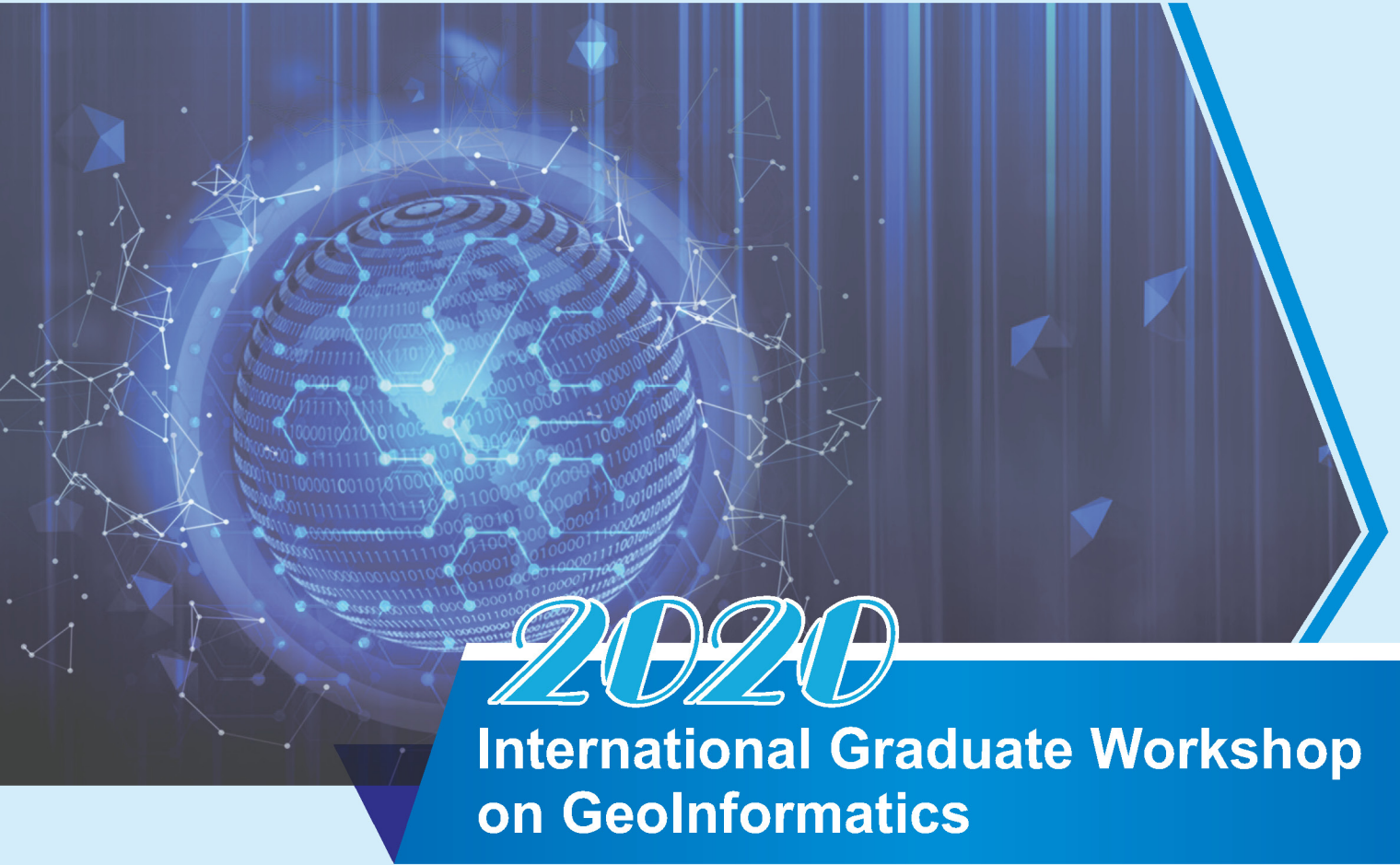




INTERNATIONAL
GRADUATE WORKSHOP ON GEOINFORMATICS



2020

International Graduate Workshop
on Geoinformatics

IGWG 2020 Online

December 16–18, 2020



武汉大学
WUHAN UNIVERSITY



北京大学
PEKING UNIVERSITY



THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

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Acknowledgement

The 2020 International Graduate Workshop on GeoInformatics (IGWG2020) was co-organized by Wuhan University, Peking University and The Hong Kong Polytechnic University. Thank you all for the invaluable support. We would like to convey our special thanks to :

- Academic Communities: State Key Laboratory of Information Engineering in Survey, Mapping and Remote Sensing (Wuhan University), Institute of Remote Sensing and Geographic Information System (Peking University), Department of Land Surveying and Geo-Informatics (The Hong Kong Polytechnic University), Joint International Research Laboratory of GeoInformatics (Ministry of Education)
- The members of Organizing Committee of IGWG2020
- Advisors, reviewers and volunteers
- Graduate Student Union of State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan university
GeoScience Café, Wuhan university
Graduate Student Union of Geographical Science Faculty, BNU
Graduate Union of School of Remote Sensing Information Engineering, Wuhan university
Graduate Association of School of Geodesy and Geomatics, Wuhan university
Graduate Association of Department of Earth System Science, Tsinghua University
Graduate Association of College of urban and environmental sciences, Peking University
Huazhong University of Science and Technology College of Public Administration
Postgraduate Union
Graduate Student Union of Geographical Science Faculty, BNU
Graduate Students Union of College of Surveying and Geo-Informatics, Tongji University
Graduate Student Union of Geographic Science, East China Normal University
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School of Resources and Environmental Sciences Graduate Association, Wuhan university
Graduate Union of Faculty of Geographic and information Engineering, China University of Geosciences
Graduate Student Union of the college of Urban&Environmental Sciences, CCNU

State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (Wuhan University)

www.lmars.whu.edu.cn

The State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University, was founded in 1989, and the first state key laboratory in the field of surveying and mapping in China. In evaluations conducted by the Ministry of Science and Technology, LIESMARS was consecutively ranked Excellent in 2000, 2005, 2010 and 2015, and was presented with the Golden Bull Award in 2004.

