

14TH TibXS

THE 14th INTERNATIONAL WORKSHOP ON TibXS

(Multi-observations and Interpretations of Xizang, Xinjiang and Siberia)

会议手册

Conference Handbook

August 10-14, 2026,
Kunming, Yunnan, China





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1 Organized and sponsored by

- ❖ State Key Laboratory of Precision Geodesy/Wuhan National Observation and Research Station for Geodesy, Innovation Academy for Precision Measurement Science and Technology, Chinese Academy of Sciences, Wuhan, Hubei, China
- ❖ Yunnan Aerospace Engineering Geophysical Detecting Co., Ltd, Kunming, Yunnan, China
- ❖ School of Geodesy and Geomatics, Wuhan University, Wuhan, Hubei, China
- ❖ Department of Civil Engineering, Yang Ming Chiao Tung University, Hsinchu, Taiwan, China
- ❖ College of Earth and Planetary Sciences, University of Chinese Academy of Sciences, Beijing, China
- ❖ Sun Yat-sen University, Zhuhai, Guangdong, China
- ❖ National Gravitation Laboratory, Huazhong University of Science and Technology, Wuhan, Hubei, China
- ❖ Subcommission 2.6 and Subcommission 2.4e of International Association of Geodesy



2 Scientific Organization Committee

Chair: Heping Sun

Co-chairs: Cheinway Hwang, Wenbin Shen

Members (Alphabetical order by surnames):

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3 Local Organization Committee

Chair: Xiaodong Chen

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Secretary General: Mingli Deng

Members: Xi Yang, Yu-Tzu Li, Chenchen Wang, Rumeng Guo, Xiaoming Cui, He Tang, Dongmei Guo, Binbin Liao, Xiongwei Tang, Weiwei Yang, Yang Xiao, Sixue Wang, Yijun Zhang, Ruyu Yan, Min Jiang, Miaomiao Zhang, Yabo Zhao, Xiaohong Li, Kefan Gao, Shuai Zhou, Fengshun Zhu, Yujie Chen, Bibo Peng, Lelin Xing, Xiaowei Niu, Chongchong Zhou, Peng Sang, Xian Ma, Lei Bai

4 (IAG) Background information

The Qinghai–Xizang Plateau, Xinjiang, Siberia, and their surrounding regions form one of the most dynamic natural laboratories on Earth for studying continental deformation, mountain building, intracontinental tectonics, cryosphere change, hydrological redistribution, and geohazards. The region includes the world’s highest plateau, major active fault systems, extensive glaciers and permafrost, large river-source areas, arid inland basins, and broad high latitude environments. These coupled tectonic, climatic, hydrological, and cryospheric processes make the TibXS region scientifically important not only for Asia, but also for understanding global change and Earth-system interactions.

The International Workshop on TibXS was initiated in 2009 as an international forum for geodesy, geodynamics, gravity, seismology, remote sensing, and related Earth-science disciplines. Over the past 13 workshops, TibXS has provided a platform for researchers to exchange new observations, methods, models, and interpretations concerning Xizang, Xinjiang, Siberia, and adjacent regions, including Yunnan, Sichuan, Qinghai, Gansu, Guizhou, Guangxi, and other tectonically and environmentally sensitive areas. The 14th TibXS continues this tradition while further expanding its scientific scope toward integrated observations and interdisciplinary interpretations.

Recent advances in space geodesy, satellite gravimetry, terrestrial and airborne gravity, InSAR, GNSS, satellite altimetry, time and frequency geodesy, seismology, hydrology, glaciology, and artificial intelligence have greatly improved our ability to observe Earth- surface deformation, mass redistribution, seismic processes, glacier and permafrost change, water storage variation, and climate-related hazards. However, many key scientific questions cannot be answered by a single technique alone. Integrated analysis of multi-source, multi- scale, and multi-parameter observations is essential for identifying causal mechanisms, separating tectonic, hydrological, cryospheric, and climatic signals, and improving the reliability of geophysical interpretation.

The 14th TibXS therefore welcomes contributions that use observations, theory, numerical modeling, data assimilation, time-frequency analysis, machine learning, and interdisciplinary approaches to address fundamental and applied problems in geodesy and geodynamics.

Particular attention will be given to studies that combine different observational systems, reveal new physical mechanisms, improve monitoring capability, or provide scientific support for disaster mitigation, water-resource management, ecological protection, and adaptation to climate change in high-mountain, plateau, inland-basin, and high-latitude environments.

