characteristics of different forest ecosystems with different latitudinal gradients and its responses to climate change in southwest china- Indo – China peninsula region based on canopy colour index
0007	Linjie Jiao Monitoring and analyzing CO ₂ flux in a tropical rainforest in Southwestern China for 20 years
0016	Byeonggil Choi Soil carbon storage of parks and roadsides in the urban and suburban settlements in southern Korea
0017	Gyeongwon Baek Influence of forest fire intensity on soil respiration rates and carbon concentration of forest floor and mineral soils
0018	Jihyun Lee Allometric equations for carbon storage of <i>Thuja occidentalis</i> in an urban settlement area
0020	Choonsig Kim Heterotrophic soil respiration rates in two coniferous and one evergreen broadleaved tree plantations in southern Korea
0021	Myeong Su Ko Establishment of airborne pollen monitoring network and automatic observation system in Korea
0024	Chang Cao Urbanization effect on phenology of <i>Platanus acerifolia</i> based on PhenoCam in Nanjing, China
0026	Po-Neng Chiang Impact of Alternate Wetting and Drying (AWD) Irrigation on Greenhouse Gases Emissions in Rice Paddies Using Continuous Measurement
0030	Euni Jo Test of estimating crop growth monitoring using canopy light extinction ratio in garlic, maize, and soybean fields
0033	Kyuhong Song Impact of Forest Management on Soil CO ₂ Efflux
0034	Wei Li A Hyper-temporal Surface Reflectance Dataset from Himawari-8 AHI for Enhanced Vegetation Monitoring
0036	Seung Beom Seo Assessment of Adaptation Strategy in Mitigating Flood Damage under Climate Change
0038	Hyun-Dong Moon Effects of bidirectional reflectance distribution function on paddy rice using hyperspectral installed in goniometer
0039	Tae Hee Kim Comparison of Methane Emission Patterns depending on Cropping System in Paddy Field

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Poster Session

0041	Jun Wang High spatial resolution simulation of urban CO ₂ and CH ₄ emissions based on vehicle-carried observation
0042	Hyeonji Yang Evaluation of methods for producing agro-meteorological disaster maps using farm maps
0044	Hyeonji Yang Evaluation of fire blight prediction in fruit community areas using observation data from pear orchard
0045	Bai Yang FluoreSENSTM 10: A New System to Measure Solar-Induced Chlorophyll Fluorescence (SIF) at Eddy Covariance Flux Sites
0046	Eung-sup Kim Projections of climate-type and suitable cultivation area for major fruit trees in South Korea under RCP scenarios using regional climate models
0050	Shweta Pokhariyal Comparative Performance of Remote-Sensing Based Models for GPP Estimation in Agricultural Ecosystem
0053	Kunhyo Kim Estimation of the Carbon Stock and Determining Soil Properties at Green Areas in Expressway
0055	Sera Jo Crop Yield Potential changes under climate change over Korean Peninsula using 1-km high resolution SSP-RCP scenarios
0056	Hiyori Takahashi Impacts of selective logging with different intensity on nutrient resorption through litterfall in Bornean tropical rainforest
0060	Hyunjin Roh Agro-meteorological Disasters Forecasting System in Nationwide
0061	Guan Xhuan Wong Long-term Trends in Methane Emissions from Tropical Peatlands on an Ecosystem Scale
0062	Wookyung Song Evaluating CO ₂ Absorption Capacity among different family of Quercus acuta and Q. glauca through Morphological and Physiological traits
0063	Sanghee Park Comparisons of physiological characteristics of Fraxinus rhynchophylla after transplantation in response to different levels of drought stress hardening
0066	Ronglei Zhou Global Assessment of Cumulative and Time-lag Effects of Drought on Land Surface Phenology with Satellite Observation
0067	Takafumi Miyama Isoprene emission characteristics of Quercus serrata damaged by diseases
0068	Motoi Yamada Seven-year variability in methane release from a shallow eutrophic lake in Japan