The director of LIESMARS is Prof. Chen Ruizhi. The chairman of the academic committee of LIESMARS is Prof. Li Deren, who is an academican of the Chinese Academy of Sciences and the Chinese Academy of Engineering.

The laboratory follows the principle of a modest scale of development. According to the needs of disciplinary development, it expands research directions and continuously introduces high-level talents. There are 121 permanent personnel in LIESMARS, including 106 researchers. Among them, there are three academicians of the Chinese Academy of Sciences and Engineering, 80 professors, 21 associate professors, 105 doctoral students, and 64 young and middle-aged technological personnel under the age of 45.

The current research institutes are: Research Institute of Aerial and Space Photography; Research Institute of Remote Sensing Information Processing; Research Institute of Geospatial Information Systems and Services; Research Institute of 3S Integration and Network Communication; Research Institute of Navigation and Location-based Services.

In accordance with the requirements of the "national team" in the relevant field, following the tenet of "opening, flowing, uniting, and competition" for national key laboratories, LIESMARS is united, hard-working, innovative, and enterprising. LIESMARS has become one of the centers for fundamental theoretical research and applied basic research in the field of mapping and remote sensing in China and the world with dynamic academic ideas, remarkable scientific research, a complete independent innovation system, and extensive academic exchanges,. Great achievements have been made in scientific research, team building, personnel training, transformation of high technology achievements, and external academic exchanges.

Institute of Remote Sensing and Geographic Information System (Peking University)

<http://irsgis.pku.edu.cn/>

The Institute of Remote Sensing and Geographic Information System (IRSGIS), Peking University, is one of the earliest departments in China dedicating to research and teaching of spatial information science and technology. Aiming at the fundamental research, technology innovations, application developments, and innovation-driven education, IRSGIS has gradually developed into an important base for educating geospatial talents and fostering scientific research both domestically and internationally. Approved by the State Education Commission of China, the Institute of Remote Sensing Technology and Application was established in 1983, and renamed as the Institute of Remote Sensing and GIS, Peking University, in 1994. In 2001, IRSGIS was merged with the GIS

major of the Department of City and Environment to admit undergraduate students majored in GIS, and became a part of the School of Earth and Space Sciences, Peking University. In the same year, Beijing Key Lab of Spatial Information Integration and 3S Application (Peking University) was established. In 2004, the Institute of Digital China was established by Peking University and managed by IRSGIS. Other units affiliated to IRSGIS include the Technical Training Department of National Remote Sensing Center (1981), the University Joint Research Center for Remote Sensing, Ministry of Education (1985), the Engineering Research Center of Earth Observation and Navigation, Ministry of Education (2007), and the Engineering Research Center for Fundamental Geographic Information Software and Application, National Administration of Surveying, Mapping and Geoinformation of China (2013).

IRSGIS aims at educating students in spatial information science and technology to equip with specialty knowledge and creativity. Bachelor's degree is Geographical Information Science. Master and Ph.D.'s degree is Cartography and GIS, Photogrammetry and Remote Sensing. There are 2 postdoctoral research center, Cartography and GIS (Geography) and Science and Technology of Surveying and Mapping. The career prospects for the graduates include research and teaching in colleges and universities, technology development and management in governments, research institutes, and IT companies in information and communication, urban and regional planning, land and resources, environment, transportation, traveling, aeronautics and astronautics, public security, military, ocean, water resources, and surveying and mapping.

Department of Land Surveying and Geo-Informatics (The Hong Kong Polytechnic University)

<http://www.lsgi.polyu.edu.hk/home/index.asp>

Established in 1984, the Department of Land Surveying and Geo-Informatics, Faculty of Construction and Environment, The Hong Kong Polytechnic University, is the only academic unit amongst tertiary institutions in Hong Kong offering a range of programs and research opportunities in the fields of Land Surveying & Geo-Informatics.

Urban Informatics for Smart Cities is the strategic research area of the department, which has three directions: Spatial Big Data Modeling and Analytics, Smart Positioning and Navigation and Urban Sensing and Measurement. The key technologies of the department include land surveying, remote sensing, geographic information science and systems, satellite positioning, and underground utility imaging and diagnosis.

We focus on acquisition, modeling, analysis, and management of spatially referenced data in a wide range of applications. The Department has close links with both international and local academic institutions and the professions. Links with local and overseas professional communities are maintained through our community service and consultancy activities, hence our courses and research are oriented towards the specific needs of Hong Kong, as well as the global market.

In addition to highly respected research achievements, the Department is dedicated to offering a full range of geomatics programs. These include Higher Diplomas, Bachelor of Science, Master of Science, and up to PhD. These programs are accredited by both local and regional professional institutions, including HKIS, RICS, HKIE, and HKIES.

Joint International Research Laboratory of GeoInformatics (Ministry of Education)

<http://www.lmars.whu.edu.cn/geojrl/>

The Joint International Research Laboratory of GeoInformatics (JIRLG) is a joint organization, based on WHU-TUD JRC, dedicated to scientific research and technological development in Geospatial Information Science & Technology. It not only allies GeoInformatics talent at Wuhan University, but also attracts various collaborations with universities and research institutes internationally well-known for GeoInformatics. The Establishment and Construction of JIRLG was approved by the Ministry of Education on October 16, 2015. The mission of JIRLG is to conduct joint international research and enhance cross-border academic transmission and exchanges on GeoInformatics including Geospatial Information, Remote Sensing, Geodesy, and GNSS, etc.