5 Topics of the workshop

- ❖ Plate tectonics, crustal deformation, and geodynamics
- ❖ Seismogeodesy and earthquake-cycle processes
- ❖ Gravity field, mass redistribution, and Earth-system applications
- ❖ Space geodesy, remote sensing, and environmental change
- ❖ Cryosphere, hydrology, and climate-related processes
- ❖ Multi-source data integration, time-frequency analysis, and artificial intelligence
- ❖ Geohazards, disaster monitoring, and sustainable development
- ❖ Regional studies of Xizang, Xinjiang, Siberia, and surrounding regions
- ❖ Time and frequency signals applications in geodesy

6 History about TibXS

Since its inception in 2009, the TibXS workshop has been held 13 times in different cities across China. The dates and venues of the previous workshops, together with the venue of the 14th TibXS, are listed below.

No.	Year	City	No.	Year	City
1	2009	Urumchi, Xinjiang	8	2017	Mohe, Heilongjiang
2	2011	Xining, Qinghai	9	2018	Zhangye, Gansu
3	2012	Chengdu, Sichuan	10	2019	Lugu Lake (Liangshan), Sichuan
4	2013	Yining, Xinjiang	11	2023	Dali, Yunnan
5	2014	Guiyang, Guizhou	12	2024	Kashi, Xinjiang
6	2015	Kunming, Yunnan	13	2025	Xining, Qinghai
7	2016	Tianjin	14	2026	Kunming, Yunnan

Conference Program

August 11, 2026, 8:30-12:00 AM			
Opening Ceremony			
Chaired by Prof. Jiang-hui Geng			
08:30-08:50	Welcome speech 1. He-ping Sun (CAS Academician, scientific chair) 2. Chein-way Hwang (Prof., scientific co-chair) 3. Representative of Local Science and Technology Bureau 4. Li-ming Jiang (Prof., Vice President of APM)		
08:50-09:00	Group Photo		
Invited Reports (marked by ☆)			
09:00-09:35	Prof./☆ He-ping Sun (Ming-qiang Hou)	APM, CAS	A Future Plan for Geopotential Determination and Height Datum Unification
09:35-10:10	Prof./☆ Chein-way Hwang	Yang Ming Chiao Tung University	Terrestrial gravimetry for groundwater-storage monitoring and infrastructure safety in irrigated alluvial plains
10:10-10:30	Coffee/Tea Break Video: Introduction of Wuhan National Observation and Research Station for Geodesy		
Chaired by Prof. Chein-way Hwang			
10:30-11:00	Prof./☆ Jiang-hui Geng	APM, CAS	What do we need to trust high-precision GNSS more?
11:00-11:30	Prof./☆ Mona Lisa	Quaid-i-Azam University, (Pakistan)	Seismogeodesy and Earthquake-Cycle Processes in the Northwestern Himalayas, Pakistan
11:30-12:00	Deputy General Manager/☆ Xi Yang	Yunnan Aerospace Engineering Geophysical Detecting Co., Ltd	Multi-source Geophysical Observations and Engineering Geological Interpretation for Hazard Mitigation: Case Studies from Yunnan-Xizang Tectonic Belt and Tianshan Orogenic Belt

August 11, 2026, 15:00-17:20 PM

Session1 Gravity field, mass redistribution, and Earth-system applications

Part 1 : Chaired by Prof. Hussein Abd-Elmotaal

15:00-15:30	Prof./☆ Wen-bin Shen	Wuhan University	Application and prospect of optic frequency signal transfer via fiber
15:30-15:50	Assoc. Prof./ Jia-shuang Jiao	Wuhan University	Global surface mass redistribution drives 21st century polar motion excitation
15:50-16:10	Coffee/Tea Break		

Part 2: Chaired by Prof. Wen-bin Shen

16:10-16:40	Prof./☆ Hussein Abd-Elmotaal	Minia University, Egypt	Effect of Great African Land Depressions on Gravity and Geoid
16:40-17:00	Dr./☆ Mostafa Ashry	Minia University, Egypt	African Unified Height System Based on Gravity Data and Geopotential Models
17:00-17:20	Postdoc/ Hussein Mohasseb	University of Chinese Academy of Sciences	Higher-Degree Zonal Gravity Signatures of the Martian CO ₂ Cycle.