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Poster Session

0070	Akiko Hirata Estimation of CO ₂ emissions through decomposition of dead wood caused by pine wilt disease
0075	Thi Tra My Lang Effects of subsurface irrigation on greenhouse gas emissions from intensively managed grassland on bog peat soil
0077	Munseon Beak Changes in Terrestrial Carbon Cycle in Asia Using a Process-based Model and a Data-Driven Model
0079	Yang Chun Jet Responses of Methanogenesis in Eutrophic Lake Sediment to Different Autochthonous Organic Matter Additions
0082	Jutamas Merasanud Monitoring the dynamic of CO ₂ and CH ₄ flux of irrigated paddy field, alternate wetting and drying (AWD) method, using Eddy covariance technique
0083	Lei Jia Aerosol interference with open-path eddy covariance measurement in a lake environment
0084	Minju Baek Enhancing Climate Resilience in Vanuatu: The OSCAR Project
0085	Ana Mitcov Soil microbiome along an elevational gradient in Mt. Jiri, South Korea
0091	Ruiqi Ma Soil warming effect on the soil CO ₂ and CH ₄ fluxes in a cool-temperate forested peatland after 13-year continuous warming
0097	Kyo-Moon Shim Disaster damage reduction effect of the farmstead-specific early warning service for weather risk management in Korea
0100	Misaki Hase Monitoring seasonal variations in vegetation activity over tropical asia using Himawari-8 AHI
0102	Fiza Liaquat The potential of fungus-mediated nanoparticles in resistance of Abies koreana under drought stress
0108	Mingu Kang Difference in CO ₂ and energy exchange between rice paddy and soybean field at Gimje, Korea
0109	Jina Hur Predictability Evaluation of 1-month Predicted Temperatures
0110	Jina Hur Estimation of Rice Harvest Date using 1-month Lead Prediction
0114	Riku Fukuta Estimation of leaf area index by Himawari-8 AHI
0115	Seong Eun Lee A process-based modeling approach to simulate the growth of onion under climate change
0118	Shuli Niu Global Ecosystem Restoration and Carbon Neutrality Programme

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Poster Session

0120	Umashankar Chandrasekaran Physiological and transcriptional responses of the critically endangered <i>Abies koreana</i> to drought stress
0121	Sung-Won Choi Methane emission path analysis in rice paddies using a portable gas analyzer and automatic opening and closing chamber
0123	Seungwon Sohn On Writing a Practical Guideline of Eddy Covariance Flux Measurement for Early Career Researchers
0126	Yoshiyuki Takahashi 17 Years of Monitoring CO ₂ Flux in Japanese Larch Plantation Forests
0127	Hyun-Sug Choi Effects of Mulching Treatment on a Soil Environment and Growth of Eucalyptus Trees and the Survival Grown in a Field
0130	Hye-jin Lee Determination of crop water stress index of red pepper depending on growth period
0131	Hye-jin Lee Effect of soil water stress on growth of kimchi cabbage in spring and autumn seasons
0132	Yongseok Kim A Study on Temperature and Precipitation Estimation Using Machine Learning
0133	Yeongho Kang Research on growth correlation according to rice nutrient status based on drone images
0134	HeeJu Lee Biostimulants foliar application enhances physiological responses and improves heat tolerance in Kimchi cabbages leaves treated with high air temperature
0136	Sungsik Cho Predicting and assessing the recent dynamics of net primary productivity in South Korea using machine learning techniques based on various flux measurements
0137	Hoejeong Jeong Matrix analysis of Vegetation Indices for Non-destructive Chlorophyll content estimation
0141	Tomoki Morozumi Seasonal pattern of solar-induced chlorophyll fluorescence in three forest types observed on multiple platforms
0144	Eunjeong Yun Estimation of Insolation in Complex Terrain Considering Light-shielding Effect: Focusing on Jeolabuk-do, South Korea
0145	Sangjun Lee KoSpec: A Comprehensive Hyperspectral Measurement Network for Long-Term Ground-Based Measurements of reflectance quantities and Solar-Induced Fluorescence Across Diverse Korean Ecosystems