Organizing Committee

- **Honorary Chairman**

Prof. Li Deren, Academician of Chinese Academy of Sciences and Chinese Academy of Engineering, Wuhan University

Prof. Gong Jianya, Academician of Chinese Academy of Sciences, Wuhan University

- **Chairman**

Prof. Chen Ruizhi, Director of State Key Laboratory of Information Engineering in Survey, Mapping and Remote Sensing, Wuhan University

Prof. Li Peijun, Chairman of CPC of School of Earth and Space Sciences, Peking University

Prof. Shi Wenzhong, Head of Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University

Prof. Wu Huayi, Vice Director of State Key Laboratory of Information Engineering in Survey, Mapping and Remote Sensing, Wuhan University

- **Committee Member**

Dr. Tu Zhigang, Dr. Li Xi, Dr. Ma Yingying, Dr. Yang Bo, Dr. Ye Mao, Dr. Zhang Xiang, Dr. Ren Huazhong, Dr. Qin Jianqi, Dr. Zhu Xiaolin, Dr. Liu Xintao, Dr. Huang Zhou, Guan Lin, Li Mei, Cai Jiaying, He Jinglin

Keynote Speaker



>> **Prof. SHI Wenzhong, John**

Subject of the presentation:

Urban Informatics

19:16-20:00, Dec 16, 2020
(Beijing Time, UTC+8)



Live: <http://live.bilibili.com/10951964>

Prof J Shi is Academician of International Eurasian Academy of Sciences, Otto Poon Charitable Foundation Professor in Urban Informatics, Chair Professor in GISci and remote sensing, Director of PolyU-Shenzhen Technology and Innovation Research Institute (Futian), Director of Smart Cities Research Institute, Head of Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University. Prof Shi obtained his doctoral degree from University of Osnabrück in Vechta, Germany in 1994. He is Fellow of Royal Institution of Chartered Surveyors and Hong Kong Institute of Surveyors.

Prof Shi's current research interests include urban informatics for Smart Cities, GISci and remote sensing, intelligent analytics and quality control for spatial big data, artificial-intelligence-based object extraction and change detection from satellite imagery, and mobile mapping and 3-D modeling based on LiDAR and remote sensing imagery. He has published more than 250 research articles that are indexed by Science Citation Index (SCI) and 15 books.

Advisor Information



>> **Prof. LIU Jingbin** (born in 1979) is a Professor of Navigation and Positioning with State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS) in Wuhan University, and he is also the Head of the Department of Navigation and LBS in LIESMARS. He received his Ph.D. degree in 2008 from Wuhan University. His current research interests include multi-sensors integrated positioning, smartphone based indoor navigation, LiDAR and images based global localization, and GNSS positioning technology. He is one of authors on about 100 papers, with about 2500 citations. He has also been granted six patents in China, USA and Finland.

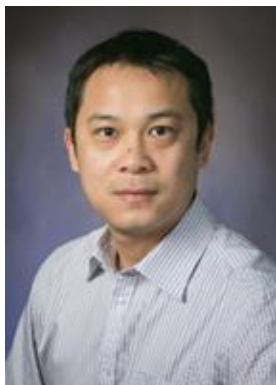


>> **Prof. ZHUANG Yuan** is a professor at State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, China. He received a bachelor degree in information engineering from Southeast University, Nanjing, China, in 2008, a Master`s degree in microelectronics and solid-state electronics from Southeast University, Na[n]jing, China, in 2011, and awarded a Ph.D. degree in geomantic engineering from the University of Calgary, Canada, in 2015. His current research interests include multi-sensors integration, real-time location system, personal navigation system, wireless positioning, Internet of Things (IoT), and machine learning for navigation applications. To date, he has co-authored over 70 academic papers and 11 patents and has received over 10 academic awards. He is an associate editor of IEEE Access, the guest editor of the IEEE Internet of Things Journal, Satellite Navigation, and IEEE Access, and a reviewer of over 10 IEEE journals.



>> **Prof. CHEN Min** is the Vice Director of Key Lab of Virtual Geographic Environment (Ministry of Education of PRC), Nanjing Normal University. His research interests are geographic modeling and simulation. He is the group leader of the Open Geographic Modeling and Simulation System (OpenGMS, <https://geomodeling.njnu.edu.cn/>) team. He is the PI of National Talent Plan for Young Scholars of China, PI of NSF for Excellent Young Scholars of China, Distinguished professor of Jiangsu province, group leader of Innovative and

entrepreneurial talent group of Jiangsu Province, the Innovative personality of Jiangsu province. He is the executive editor of *Annals of GIS*, an editor of *Environmental Modeling & Software*. He also serves as the Vice-President of iEMSs, Chair of Modeling Geographic System Committee of IGU, Co-Chair of Education and Capacity Building for Digital Earth committee of ISDE, Chair of Exploring interoperability of open modeling platforms Initiative in CSDMS, Chair of Young Scientist Working Group in AGA. He is a Fellow of International Environmental Modeling and Software Society. He has won the “Waldo Tobler Young Researcher Award” in GIScience awarded by Austrian Academy of Sciences, 1 First Prize and 1 Second Prize in Natural Science awarded by the Ministry of Education of China, 1 Second Prize in Natural Science awarded by Jiangxi Province, 1 Second Prize in Natural Science awarded by the Education department of Jiangsu province, the 6th university innovative personality in GIS in China, the Youth Science and Technology Award of Jiangsu Province, the Youth science and technology award in the Geographical Society of China. Dr. Chen has published 120+ journal papers.