August 12, 2026, 9:00-12:00 AM

Session2 Space geodesy, remote sensing, and environmental change

Part 1: Chaired by Prof. Wei Feng

09:00-09:30	Prof./☆ Hao Zhou	Huazhong University of Science and Technology	Status of satellite gravimetry research at HUST
09:30-09:50	Dr./☆ Leonid Zotov	Lomonosov Moscow State University, Russia	Chandler wobble and LOD variations in latest decades
09:50-10:10	PhD student/ Xi-zhi Hu	APM, CAS	Tidal perturbations on LAGEOS-1 and LARES-2 and their influence on the verification of the Lense-Thirring effect

10:10-10:30

Coffee/Tea Break

Part 2 : Chaired by Prof. Hao Zhou

10:30-11:00	Prof./☆ Wei Feng	Sun Yat-sen University	Marine gravity field recovery and bathymetry from the SWOT mission
11:00-11:20	Assoc. Prof./ Dao-cheng Yu	Liaoning Technical University	Revealing buried tectonic structures in the Gulf of Mexico using SWOT-derived marine gravity
11:20-11:40	Assoc. Prof./ Zhi-wei Ma	Henan University of Economics and Law	Multi-Scale Band-Limited SRBF Modelling for Regional Gravity Field Recovery in Mountainous Regions
11:40-12:00	Student/ Jian-hua Chen	Tongji University	Full Signal Variance Covariance Regularization for Satellite-Only Static Gravity Field Modeling

August 12, 2026, 15:00-17:30 PM			
Session3 Multi-source data integration, time-frequency analysis, and artificial intelligence			
Chaired by Prof. Jiangcun Zhou			
15:00-15:30	Prof./☆ Orhan Akyilmaz	Istanbul Technical University,Turkiye	Physics-Informed Dual-Stream Learning for Daily GRACE/GRACE-FO Downscaling
15:30-15:50	Assoc. Prof./ Wei-Chia Hung	Yang Ming Chiao Tung University	An AI-Driven Hydrogeodetic Framework for Monitoring and Predicting Land Subsidence Using GNSS, InSAR, and Multi-Layer Compaction Observations
15:50-16:10	Lecturer/ Ming-yu Xiao	JiangXi University of Science and Technology	A continuous piecewise polynomial fitting algorithm for detecting trend changing points
16:10-16:30	Coffee/Tea Break		
Chaired by Prof. Orhan Akyilmaz			
16:30-16:50	Assoc. Prof./ Wen-jin Chen	Jiangxi University of Science and Technology	A Novel Non-Singular and Numerically Stable Algorithm for Efficient Tesseroid Gravity Forward Modeling
16:50-17:10	PhD. Student/ Jin-tao Jiang	APM, CAS	Wide-area PPP-RTK-based multi-link synchronous time and frequency transfer
17:10-17:30	Post Doc./ Lian-jun Yang	School of Geodesy and Geomatics, Wuhan University	Interpretable data-driven storm surge forecasting for ungauged coastal areas

August 13, 2026, 9:00-12:00 AM

Session4 Seismogeodesy and earthquake-cycle processes

Part 1: Chaired by Associate Prof. Ru-meng Guo

09:00-09:30	Prof./☆ Daya Shanker	Indian Institute of Technology Roorkee, Indian	Modelling Intraplate Deformation and Stress in the Indian Plate: Implications for Seismic Hazard and Continental Dynamics in Central Asia
09:30-09:50	Assoc. Prof./ Wei Xiong	Institute of Seismology, China Earthquake Administration	The link between co- and postseismic slip in the 2024 Wushi Mw7.0 earthquake sequence constrained by geodetic data
09:50-10:10	Student/ Jia-qi Liu	Institute of Seismology, China Earthquake Administration	Distributed weak upper mantle beneath the northern Shan Plateau revealed by far-field postseismic response of the 2025 Mw7.8 Mandelay earthquake
10:10-10:30	PhD Student/ Anas Sharafeldin Mohamed Osman	APM, CAS	Coseismic slip distribution of the Mw 6.0 Asadabad, Afghanistan, Earthquake and its Mw 5.6 aftershock
10:30-10:50	Coffee/Tea Break		

Part 2: Chaired by Prof. Daya Shanker

10:50-11:20	Prof./☆ Aydin Üstün	Kocaeli University, Türkiye	Assessing coseismic displacements and signal arrival times of Kahramanmaraş twin Earthquakes, 6th Feb 2023 through GNSS measurements
11:20-11:40	PhD Student/ Jing-qi Wang	APM, CAS	Interseismic, coseismic, and early postseismic slip associated with the 2025 Mw 8.8 Kamchatka Earthquake
11:40-12:00	Student/ Kun Zhang	Guangdong University of Technology	Satellite Geodetic Detection of Coseismic Gravity Changes Associated with the 2025 Mw8.8 Kamchatka Earthquake

August 13, 2026, 15:00-17:30 PM

Session5 Cryosphere, hydrology, climate-related processes & geohazards, disaster monitoring, and sustainable development

