



ISPRS-ISDE
2025
NAIROBI



JOINT ISPRS CONFERENCE 2025 ON GEO DIGITALIZATION FOR SUSTAINABLE DEVELOPMENT GOALS AND 3RD YOUTH INNOVATION FORUM ON DIGITAL EARTH CONFERENCE PROGRAM



2nd – 4th December 2025



**KCA University Main Campus
Nairobi, Kenya**

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December 1st, 2025

Pre-Conference Tutorial Day

TIME	VENUE	PROGRAM
14:00 - 15:00	Executive Board Room	Tutorial: Satellite SAR interferometry for deformation monitoring <i>Introduction to radar interferometry; Key properties of deformation measurements; Main characteristics of the European Ground Motion Services — Facilitator: Michele Crosetto</i>
15:15 - 17:00	Executive Board Room	Health Break & case discussion: Contribution of radar interferometry to SDGs — Facilitator: Michele Crosetto

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December 2nd, 2025

Opening Day — Conference

TIME	VENUE	PROGRAM
11:00 - 13:30	Block C - Main Hall	Registration
13:30	Block C - Main Hall	Arrival of Guests and Participants
14:00 - 14:05	Block C - Main Hall	Opening Prayers <i>Dean, School of Technology — Dr. Simon Mwenda, PhD</i>
14:05 - 14:10	Block C - Main Hall	Welcoming Remarks <i>Prof. Lucy Waruguru, PhD — Dean, Research, Innovation & Outreach, Conference Chair</i>
14:10 - 14:15	Block C - Main Hall	Opening Remarks & Welcoming the VC & CEO <i>Prof. Vincent Onyweru - DVC, Research, Innovation and Outreach</i>
14:15 - 14:25	Block C - Main Hall	Remarks and Welcoming the ISDE Secretary General <i>Prof. Isaiiah I.C. Wakindiki - Vice Chancellor & CEO</i>
14:25 - 14:40	Block C - Main Hall	Opening Remarks from ISDE <i>Prof. Changlin Wang — Vice President of the International Society for Digital Earth (ISDE)</i>
14:40 - 14:50	Block C - Main Hall	Opening Address — Chief Guest <i>Hon. General Nixon Kairi C.B.S — Principal Secretary, State Dept. for Lands & Physical Planning</i>
14:50 - 15:50	Block C - Main Hall	Keynote: High Accuracy Real-Time Intelligent Remote Sensing Satellite Technologies & Applications <i>Prof. Jianya Gong — Wuhan University, China</i>
15:50 - 16:50	Block C - Main Hall	Reception Cocktail & Networking (Entertainment) <i>Guests leave at leisure thereafter</i>

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December 3rd, 2025

Technical Sessions & Workshops

Conference Presentations Schedule

Session Chair: Dr. Prof. Hongchao Fan

TIME	VENUE	PROGRAM
08:50 - 09:50	Block C - Main Hall	Keynote: The potential of VGI for Geo-digitalization for Sustainable Development <i>Harnessing OpenStreetMap & GeoAI for Humanitarian Aid & Climate Action — Prof. Alexander Zipf (GIScience, Univ. of Heidelberg)</i>
09:50 - 10:10	—	Health Break

Session 01: GeoAI Foundations & Data Infrastructure

Chair: Prof. Xiaoguang Zhou | Venue: Block C - Main Hall

10:10 - 10:25	Federated Machine Learning-Based Urban Attributes Mapping using Multi-Source Urban Data Yu Junxian, Chen Xiana, Cai Zhaoyue, Tu Wei, Su Mo, Liao Jianghai, Chan Tsz Nam
10:25 - 10:40	MGIM: A Land Parcel-Scale Masked Geographic Information Model for Supporting Multiple Geo-Inference Tasks Zhang Xiang
10:40 - 10:55	Deep Noisy-Label Learning Based Cross-Resolution Land-Cover Mapping in Kenya Liu Yinhe, Wu Yingxin, Karanja Faith, Xu Xian, Boitt Mark K., Yang Ruiyi, Pellikka Petri, Zhong Yanfei
10:55 - 11:10	Intelligent perception and cognition of scene awareness with quadruped bionic robotics Chun Liu
11:10 - 11:25	Large-scale Point Cloud Semantic Segmentation Based on Open Vocabulary Chen Yiping, Wang Chaolei
11:25 - 11:40	Supervision Refinement and Patch-Wise Constraints for Accurate Ground-to-Satellite Localization in GNSS-Denied Environments Zhang Yongjun, Xia Panwang, Wu Qiong, Zheng Zhi, Wan Yi
11:40 - 11:55	Global Mapping Using Crowd (Open) Source Geographic Data Zhou Xiaoguang, Chen Nuo, Wang Lan, Hou Dongyang, Zhou Jiaxiang