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Poster Session

0146	Dae-jun Kim Development of Growth Stage and Weather Risk Prediction Technology in Early Warning System for Agricultural Weather Disaster
0147	S. Okamura Temporal and spatial variations of nitrogen dioxide fluxes by eddy covariance method in an urban center, Sakai, Japan
0148	Min-Seo Kang Development of 'Namdo' Garlic Growth Model Depending on Planting Period and Mulching Material
0149	Shuai SHAO Development of a global carbon flux products based on GCOM-C SGLI data and the BESS model
0150	Juhan Park Estimation of National-Scale Forest Carbon Flux – Comparison machine learning model estimation with field inventory data
0151	Dae Gyoon Kang High-Resolution THI and CVPI Production for South Korea Using Local Climate Model
0152	Jin-Hee Kim Derivation of Future High-Resolution Agro-Climatic Maps under the SSP Scenarios for South Korea
0153	Kwang Soo Kim Development of Application Programming Interface to Extract Air Temperature From Gridded Data for Prediction of Airborne Insect Growth Stage
0156	HyunKi Kim Near-surface atmospheric cooling effect on flooded paddy field for three years in Naju, South Korea
0159	HyunKi Kim The effect of paddy water conditions on soil CO ₂ efflux using closed portable gas exchange chamber
0160	Masahito Ueyama Developing a JapanFlux database for the eddy covariance measurements from 1990 to present
0161	Minseok Kang On enhancing the compatibility between closed- and open- path gas analyzers for evapotranspiration measurements
0163	Soichi Tabata CO ₂ sorption-desorption of soil affect CO ₂ flux
0166	Yu-Ting Shih Low paddy rice CH ₄ emission level in water-efficient operation in central Taiwan
0168	Dae Gyoon Kang Development of a Frost Estimation Model Based on Weather Observations



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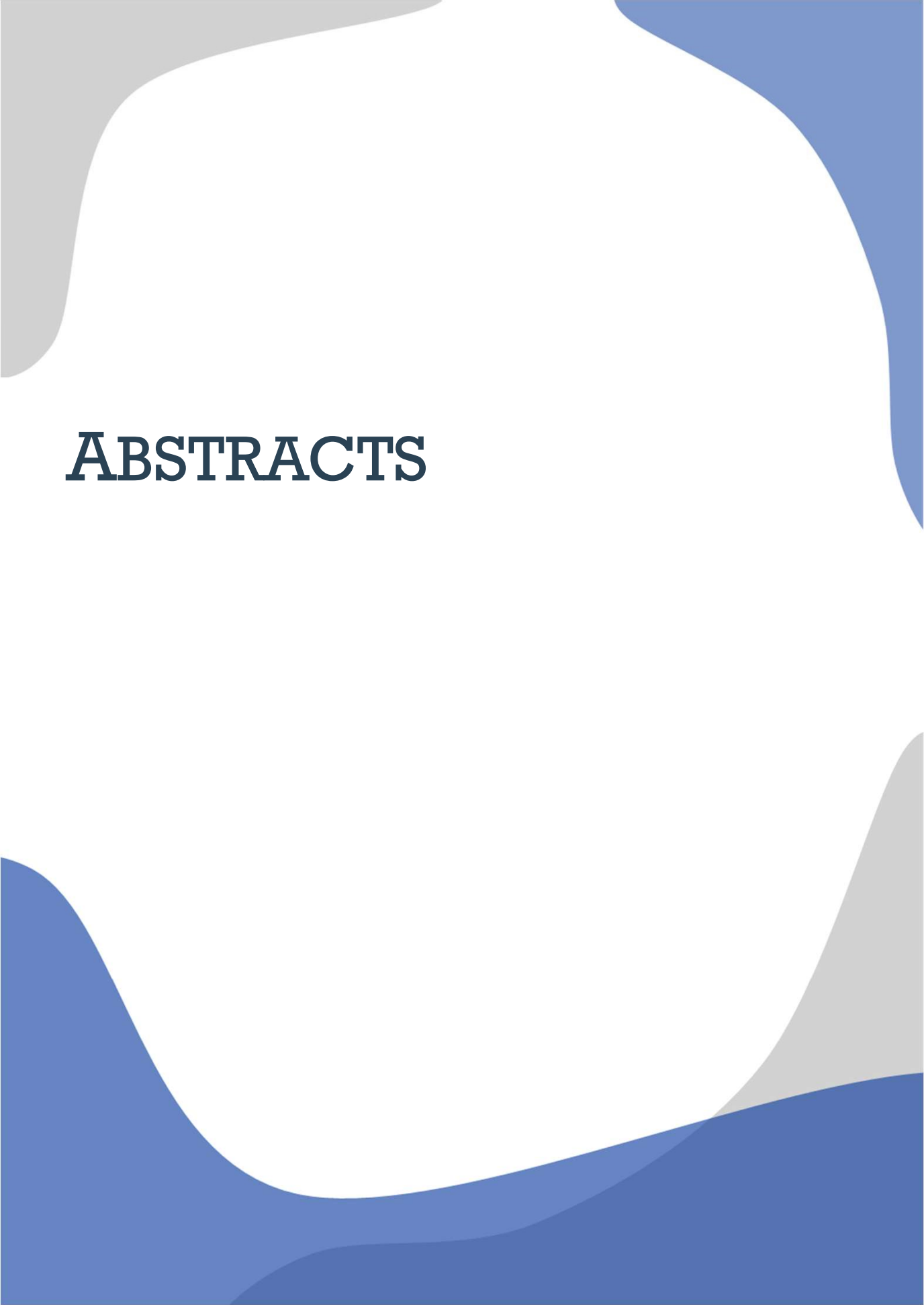
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ABSTRACTS