Chaired by Prof. Xiaodong Chen

15:00-15:30	Assoc. Prof./☆ Sevada Olgun	Kocaeli University, Türkiye	Calculation of Seafloor-Geometry Gravity Effects and Its Relevance to Bathymetric Modeling in the Mediterranean Sea
15:30-15:50	Assoc. Prof./ He Tang	APM, CAS	A Unified Framework for Full Spatiotemporal Simulation of Earthquake-Induced Viscoelastic Deformation
15:50-16:10	PhD student/ Mohamed Magdy Youssef	APM, CAS	Improving Mediterranean Sea Level Predictions using the hybrid VMD-DMD Decomposition Algorithm
16:10-16:30	PhD student/ Yuan Ma	University of Chinese Academy of Sciences	Seamless Daily 250-m Flood Mapping Under Cloudy Conditions Using MODIS Terra-Aqua Fusion
16:30-16:50	PhD. Student/ Can Xi	Wuhan University	Machine Learning-Based Quantitative Assessment of Hydraulic-Fracturing-Induced Seismic Hazard Using Multi-Source Data: A Case Study of the Weiyuan Shale Gas Field, Sichuan, China
16:50-17:10	Student Paper Award Ceremony		
17:10-17:30	Discussion		

August 14, 2026, 9:00-11:00 AM

Scientific Committee Meeting

09:00-11:00

Scientific Committee Meeting

August 14, 2026, 15:00-17:00 PM

International Cooperation

15:00-17:00

International Scientific Cooperation Meeting

Poster

Name	Affiliation	Title
Prof./ Wei-tou Ni☆	Lanzhou Center of Theoretical Physics, Lanzhou University	Laser ranging, geocentric motion, and large mass environmental movement
Prof./ Erhu Wei	Wuhan University	Time-Varying Decomposition and Dual-Branch Probabilistic Forecasting of the Dst Index for Space Weather Risk Assessment
Assoc. Prof./ Guo-qing Zhang	The Second Monitoring and Application Center, China Earthquake Administration	Subsurface Activities at Mount Tokachi, Japan, Constrained by GNSS and Microgravity Measurements from 2010 to 2025
Assoc. Prof./ Qian-qian He	East China University of Technology	IDDS: a software to download IGETS data
Dr./ Xian Ma	APM,CAS	Application of Dense Gravity Survey for Polymetallic Deposit Exploration in Northeastern Zhejiang, China
Dr./ Wei-wei Yang	APM,CAS	Time Variability of Fluid Core Rotational Normal Mode Parameters Based on Superconducting Gravimeter Observations
Dr./ Qian-qian Li	APM, CAS	A synergistic assessment of global wind and wave energy resources using satellite altimetry
PhD student/ Le-xing Wang	APM, CAS	Effects of Environmental Loading on Relativistic Geodesy

Name	Affiliation	Title
Postdoc/ Qi-wen Wu	College of Earth and Planetary Sciences,CAS	Noise analysis of GPS vertical displacements in the southeastern Tibet using high spatiotemporal resolution hydrological loading
Student/ Chun-Chieh Wang	Yang Ming Chiao Tung University	Deriving Intertidal Topography of the Xiangshan Wetland from Spaceborne Wide-Swath SWOT Altimetry Data
Dr. / Anh-The Hoang☆	School of Agriculture and Resources, Vinh University,Vietnam	A Simulation of Height Datum Transfer from the Mainland to an Island Using the Optical Clock Frequency Comparison Method
Student/ Rui Xu	School of Geodesy and Geomatics, Wuhan University	Formulation of testing gravitational redshift based on Laser Time link between China Space Station and a ground station
Student/ Hai-fei Lin	APM, CAS	Unified-State Full-Link GNSS Simulation Framework with Relativistic Frequency Modeling
Student/ Run-min Lu	APM, CAS	Estimation of Station Frequency Bias in GNSS Time and Frequency Transfer
Student/ Qiu-zhu Jiang	Zhejiang University of Technology	Calibration Method of Relative Gravimeter Using a Quantum Absolute Gravimeter
Student/ Lu-ning Li	APM,CAS	Geodetic Strain Partitioning Reveals Asymmetric Fault Loading Around the Ordos Block

Name	Affiliation	Title
Student/ Zhao Guo	APM,CAS	HY-2D satellite attitude missing data completion and performance evaluation based on different methods
Engineer/ Miao-miao Zhang	APM,CAS	Results from more than 500 days of observations with the newest iGrav-052 superconducting gravimeter at Jiufeng station, Wuhan
Student/ Youchao Xie	Wuhan University	Determination of the geopotential difference between Wuhan and Hefei based on the Shallow Layer Method

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- ❖ Department of Civil Engineering, Yang Ming Chiao Tung University, Hsinchu, Taiwan, China
- ❖ College of Earth and Planetary Sciences, University of Chinese Academy of Sciences, Beijing, China
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