>> **Dr. QIN Jianqi** is an associate professor in the School of Earth and Space Sciences at Peking University, specializing in remote sensing and space science, and atmospheric and space electricity. His recent research interests include remote sensing of the upper atmospheres of terrestrial planets (particularly Earth and Mars); Radiative transfer theory, model development, and data analysis related to satellite far ultraviolet remote sensing; Ionospheric effects of thunderstorm activity; and theory of streamer discharges, etc. He received his PhD in Electrical Engineering from the Pennsylvania State University in 2013. Prior to joining Peking University in 2019, he worked as a research scientist in the Department of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign.



>> **Dr. MA Yingying** is currently an associate professor and doctoral supervisor in the LISMARS, Wuhan University. She is doing research in the fields of aerosol physical parameters inversion, and their regional characteristic analysis. Furthermore, she works on the radiation calibration method, anthropogenic aerosol sources, and influence on radiative forcing. She interests in Atmospheric Remote Sensing, Climate Change and Information Science. She has published more than 40 SCI journal papers as the first or corresponding authors. She

serves as the reviewer of Geophysical Research Letters, Journal of Geophysical Research Atmosphere, Atmospheric Environment and so on.

Email: yym863@whu.edu.cn

Tel.: +86 158 2714 2071



>> **Dr. REN Huazhong** is an assistant professor with Institute of Remote Sensing and GIS, Peking University. His research interests mainly aim at the retrieval of land surface temperature and emissivity from thermal infrared remote sensing data, and their ground validation. He was honored with Youth Scientist Award of Prof./ academician Xiaowen Li, the new leader in space science in joint forum between Chinese Academy of Sciences and US National Academy of Sciences, and Beijing NOVA program. He is the PI of National major project of high-resolution earth observation: Land surface temperature retrieval using split-window algorithm from Gaofen-5 image”, National Science Fund of China (NSFC) “Urban land surface temperature retrieval and urban heat environment monitoring using high spatial resolution remote sensing data”, and other project.

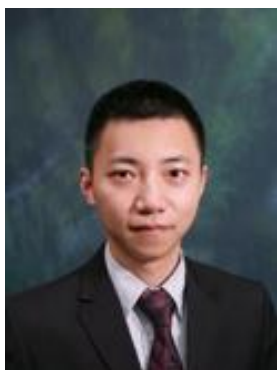
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>> **Dr. LI Xi** is an associate professor working at the State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University. He received the BS and PhD degrees in photogrammetry and remote sensing from Wuhan University, Wuhan, China, in 2004 and 2009, respectively. His research interests include methodology of night-time light and its applications. He

has published more than 20 peer-review papers on the topic of night-time light remote sensing in international journals. Dr. Li is an editorial member of International Journal of Remote sensing, an international consultant for the Asian Development Bank as well as an expert in Group on Earth Observations.



>> **Dr. ZHU Xiaolin** received his BSc. in 2007 and MSc. in 2010, both from Beijing Normal University. He received his Ph.D. in geography at Ohio State University in 2014. He was postdoctoral researcher at Colorado State University and University of California, Davis in 2015 and 2016 respectively. He is currently an Assistant Professor at Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University. He was awarded prestigious awards, including the Presidential Fellowship from Ohio State University, the Robert N. Colwell Memorial Fellowship Award from the American Society of Photogrammetry and Remote Sensing, and the Li Xiaowen remote sensing young scholar award. His research interests include remote sensing methods and applications. In particular, his research covers three areas: 1) developing new techniques to improve the quality of remote sensing data, 2) monitoring ecosystems and urban environment in spatial and temporal domains, 3) analyzing the spatial patterns and causes of land surface disturbances.



>>>**Dr. ZHANG Xiang** is an associate researcher of Wuhan University. He has been working on geospatial sensor web fusion and environmental application, particularly the drought research for the last five years. These researches were supported by the national natural science foundation of China, China postdoctoral foundation, and China Meteorological Administration.

Typical research achievements include the Process-based Accumulated Drought Index (PADI) for high quality drought monitoring, Satellite In-situ Collaboration Reconstruction (SICR) method for continuous soil moisture mapping, and a number of multi-sensor collaboration methods based on geospatial sensor web. He has been working closely with Prof. Nengcheng Chen, and Prof. Dev Niyogi, UT-Austin. He has published over 30 papers in SCI/EI journals, including Earth-Science Reviews, Remote Sensing of Environment, and Geophysical Research Letters. And he was invited as reviewers by more than 10 SCI journals, topic Editor of Water, and also certificated as “Outstanding Contribution in Reviewing for RSE”.



>> **Dr. Eugene LEVIN** is an associate professor, as well as the director of the integrated geospatial technology graduate program in the Department of Civil and Environmental Engineering at Michigan Tech. His areas of expertise are photogrammetry—the design, development, customization, integration, and delivery of off-the-shelf commercial and research software products; cognitive GIS; and human-computer symbiosis in integrated geospatial environments. Levin advised the Michigan Tech’s Aerospace Enterprise

Engineering Team on developing Photogrammetric UAV.

Levin’s professional activities include serving as the regional director for Michigan’s Upper Peninsula Chapter of ASPRS and sitting on the editorial board for the journal GPS Solutions, published by Springer-Verlag in Heidelberg, Germany. He is also active in several professional organizations, including the American Society for Photogrammetry and Remote Sensing, the Society of Photographic Instrumentation Engineers, and the International Society for Photogrammetry and Remote Sensing’s International Commission Working Group IV/VIII, which focuses on the updating and maintenance of core spatial databases.

