

Top Academic Conferences
重要学术会议指南
TAC



2023
XVIII ISM
CONGRESS

THE XVIII INTERNATIONAL
CONGRESS FOR
MINE SURVEYING

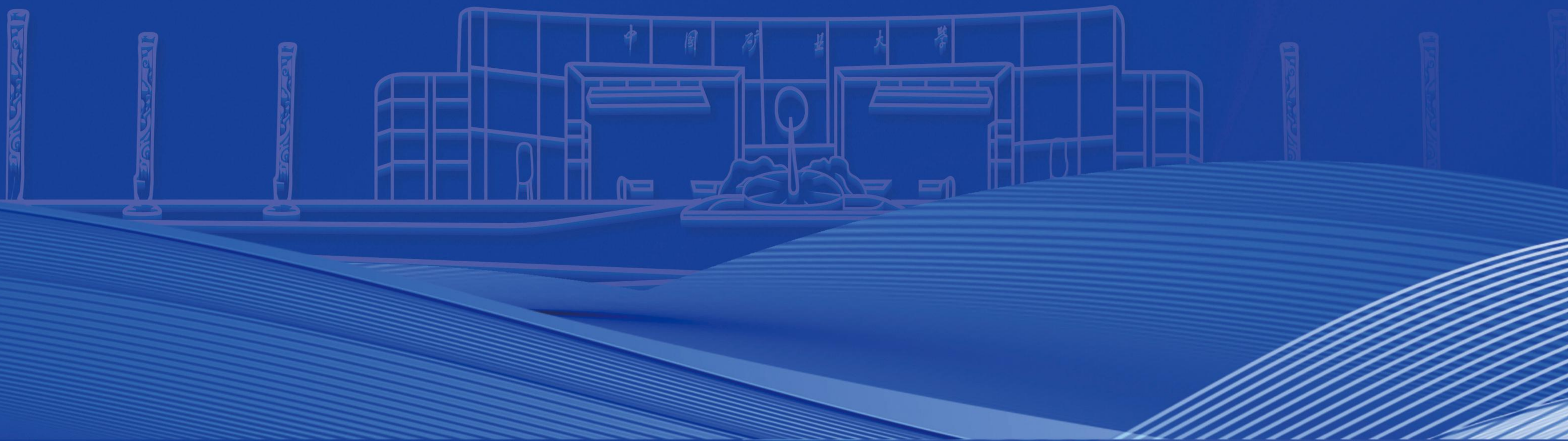
第18届国际矿山测量大会
智能测绘 绿色矿山
Smart Surveying and Mapping & Green Mine

大会手册

Congress Program

Xuzhou, China 中国·徐州

October 26-29, 2023





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一、大会概况

国际矿山测量协会（International Society for Mine Surveying, ISM）是联合国教科文组织下的非政府一级学术组织，成立于1969年，现有43个成员国，迄今已召开17届国际矿山测量大会、49次主席团会议。该协会每三年举办一次大会，历次大会是国际矿山测量领域规模最大、水平最高的学术盛会，大会通过主旨报告、装备展览、技术考察等形式开展广泛而深入的交流活动。

第18届国际矿山测量大会于2023年10月26-29日在中国徐州举行，来自世界各地的专家学者和技术人员将围绕大会主题“智能测绘 绿色矿山”介绍最新研究成果、展示技术成功案例、进行多学科交融、提出未来发展方向与应用需求。目前，已经有30多个国家的科技人员报名参会，欢迎各界人士踊跃参会交流。

本届大会经教育部国际合作与交流司批准，入选中国科学技术协会《重要学术会议指南（2023）》。

48小时

深度交流与探讨

12场主题分论坛

干货满满、不虚此行

20+ 中外院士

大咖云集、对话领军人物

100+ 参与单位

高校、企业、社会团体

150+ 场演讲

创新前沿、技术热点

100+ 国际友人

以智引智

I About

The International Society for Mine Surveying (ISM) is a non-governmental academic organization under the UNESCO. It was established in 1969 and currently has 43 member countries. It has held 17 Congresses and 49 Presidium Meetings to date. The Congresses are the largest and highest level academic event in the field of mining surveying. The congress conducts extensive and in-depth exchange activities through keynote speeches, equipment exhibitions, technical inspections, and other forms.

The 18th International Congress for Mine Surveying will be held in Xuzhou, China from October 26 to 29, 2023. Experts, scholars, and technicians from around the world will introduce the latest research results, showcase successful technical cases, integrate multiple disciplines, and propose future development directions around the theme of "Smart Surveying and Mapping & Green Mine". Scientific and technological personnel from more than 30 countries have registered to participate in the conference.

This congress has been approved by the Department of International Cooperation and Exchange of the Ministry of Education of China and selected for the "Guidelines for Important Academic Conferences (2023)" by the China Association for Science and Technology.

