



**ISPRS-ISDE  
2025**

NAIROBI



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



2<sup>nd</sup> – 4<sup>th</sup> December 2025



KCA University Main Campus  
Nairobi, Kenya

## December 1st, 2025

### 0 Pre-Conference Tutorial Day

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

## December 2nd, 2025

### 1 Opening Day — Conference

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

## December 3rd, 2025

### 2 Technical Sessions & Workshops

Conference Presentations Schedule		
<b>Session Chair:</b> Dr. Prof. Hongchao Fan		
TIME	VENUE	PROGRAM
08:50 - 09:50	Block C - Main Hall	<b>Keynote: The potential of VGI for Geo-digitalization for Sustainable Development</b> Harnessing OpenStreetMap & GeoAI for Humanitarian Aid & Climate Action — Prof. Alexander Zipf (GIScience, Univ. of Heidelberg)
09:50 - 10:10	—	<b>Health Break</b>
<b>Session 01: GeoAI Foundations &amp; Data Infrastructure</b>		
<b>Chair:</b> Prof. Xiaoguang Zhou   <b>Venue:</b> Block C - Main Hall		
10:10 - 10:25	—	Federated Machine Learning-Based Urban Attributes Mapping using Multi-Source Urban Data Yu Junxian, Chen Xian, 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-Lab Learning Based Cross-Resolution Land-Cover Mapping in Kenya Liu Yinhe, Wu Yingxin, Karanja Faith, Xu Xian, Boitt Mark K, Yang Rui, Pelikka 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		
<b>Session 02: Atmosphere, Emissions &amp; Exposure</b>		
<b>Chair:</b> Prof. Hui Yang   <b>Venue:</b> TC 4:14		
13:30 - 13:45	—	Assessing Large-Scale Healthcare Resource Accessibility Using Remote Sensing and Geospatial Analysis Hu Ling, Hochschild Volker, Neidhardt Harald
13:45 - 14:00	—	Dynamism of Particulate Matter (PM2.5) Air Quality in Africa using CAMS and MERRA-2 Ouma Yashon, Odile Phillemon
14:00 - 14:15	—	Revealing Methane Emissions from Mining through Remote Sensing Xu Xian, Liu Yinhe, Wu Yingxin, Zhong Yanfei
14:15 - 14:30	—	Enhancing Air Quality Monitoring with GeoAI Wei Jing
14:30 - 14:45	—	Mobile Phone Data-Derived Inhaled Air Pollution during Walking Chen Siran, Liu Chuang, Zhang Xianghui, Cheng Tao
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
15:00 - 15:15	—	Mapping and assessing urban flood risk under climate change Sun Qinken, Zhou Liang, Dong Yong, Yang Xianglong, Zhang Yabin
13:30 - 13:45   Remote Sensing & GIS Assessment of Evapotranspiration & Crop Water Productivity		
Chair: Prof. Khan Salman, Shaikh Furqan Ali, Marri Nadiia		
13:45 - 14:00	—	Towards mapping biophysical properties using Hyperspectral Data & PROSAIL Sibuya Bongokuhle
14:00 - 14:15	—	Heterogeneous Evolution of Water Balance Components in Central Asia Zhou Qiming
14:15 - 14:30	—	UAV Air-Ground Joint Detection & Quantity Statistics for Wildlife Sui Haigang
14:30 - 14:45	—	Tree species classification from close-range drone RGB images: What can phenology contribute Xinlian Liang
14:45 - 15:00	—	Investigating Impact of Anthropogenic & Environmental Pressures on Forest Dynamics Musungu Kevin, Ndlovu Mnqobi
15:00 - 15:15	—	Knowledge-Guided Deep Learning Predicts Weaker Future Land Carbon Sink Wu Zherong
14:30 - 15:00   Coffee Break		
<b>Session 04: Urban Intelligence, Mobility, &amp; Microclimate</b>		
<b>Chair:</b> Prof. Tao Cheng   <b>Venue:</b> PhD Lecture Room		
15:50 - 16:05	—	Geo-Digitalization & Urban Intelligence: Transforming Smart City Development Chimhawa Tinakuda Natalia
16:05 - 16:20	—	Mapping & analyzing allergenic risk zones of Plane trees using street view images Zhou Yang, Xiao Liu, Tu Wei
16:20 - 16:35	—	Attractiveness Analysis for Urban Commercial Districts via Mobile Positioning Flow Data Lo Chao-Ho, Fang Sunkang, Gui Zhipeng, Li Mei, Peng Dehuai, Chen Huan, Liu Yuhang, Wu Huayi
16:35 - 16:50	—	Mapping & Analyzing Traffic Congestion in New Delhi using Social Media Data Shahzad Zabeen, Arshad Ramsha, Ali Saif
15:50 - 16:05   High Spatio-Temporal Resolution Estimation of XCO2 Observations using Spatial Feature Fusion		
Chair: Prof. Hui Yang, Bailang Wang, Congxiao, Dong Linxin		
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	—	Geo-Fencing Model for Monitoring Physical Class Attendance in Multiple Geographical Locations Omboye Erick, Mwendia Simon
16:35 - 16:50	—	Crisis as Catalyst: Mobility Inequities in a Changing Urban World Yuan Yihong
15:20 - 15:50   Coffee Break		
<b>Session 05: Urban Sensing and Intelligent Governance</b>		
<b>Chair:</b> Dr. Simon Mwendia   <b>Venue:</b> TC 4:14		
15:50 - 16:05	—	High Spatio-Temporal Resolution Estimation of XCO2 Observations using Spatial Feature Fusion
16:05 - 16:20	—	How urban street-scape visual features influence carbon emissions from residents visiting urban parks
16:20 - 16:35	—	Geo-Fencing Model for Monitoring Physical Class Attendance in Multiple Geographical Locations
16:35 - 16:50	—	Crisis as Catalyst: Mobility Inequities in a Changing Urban World
15:20 - 15:50   Coffee Break		