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"We, the organizing committee, would like to convey our heartfelt thanks to everyone for their valuable support, generous donations, guidance, and assistance in making this conference possible. We deeply appreciate your contributions."

Especially to;

ALL PLENARY AND KEYNOTE SPEAKERS

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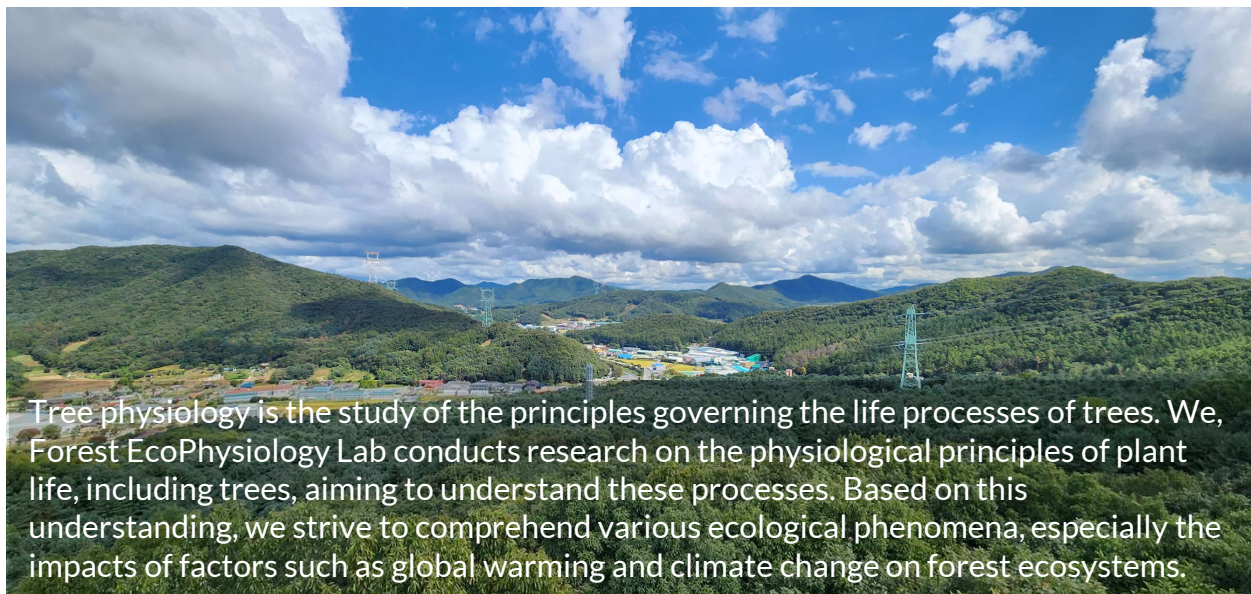
FOR THEIR PRESENCE AND SUPPORT