12:00 - 13:30 | Lunch Break

Session 02: Atmosphere, Emissions & Exposure

Chair: Prof. Hui Yang | Venue: TC 4:14

Session 03: Agriculture, Hydrology, Ecosystems & Carbon

Chair: Prof. Qiming Zhou | Venue: PhD Lecturer Room

13:30 - 13:45	Assessing Large-Scale Healthcare Resource Accessibility Using Remote Sensing and Geospatial Analysis Hu Ling, Hochschild Volker, Neidhardt Harald	13:30 - 13:45	Remote Sensing & GIS Assessment of Evapotranspiration & Crop Water Productivity Khan Salman, Shaikh Furqan Ali, Al Marri Nadia
13:45 - 14:00	Dynamism of Particulate Matter (PM2.5) Air Quality in Africa using street view images and MERRA-2 Ouma Yashon, Odirile Phillimon	13:45 - 14:00	Towards mapping biophysical properties using Hyperspectral Data & PROSAIL Sibiya Bongokuhle
14:00 - 14:15	Revealing Methane Emissions from Mining through Remote Sensing Xu Xian, Liu Yinhe, Wu Yingxin, Zhong Yanfei	14:00 - 14:15	Heterogeneous Evolution of Water Balance Components in Central Asia Zhou Qiming
14:15 - 14:30	Enhancing Air Quality Monitoring with GeoAI Wei Jing	14:15 - 14:30	UAV Air-Ground Joint Detection & Quantity Statistics for Wildlife Sui Haigang
14:30 - 14:45	Mobile Phone Data-Derived Inhaled Air Pollution during Walking Chen Siran, Liu Chuang, Zhang Xianghui, Cheng Tao	14:30 - 14:45	Tree species classification from close-range drone RGB images: What can phenology contribute Xinlian Liang
14:45 - 15:00	HIGTS: High-temporal-resolution human thermal stress metrics Jian Hongdeng, Yan Zhenzhen, Fan Xiangtao, Zhan Qin, Xu Chen, Huang Mingrui, Bei Weijia, Xu Jianhao	14:45 - 15:00	Investigating Impact of Anthropogenic & Environmental Pressures on Forest Dynamics Musungu Kevin, Ndlovu Mgqabi
15:00 - 15:15	Mapping and assessing urban flood risk under climate change Sun Qinke, Zhou Liang, Dong Yong, Yang Xianglong, Zhang Yabin	15:00 - 15:15	Knowledge-Guided Deep Learning Predicts Weaker Future Land Carbon Sink Wu Zherong

15:20 - 15:50 | Coffee Break

Session 04: Urban Intelligence, Mobility, & Microclimate

Chair: Prof. Tao Cheng | Venue: PhD Lecture Room

Session 05: Urban Sensing and Intelligent Governance

Chair: Dr. Simon Mwenda | Venue: TC 4:14

15:50 - 16:05	Geo-Digitalization & Urban Intelligence: Transforming Smart City Development Chimhowa Tinokunda Natalia	15:50 - 16:05	High Spatio-Temporal Resolution Estimation of XCO2 Observations using Spatial Feature Fusion Hui Yang, Yu Bailang, Wang Congxiao, Dong Linxin
16:05 - 16:20	Mapping & analyzing allergenic risk zones of Plane trees using street view images Zhou Yang, Xiao Rui, Tu Wei	16:05 - 16:20	How urban street-scape visual features influence carbon emissions from residents visiting urban parks Zhang Wenting, He Sanwei, Zeng Chen, Liu Shishi
16:20 - 16:35	Attractiveness Analysis for Urban Commercial Districts via Mobile Positioning Flow Data Lo Cho-Ho, Fang Sunkangning, Gui Zhipeng, Li Mei, Peng Dehua, Chen Huan, Liu Yuhang, Wu Huoyi	16:20 - 16:35	Geo-Fencing Model for Monitoring Physical Class Attendance in Multiple Geographical Locations Ombaye Erick, Mwenda Simon
16:35 - 16:50	Mapping & Analysing Traffic Congestion in New Delhi using Social Media Data Shahzad Zoheen, Arshad Ramsha, Ali Saif	16:35 - 16:50	Crisis as Catalyst: Mobility Inequities in a Changing Urban World Yuen Yihong

B) Day 2 Workshops Schedule (10:10 - 13:00)

Session01: Next-Gen Disaster Management: Multi-Modal Geospatial Data & AI for Resilient Communities

Venue: TC 4:13

Time: 10:10 - 13:00

Topics: Risk mapping; Prediction & early warning; Post-disaster damage detection; Urban exposure analysis; Forced displacement mapping; Causal inference; Generative AI; XAI; Operational platforms

Facilitators:
Dr. Yao Sun - Earth Observation Center- German Aerospace Center (DLR);
Dr. Yu Li - Environmental Research and Innovation - Luxembourg Institute of Science and Technology (LIST)

Gala Dinner

18:30 - 22:00 | Safari Park Hotel & Casino

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December 4th, 2025

Final Day — Presentations, Workshops & Closing

Conference Presentations Schedule

Session Chair: Dr. Xuke Hu

TIME	VENUE	PROGRAM
08:50 - 09:50	Block C - Main Hall	Keynote: A modern land administration system for SDGs in African countries <i>Emmanuel Nkurunziza</i>
09:50 - 10:10	—	Health Break