Levin’s research activities have included a study on railroad exploitation in permafrost areas in Russia—Mosgioprotrans, Novosibirsk, Omsk, and Moscow—for the Federal Transportation Institute. He has given an invited lecture at the Moscow State Land Planning University and an invited research seminar, ISPRS 3S Graduate Student Summer Seminar SSGA, also in Russia.



>>**Dr. TU Zhigang**, started his Master Degree in image processing at the School of Electronic Information, Wuhan University, China, 2008. In 2015, he received the Ph.D. degree in Computer Science from Utrecht University, Netherlands. From 2015 to 2016, he was a postdoctoral researcher at Arizona State University, US. Then from 2016 to 2018, he was a research fellow at the School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore. He is currently a professor at the State Key Laboratory of

Information Engineering in Surveying, Mapping and Remote sensing, Wuhan University.

His research interests include computer vision, image processing, video analytics, and machine learning; his specialties include motion estimation, object segmentation, action recognition and localization, hand/human pose estimation, and anomaly detection. On those topics, he has co-/authored more than 50 articles on international SCI-indexed journals and conferences, e.g. Pattern Recognition (PR), IEEE Trans.

Image Process. (TIP), IEEE Trans. Circuits and Sys. Video Tech. (T-CSVT), CVPR, ICCV, ECCV, etc. He is an Executive Guest Editor of the SCI-indexed journal Combinatorial Chemistry & High Throughput Screening (IF=1.195). He is the organizer of the ACCV2020 Workshop on MMHAU (Japan) and the ACPR2019 Workshop on MAGR (New Zealand). He serves as a reviewer for more than 10 SCI-indexed journals and conferences, e.g., Pattern Recognition, IEEE Trans. Image Process., IEEE TCSVT, CVPR, ICCV, etc. He serves as a Program Committee for AAAI-2021. He received the “Best Student Paper” Award in the 4th Asian Conference on Artificial Intelligence Technology.



>>**Dr. LIU Xintao**, currently an Assistant Professor at the Department of Land Surveying and Geo-Informatics in The Hong Kong Polytechnic University (PolyU). His research interest includes GIScience, Transportation Geography and Complex Network, and his research goal is to use state-of-art technologies to advance smart city for a better city life.

He received Bachelor of Engineering in Survey from Hohai University, China in 1998, Master of Science in Cartography & GIS from Nanjing Normal University, China in 2003, and PhD in Geo-Informatics from Royal Institute of Technology, Sweden in 2012. Prior to joining PolyU in 2016, he worked as a post-doc fellow and lecturer at the Department of Civil Engineering in Ryerson University, Canada. He is the Vice Chair of the Geospatial Analysis and Modeling Commission of International Cartography Association (ICA), the Secretary of the Modeling Geographic Systems Commission at International Geographic Union (IGU), and the lecturer of the International Society of Urban Informatics (ISUI). He is the member of editorial board of several peer reviewed journals. He spearheaded and co-organized a series of international conference. He is the PI and Co-I of several national projects funded by Canada, Hong Kong SAR and Mainland, China (over 10 million HKD in total). He is a reviewer of a series of major international journals such as IJGIS and AAG in his field.



>> **Dr. YE Mao** is an associate researcher at State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, China. He received the bachelor degree in geomantic engineering from Wuhan University, Wuhan, China, in 2011, and the Ph.D. degree in geodesy and surveying engineering from the Wuhan University, China, in 2016.

His current research interests include precise orbit determination for deep space spacecraft, including Moon, Mars, and Small bodies in solar system, planet gravity field and the recovery software. To date, he has co-authored over 30 academic papers, with eight software copyrights for deep spacecraft navigation.

Session Overview

>>Beijing Time, UTC+8

Dec 16 th	19:00-20:00	Opening Ceremony and Keynote Speech by Prof. SHI Wenzhong Live: http://live.bilibili.com/10951964			
	20:00-22:00	Workshops			
Session1-1 Geospatial Analysis, Software and Applications Live: http://live.bilibili.com/22683087		Session2 Geodesy, Navigation and Location Services Live: http://live.bilibili.com/21681739			
Dec 17 th	19:00-22:00	Workshops			
		Session1-2 Geospatial Analysis, Software and Applications Live: http://live.bilibili.com/22683087	Session3 Ecological Environment Monitoring by Quantitative Remote Sensing Live: http://live.bilibili.com/10951964	Session4 Remote Sensing Applications Live: http://live.bilibili.com/21681739	Session5 Intelligent Analysis and Application of Image Data Live: http://live.bilibili.com/12220856
Dec 18 th	17:50-20:30	Graduates Round Table Discussion Live: http://live.bilibili.com/10951964			
	20:30-21:00	Closing Ceremony Live: http://live.bilibili.com/22683087			

Opening Ceremony & Keynote Speech

December 16, 2020

19:00-20:00 (Beijing Time, UTC+8)

Live: <http://live.bilibili.com/10951964>



Presided by GUO Yinghui, Graduate Student of LIESMARS

19:00-19:05	Introduction of Distinguished Participants
19:05-19:07	Welcome Address by Prof. DOU Xiankang, president of Wuhan University
19:07-19:10	Opening Remarks by Prof. WU Huayi, Vice Director of State Key Laboratory of Information Engineering in Survey, Mapping and Remote Sensing, Wuhan University
19:10-19:13	Guest Address by Prof. LI Peijun, Chairman of CPC of School of Earth and Space Sciences, Peking University
19:13-19:16	Guest Address by Prof. SHI Wenzhong, Head of Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University
19:16-20:00	Keynote Speech by Prof. SHI Wenzhong, The Hong Kong Polytechnic University Subject of the presentation: Urban Informatics