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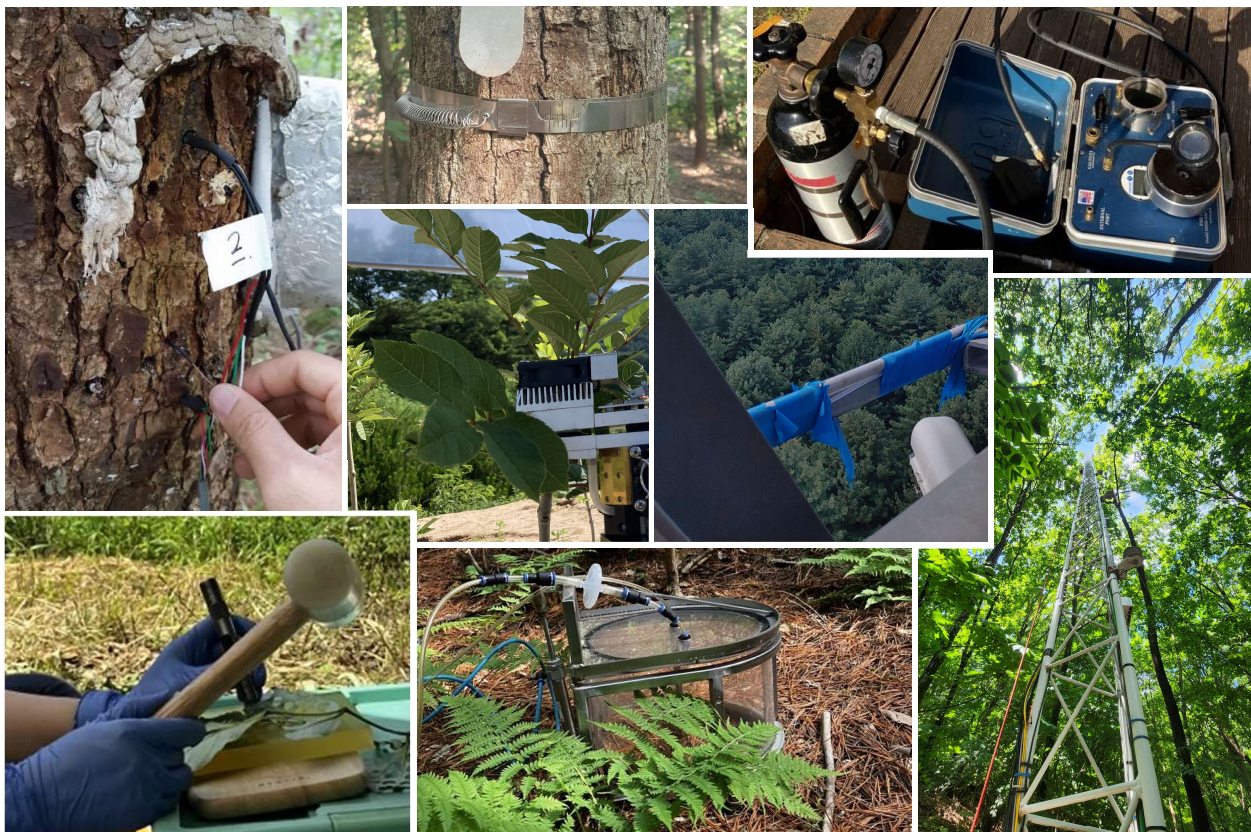
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SHAPING A SUSTAINABLE FUTURE THROUGH FOREST ECOPHYSIOLOGY: TACKLING CLIMATE CHANGE AND URBAN ENVIRONMENTAL CHALLENGES



Tree physiology is the study of the principles governing the life processes of trees. We, Forest EcoPhysiology Lab conducts research on the physiological principles of plant life, including trees, aiming to understand these processes. Based on this understanding, we strive to comprehend various ecological phenomena, especially the impacts of factors such as global warming and climate change on forest ecosystems.



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