Session 06: Land Cover, Land Use & Change

Chair: Prof. Ouma Yashon | Venue: Block C - Main Hall

10:10 - 10:25	Land-Use/Land-Cover Change Prediction using CNN-LSTM & CA-Markov Ouma Yashon
10:25 - 10:40	Forecasting LULC Transformations with Geospatial Intelligence Mahmood Syed Amer
10:40 - 10:55	Analysing Surface Dynamics & Polynomial Trend Patterns (HKH case) Faroq Shaiza, Mahmood Syed Amer
10:55 - 11:10	Mamba-LCD: Urban Change Detection in Low-Light RS Images Fu Youran, Wu Zherong, Lu Xudong, Li Hongsheng, Ma Peifeng
11:10 - 11:25	Large-Scale Greenhouse Extraction & Agricultural Analysis in Africa Ding Jingyi, Ma Ailiang, Zhong Yanfei, Liu Yinhe
11:25 - 11:40	Mapping Eucalyptus Invasion in a Catchment Phinzi Kwanele
11:40 - 11:55	Multiple Spatial Impacts of Gradient Expansion of Mountainous Cities Zhou Liang, Dong Yong, Chen Lu, Sun Qinke

12:50 - 13:30 | Lunch Break

Session 07: 3D, Digital Twins & Deformation

Chair: Wainaina Chege Martin | Venue: TC4:14

13:30 - 13:45	Buddhist Face Segmentation with 3D Point Clouds Pan Yuehan, Luo Junqi, Kong Gefei, Fan Hongchao
13:45 - 14:00	Exploring Our Planet from Space: Google Earth Engine for learners Wainaina Chege Martin, Njore Catherine, Thuku Peter
14:00 - 14:15	AI to Construct the Metaverse of South China Sea Marine Scientific Investigation Xu Chao
14:15 - 14:30	Spatial Assessment of Solar Radiation Energy in 3D City Modeling (Yeka Sub-city) Wondatir Melese

14:30 - 15:00 | Coffee Break

Session 08: SDG Metrics, Monitoring & Governance

Chair: Dr. Crosetto Michele | Venue: Block C - Main Hall

Session 09: Geospatial Solutions for Sustainable Resource Management

Chair: Prof. Guoqing Zhou | Venue: PhD Lecture Room

15:00 - 15:15	Remote sensing activities to support the SDGs Crosetto Michele, Monserrat Oriol, Olea-Encina Paula, Ramlie Maria Carmelia	15:00 - 15:15	Assessing Urban Facade Solar Potential Using CityGML LOD3 Wang Yuefeng, Liao Nuo, Zhou Guoqing
15:15 - 15:30	Construction of Multi-Scale SDG Indicators in West Africa Wang Jingru, Liu Dong	15:15 - 15:30	CropSmart Digital Twin: Climate-Smart Cropping Decision Making Di Liping
15:30 - 15:45	A Big Data-Powered Rapid Assessment System for Multi-Scale Monitoring Yu Dandan	15:30 - 15:45	Complex Temporal & Spatial Characteristics of Vertical Surface Deformation Li Langping
15:45 - 16:00	Impact of AI on the Energy Transition: Evidence from Chinese Cities Xu Juan, Yu Chen, Nan Yang, Shuai Shao	15:45 - 16:00	Erosion Prediction Model in Sokoto State, Nigeria Eniolorunda Nathaniel Bayode, Gada Murtala Abubakar, Abubakar Sheikh

B) Day 3 Workshops Schedule (14:10 - 16:00)

Workshop: Mapping Urban Resilience through Drone & OpenStreetMap

Venue: SoB Board Room

Time: 14:10 - 16:00

Topics: Create aerial imagery & use OpenAerialMap.org.; Introduction to mapping & tagging in OpenStreetMap

Facilitator: Danijel Schorlemmer

Workshop (Outdoor mapping)

Venue: SoB Board Room & Mathare Area 4

Topics: On-site mapping to capture building properties not visible on aerial imagery; 3D building data generation (Android required)

Facilitator: Danijel Schorlemmer

Workshop: Artificial Intelligence for Epidemic Control

Venue: TC 4:13

Topic: Human Behavior Modeling for Epidemic Response using AI Tools

Facilitator: Dr. Luo Weiv

Closing Ceremony

16:00 - 16:30 | Awarding & Closing Ceremony

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December 5th, 2025

Additional Workshop Day

Session 03 Workshop: Mapping Urban Resilience through Drone and OpenStreetMap Technologies - (Practical)

Practical Mapping & 3D Building Data Generation

Venue: Block C - Main Hall

Time: 10:00 - 12:00

Topics: On-site mapping to capture building properties (occupancy, height, structure) — Android smartphone required; 3D building data generation

Facilitator: Danijel Schorlemmer

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地球信息科学学报
Journal of Geo-information Science



GEO-SPATIAL
Information Science

ISSN 1009-5020



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