Session Program

Session 1-1 Geospatial Analysis, Software, and Applications

December 16, 2020

20:00-22:00 (Beijing Time, UTC+8)

Live: <http://live.bilibili.com/22683087>



Presided by FU Chenxi, PhD Student of LIESMARS

Advisors: Prof. CHEN Min, Dr. ZHANG Xiang	
20:00-22:00 December 16 (BEIJING TIME, UTC+8)	Speaker: Zijian GUO Affiliation: The Hong Kong Polytechnic University Title: Modeling the interaction patterns between tourists and residents using Wi-Fi log data in Macau
	Speaker: Guangran YE Affiliation: Peking University Title: Analysis on the Spatial Pattern of Regional Economic Development in Jiangxi Province
	Speaker: Aqil Tariq Affiliation: Wuhan University Title: Hotspot Analysis and relationship of Crime to Heat and Aggression in Saddar area, Lahore, Pakistan
	Speaker: Cheng FU Affiliation: University of Zurich Title: Towards Measuring Place Function Similarity at Fine Spatial Granularity with Trajectory Embedding
	BREAK (10 min)
	Speaker: Zidong YU Affiliation: The Hong Kong Polytechnic University Title: Spatial and Functional Organizations of Industrial Agglomerations in China's Greater Bay Area
	Speaker: Gezhi XIU Affiliation: Peking University Title: Traffic Efficiency Emerged from Local Inequality
	Speaker: Caili ZHANG Affiliation: Wuhan University Title: An Integrated Identification Strategy for Road Intersection Extraction from Low Frequency Trajectories

Session 2 Geodesy, Navigation, and Location Services

December 16, 2020

20:00-22:00 (Beijing Time, UTC+8)

Live: <http://live.bilibili.com/21681739>



Presided by QIAN Long, PhD Student of LIESMARS

Advisors: Prof. LIU Jingbin, Prof. ZHUANG Yuan, Dr. Qin Jianqi, Dr. YE Mao	
20:00-22:00 December 16 (BEIJING TIME, UTC+8)	Speaker: Bing Liu Affiliation: Technical University of Munich Title: Indoor Navigation and Spatial Knowledge Acquisition Supported by Virtual Semantic Landmarks in Mixed Reality
	Speaker: Qun Niu Affiliation: Sun Yat-sen University Title: Geomagnetic Indoor Localization Using Multi-Scale Features and Attention Guidance
	Speaker: Wei He Affiliation: Chongqing University of Posts and Telecommunications Title: A Gesture Recognition Method Based on Parameter Correction
	Speaker: Mohamed Freeshah Affiliation: Wuhan University Title: An Investigation into The Impact of The Typhoon on The Ionosphere Over the Point with Maximum Wind Speed During A Tropical Cyclone
	BREAK (10 min)
	Speaker: Xin Jin Affiliation: Shandong University of Science and Technology Title: Analysis and Prediction of Polar Motion Using MSSA Method
	Speaker: Nijia Qian Affiliation: China University of Mining and Technology Title: Using GRACE Level-2 Spherical Harmonic Coefficients as Measurements for Statistically Estimating Mass Variation
	Speaker: Tianxia Liu Affiliation: Tongji University Title: Evaluation of Position-fitting Single-frequency GNSS Cycle Slip Detection by Comparing with Measurement-fitting Methods
	Speaker: Qingliang Qu Affiliation: Shandong University of Science and Technology Title: Validation of GOCE Gravity Gradiometry Data Using DTU13 Gravity Anomalies

Session 1-2 Geospatial Analysis, Software, and Applications

December 17, 2020

19:00-22:00 (Beijing Time, UTC+8)

Live: <http://live.bilibili.com/22683087>



Presided by LIAN Weiqi, PhD Student of LIESMARS

Advisors: Prof. Eugene LEVIN, Dr. ZHANG Xiang	
19:00-22:00 December 17 (BEIJING TIME, UTC+8)	Speaker: Baoyi Affiliation: Peking University Title: High-resolution mapping of the urban built environment stocks in Beijing
	Speaker: YE, Xiang Affiliation: Shenzhen Universtiy Title: Estimating σ^2 for the classical linear regression model with the presence of the modifiable areal Affiliation problem
	Speaker: Lin Anqi Affiliation: Central China Normal University Title: A comprehensive quality assessment framework for linear features from Volunteered Geographic Information
	Speaker: Waqas Hassan Affiliation: China University of Geosciences Title: A Web-Based Approach of Digital Cadastral Land Information System
	Speaker: Shunli Wang Affiliation: Wuhan University Title: Fine-scale Population Estimation Based on Building Classifications
	Speaker: Boen Zhang Affiliation: The Hong Kong Polytechnic University Title: Probabilistic characterization of extreme storm surges induced by tropical cyclones
	BREAK (10 min)
	Speaker: Keli Wang Affiliation: Peking University Title: Individual-based modeling of COVID-19 transmission and control strategy
	Speaker: Zhengkang Zuo Affiliation: Peking University Title: The projected rebounds of COVID-19 pandemic exacerbate global health risks
	Speaker: Jie Li Affiliation: China University of Geosciences Title: OCAGraph: an effective observation capability association model for geosensors' observation planning