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

<b>Session 01: Next-Gen Disaster Management: Multi-Modal Geospatial Data &amp; AI for Resilient Communities</b>		
<b>Chair:</b> Prof. TC 4:13		
Time: 10:10 - 13:00	Venue: Block C - Main Hall	Topics: Risk mapping; Prediction & early warning; Post-disaster damage detection; Urban exposure analysis; Forced displacement mapping; Causal inference; Generative AI; 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)	
13:30 - 13:45   Assessing Urban Facade Solar Potential Using CityGML		
Chair: Prof. Emmanuel Nkurunziza		
13:45 - 14:00	—	Wang Yuqiang, Liang Nuo, Zhou Guoping, Zhou Guoping
14:00 - 14:15	—	Complex Temporal & Spatial Characteristics of Vertical Li Liangping
14:15 - 14:30	—	Erosion Prediction Model in Sokoto State, Nigeria
14:30 - 14:45	—	Abubakar Sheik
15:20 - 15:50   Coffee Break		

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

<b>Session 02: Land Cover, Land Use &amp; Change</b>		
<b>Chair:</b> Prof. Ouma Yashon   <b>Venue:</b> Block C - Main Hall		
10:10 - 10:25	—	Land-Use/Land-Cover Change Prediction using CNN-LSTM & CA-Markov
10:25 - 10:40	—	Forecasting LULC Transformations with Geospatial Intelligence
10:40 - 10:55	—	Analysing Surface Dynamics & Polynomial Trend Patterns (Khartoum case)
10:55 - 11:10	—	Fu Manbo, Wu Zhong, Lu Xudong, Li Hongsheng, Ma Peifeng
11:10 - 11:25	—	Large-Scale Greenhouse Extraction and Agricultural Analysis in Africa
11:25 - 11:40	—	Ding Jingyi, Ma Ailiang, Zhang Yantai, Liu Yinchu
11:40 - 11:55	—	Mapping Eucalyptus Invasion in a Catchment
11:55 - 12:10	—	Zhou Liang, Dong Yong, Chen Lu, Sun Qinken
13:30 - 13:45   Remote Sensing & GIS Assessment of Evapotranspiration & Crop Water Productivity		
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14:45 - 15:00	—	Investigating Impact of Anthropogenic & Environmental Pressures on Forest Dynamics
15:00 - 15:15	—	Knowledge-Guided Deep Learning Predicts Weaker Future Land Carbon Sink
15:20 - 15:50   Coffee Break		

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

<b>Session 03: Mapping Urban Resilience through Drone and OpenStreetMap Technologies - Practical 03</b>		
<b>Chair:</b> Prof. Michele Crosetto   <b>Venue:</b> Block C - Main Hall		
15:00 - 15:15	—	Remote sensing activities to support the SDGs
15:15 - 15:30	—	Construction of Multi-Scale SDG Indicators in West Africa
15:30 - 15:45	—	A Big Data-Powered Rapid Assessment System for Multi-Scale Monitoring
15:45 - 16:00	—	Impact of AI on the Energy Transition: Evidence from Chinese Cities
15:20 - 15:35   Assessing Urban Facade Solar Potential Using CityGML		
Chair: Prof. Emmanuel Nkurunziza		
15:35 - 15:50	—	Wang Yuqiang, Liang Nuo, Zhou Guoping
15:50 - 16:05	—	Complex Temporal & Spatial Characteristics of Vertical Li Liangping
16:05 - 16:20	—	Erosion Prediction Model in Sokoto State, Nigeria
16:20 - 16:35	—	Abubakar Sheik
15:20 - 15:50   Coffee Break		

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