	<p>Speaker: Shaimaa Magdy Habib Affiliation: Scientific training and continuous studies Department, National Authority for Remote Sensing and Space Sciences (NARSS), Cairo, Egypt Title: Integrating GIS-MCDM Approach and RS Technology for Assessing Solar Photovoltaic Potential: Case Study the Western Desert Area of Egypt</p>
	<p>Speaker: Zhenjie Liu Affiliation: Sun Yat-Sen University Title: The Impact of Remote Sensing Knowledge on Spatial Bias Correction of Social Media Data: A Case Study of 2013 Boulder, Colorado Flood Event</p>
	<p>Speaker: Reda Fekry Affiliation: The Hong Kong Polytechnic University Title: Automated Co-registration of UAV and Backpack LiDAR Data in Forested Areas based on Canopy Density-based Clustering</p>

Session 3 Ecological Environment Monitoring by Quantitative Remote Sensing

December 17, 2020

19:00-22:00 (Beijing Time, UTC+8)

Live: <http://live.bilibili.com/10951964>



Presided by WANG Binhui, PhD Student of LIESMARS

Advisors: Dr. REN Huazhong, Dr. MA Yingying	
19:00-22:00 December 17 (BEIJING TIME, UTC+8)	Speaker: Jiang Chen Affiliation: Wuhan University Title: Estimation of all-sky all-wave daily net radiation at high latitudes from MODIS data
	Speaker: liye Yang Affiliation: Chang'an University Title: Quantifying moraine lake outburst floods and glacier multi-dimensional movement in Tibet from multi-source remote sensing data
	Speaker: Yanping Wu Affiliation: Wuhan Optics Valley Information Technology Co Title: Research on Rice Area Extraction and Yield Estimation in Xuanen County Based on Multi-source Remote Sensing Data
	Speaker: Shanshan Chen Affiliation: Peking University Title: Urban Land Surface Temperature Retrieval from High Spatial Resolution Thermal Infrared Image
	Speaker: Wei Ma Affiliation: Nanjing University Title: Retrieving snow wetness based on surface and volume scattering simulation
	Speaker: Yishan Zhang Affiliation: Peking University Title: Retrieval of Water Quality Parameters from Hyperspectral Images Using Hybrid Bayesian Probabilistic Neural Network
	BREAK (10 min)
	Speaker: Chen Zhang Affiliation: George Mason University Title: Exploring Soil Moisture Condition for the Conterminous Affiliated States with OGC Web Service
	Speaker: Dongdong Yan Affiliation: Beijing Normal University Title: Integrating Remote Sensing Data with WRF model for Improved 2-m Temperature and Humidity simulations in China
	Speaker: Bahaa Gomaa Affiliation: Wuhan University Title: A New Framework for Merging Active and Passive Remotely Sensed Soil Moisture Retrievals Based on Triple Collocation Analysis
Speaker: Yang Dongou Affiliation: Peking University Title: A Parallel Computing Algorithm of Atmospheric Dispersion Model CALPUFF	

	<p>Speaker: Elahe Moradi Affiliation: Shahid Rajaee Teacher Training University Title: Drought Monitoring with Spectral Indices Calculated from Landsat data-series In Iran</p>
	<p>Speaker: Hussein Abdelhady Mohasseb Abdelalim Affiliation: Wuhan University Title: The Sustainability of Groundwater in Overstressed Aquifers in Northern Africa and Arabian Peninsula using GRACE and Hydrological Models</p>
	<p>Speaker: Shao Guomin Affiliation: Northwest A&F University Title: Estimating Crop Coefficient of Maize Field Based on UAV Multispectral Remote Sensing</p>

Session 4 Remote Sensing Applications

December 17, 2020

19:00-22:00 (Beijing Time, UTC+8)

Live: <http://live.bilibili.com/21681739>



Presided by SU Yu, PhD Student of LIESMARS

Advisors: Dr. ZHU Xiaolin, Dr. LI Xi	
19:00-22:00 December 17 (BEIJING TIME, UTC+8)	Speaker: Lingxiao Gu Affiliation: Liaoning Technical University Title: Angle Effect on Typical Optical Remote Sensing Indices in Vegetation Monitoring
	Speaker: Li Lin Affiliation: George Mason University Title: Rapid Flood Damage Mapping and Information Dissemination During Emergency Event: An Experiment in OGC Disaster Resilience Pilot
	Speaker: Jiaqi Tian Affiliation: The Hong Kong Polytechnic University Title: Optimal Parameters of Maximum Value Composite Procedure and Smoothing Filter for Detecting Northern Hemisphere Spring Phenology
	Speaker: Xinghua Cheng Affiliation: The Hong Kong Polytechnic University Title: Measuring Scrambling Degree of Remote Sensing Images: A Perspective from the Second Law of Thermodynamics
	Speaker: Qiang Zhang Affiliation: Wuhan University Title: SGD-SM: Generating Seamless Global Daily AMSR2 Soil Moisture Long-term Products (2013-2019)
	Speaker: Binbin Huang Affiliation: Chinese Academy of Sciences Title: Optimization of ecological restoration pattern targeted for water purification improvement in the Baiyangdian watershed, Xiong'an New Area
	BREAK (10 min)
	Speaker: Guo Ye Affiliation: Wuhan University Title: A jitter detection method for satellites with TDI CCD onboard
	Speaker: Hafsa Aeman Affiliation: Wuhan University

	<p>Title: Flood Detection from C band Polarimetric (VH+VV) Sentinel-1 Datasets with the features of Intensity and Coherence</p>
	<p>Speaker: Nahed Osama Saber Shalaby Affiliation: Wuhan University Title: An Accurate Digital Elevation Modeling Technique by Micro-Pulse Technology</p>
	<p>Speaker: Paulo J. Mandela Affiliation: Sokoine University of Agriculture Title: A Comparative Analysis of Multi-temporal Image Fusion Methods for Monitoring City Expansion</p>
	<p>Speaker: Yi Zhao Affiliation: East China Normal University Title: Mapping 3D visibility in an urban street environment from mobile LiDAR point clouds</p>
	<p>Speaker: Yaxiao Niu Affiliation: Northwest A&F University Title: A Fixed-Threshold Method for Estimating Fractional Vegetation Cover of Maize under Different Levels of Water Stress</p>

Session 5 Intelligent Analysis and Application of Image Data

December 17, 2020

19:00-22:00 (Beijing Time, UTC+8)

Live: <http://live.bilibili.com/12220856>



Presided by WANG Shaoyu, PhD Student of LIESMARS

Advisors: Dr. LIU Xintao, Dr. TU Zhigang	
19:00-22:00 December 17 (BEIJING TIME, UTC+8)	Speaker: Ke Zheng Affiliation: Chinese Academy of Sciences Title: Coupled Convolutional Neural Network with Adaptive Response Function Learning for Unsupervised Hyperspectral Super Resolution"
	Speaker: Xuhui Zhao Affiliation: Wuhan University Title: A Coarse-to-fine Band Registration Framework for Multi Hyperspectral Remote Sensing Images Considering Cloud Influence
	Speaker: Haiming Zhang Affiliation: Jilin University Title: A Coarse-to-Fine Deep Learning Based Land Use Change Detection Method for High-Resolution Remote Sensing Images
	Speaker: Asurappullige Milani Tharuka Nadeeka Affiliation: Wuhan University Title: Developing a Bayesian relationship between Land Cover and Land Surface Temperature using remotely sensed Multispectral and Thermal imagery-2
	Speaker: Yaqian Zhai Affiliation: China University of Geosciences, Wuhan Title: Urban Land Use Change Simulation Using Vector-based Cellular Automata
	Speaker: Jiao Wu Affiliation: Wuhan University Title: Remotely Sensed Change Detection method based on Convolution Neural Network
	Break (10 min)
	Speaker: Tian Lan Affiliation: The Hong Kong Polytechnic University Title: Optimizing Schematic Maps by Integrating General Principles into Mixed Integer Programming
	Speaker: Youli Ding Affiliation: Wuhan University

	Title: Semantic Segmentation of Indoor 3D Point Cloud with SLENet
	Speaker: Chenyu Affiliation: Technical University of Munich Title: Improving Geo-knowledge Communication by Using Map-based Dashboard
	Speaker: Shan Jia Affiliation: Wuhan University Title: 3D Face Anti-Spoofing with Factorized Bilinear Coding
	Speaker: Haoyuan zhang Affiliation: Peking University Title: Intrusion Detection System Design Based on YOLO

>>Graduates Round Table Discussion

December 18, 2020

17:50-20:30 (Beijing Time, UTC+8)

Live: <http://live.bilibili.com/22683087>

Graduates Round Table Discussion is a special sub-session of IGWG 2020. It aims to gather masters and doctors to discuss their research life, providing an exchange platform to discuss cutting-edge trends, hot issues, etc. All the sharing in this session will be in Chinese, with English subtitles.

Get more on Graduates Round Table Discussion in the WeChat official account of GeoScience Café.



Scan QR code below to join Graduates Round Table Discussion via live.



Awards

A selection of high quality accepted full papers will be recommended to the journal of GISIS (Geo-spatial Information Science, ISBN 1009-5020). GISIS is the first English academic journal in China for Surveying, Mapping and Remote Sensing. In 2016 the journal was transformed into an open access (OA) publishing model to boost international communications. At present, this journal is included in international databases such as SCI-Expand, ESCI, Scopus, CSCD, GeoBase and PubMed.

The session audience are welcomed to submit their impression and inspiration from an advisor's comments or presentation to IGWG2020@whu.edu.cn within 300-700 words in Chinese or English. The best ones will be selected and the authors presented with a souvenir T-shirt with academician's signature. Please scan the code for more information.



All extended abstracts and full papers accepted by the workshop are eligible for awards. We will set an Excellent Presentation Award and an Excellent Participation Award for each session. Any award winner will obtain a travel allowance as long as you come to LIESMARS for any academic exchange or degree study within 3 years. Travel allowances from different awards can be added together and the funding will rise up to 70% of the total allowances. Travel allowance is limited to the economy-class seat in airplane, the second-class seat of hard berth in trains. The following is the award funding guidelines of single award:

LIESMARS Summer School	
Areas	Travel allowance (Maximum)
Europe, U.S., Africa	4000 RMB
China neighboring countries	2000 RMB
China	1000 RMB

Graduate Workshop or Degree Study	
Areas	Travel allowance (Maximum)
Europe, U.S., Africa	5000 RMB
China neighboring countries	3000 RMB
China	2000 RMB

Viewers

Prof. Pan Jun, Prof. Zhang Lu, Prof. Li Chang, Dr. Ma Yingying, Dr. Li Xi, Dr. Zhang Yufang, Dr. Lu Jianzhong, Dr. Zheng Xianwei, Dr. Zhang Xiang, Dr. Tu Zhigang, Dr. Li Wenhao, Dr. Liu Mengyun, Dr. Lei Jingtao.

Volunteers

Ding Youli, Mao Zhu, Zhang Yongxian, Zhang Dongxiao, Wang Binhui, Wang Chunyang, Su Yu, Fu Chenxi, Wu Ruijie, Liu Weiling, Wang Shaoyu, Li Zheng, Qian Long, Li Xue, Lian Weiqi, Guo Yinghui, Huang Wenzhe, Li Hao, Ding Rui, Su Jingling, Hu Jinkang, Wang Xin, Hu Chenghong.