48 Hours

Communication

12

Sessions

20+

Chinese and
foreign academicians

100+ Affiliation

Universities, Enterprises,
Association

150+ Speeches

Technology Frontier

100+

International friends

二、大会架构

指导单位

国际矿山测量协会
中国煤炭学会
中国测绘学会

主办单位

中国矿业大学
中国矿业大学（北京）
河南理工大学
安徽理工大学

协办单位

上海华测导航技术股份有限公司
西安煤科透明地质科技有限公司
海克斯康测绘与地理信息系统（青岛）有限公司
江苏省老工业基地资源利用与生态修复协同创新中心
天九通航（徐州）教育咨询有限公司
武汉泽塔云科技股份有限公司
安徽图联科技有限公司
浙江中海达空间信息技术有限公司

支持单位

RWTH Aachen University
University of New South Wales
University of Johannesburg
AGH University of Technology
广州中海达卫星导航技术股份有限公司
北京龙软科技股份有限公司
北京捷翔天地信息技术有限公司
中纬测量系统（武汉）有限公司
广州南方测绘科技股份有限公司
国际矿业、能源与环境高等教育联盟
中国测绘学会矿山测量专业委员会
中国煤炭学会矿山测量专业委员会
中国煤炭学会煤矿开采损害技术鉴定委员会
中国煤炭学会煤矿土地复垦与生态修复委员会
自然资源部国土环境与灾害监测重点实验室
自然资源部黄淮海煤矿区国土生态与土地利用野外科学观测研究站
矿山生态修复教育部工程研究中心
江苏省资源环境信息工程重点实验室
江苏自然资源智库中国矿业大学研究基地
生态修复网|易修复学院
江苏省测绘地理信息学会
《中国矿业大学学报》
International Journal of Coal Science & Technology
《中国矿业》
《时空信息学报》
《导航定位与授时》
《金属矿山》

II Organization

Instructed by

International Society for Mine Surveying
China Coal Society
Chinese Society for Geodesy, Photogrammetry and Cartography

Organized by

China University of Mining and Technology
China University of Mining and Technology (Beijing)
Henan Polytechnic University
Anhui University of Science and Technology

Co-organized by

Shanghai Huace Navigation Technology Co., Ltd.
Xi'an Coal Science Transparent Geological Technology Co., Ltd
Hexconn Surveying and Geographic Information System (Qingdao) Co., Ltd
Collaborative Innovation Center for Resource Utilization and Ecological Restoration of the Old Industrial Base in Jiangsu Province
Tianjiu Tonghang (Xuzhou) Education Consulting Co., Ltd
Wuhan Zeta Cloud Technology Co., Ltd
Anhui Tulian Technology Co., Ltd
Zhejiang Zhonghaida Space Information Technology Co., Ltd

Supported by

Aachen University of Technology, Germany
University of New South Wales, Australia
University of Johannesburg, South Africa
AGH University of Technology, Poland
Guangzhou Zhonghaida Satellite Navigation Technology Co., Ltd
Beijing Longruan Technology Co., Ltd
Beijing Jiexiang Tiandi Information Technology Co., Ltd
Zhongwei Measurement System (Wuhan) Co., Ltd
Wuhan Zeta Cloud Technology Co., Ltd
Guangzhou Southern Surveying and Mapping Technology Co., Ltd
International Union of Higher Education in Mining, Energy and Environment
Mine Surveying Professional Committee of Chinese Society for Geodesy, Photogrammetry and Cartography
Mine Surveying Professional Committee of China Coal Society
Technical Appraisal Committee for Coal Mining Damage of China Coal Society
Coal Mine Land Reclamation and Ecological Restoration Committee of China Coal Society
Key Laboratory of Land Environment and Disaster Monitoring of the Ministry of Natural Resources
Ministry of Natural Resources Huanghuaihai Coal Mine Area Land Ecology and Land Use Field Scientific Observation and Research Station
Engineering Research Center of the Ministry of Education for Mine Ecological Restoration
Key Laboratory of Information Engineering for Resources and Environment in Jiangsu Province
Jiangsu Natural Resources Think Tank China University of Mining and Technology Research Base
Ecological Restoration Network | Easy Restoration College
International Journal of China University of Mining & Technology
International Journal of Coal Science & Technology
China Mining Magazine
Geomatics World
Navigation Positioning and Timing
Metal Mines

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四、大会日程 IV Congress Agenda

日期 Date	时间 Time	活动内容 Events	地点 Venue
10月26日下午 Afternoon 26 th Oct.,2023	12:00-22:30	报到 Registration	徐州绿地铂瑞酒店 Xuzhou Greenland Platinum Hotel
	14:00-15:30	孙和平院士报告会 Academician Sun Heping's Academic Report	中国矿业大学图书馆报告厅 Auditorium in Library, China University of Mining and Technology
	16:30-18:30	中国矿山测量70周年发展研讨会 Seminar on the 70th Anniversary of Mine Surveying in China	徐州绿地铂瑞酒店多功能厅1 Function Room 1, Xuzhou Greenland Platinum Hotel
	19:00-21:30	自助晚餐 Buffet Dinner	徐州绿地铂瑞酒店卓越西餐厅 Cafe Central, Xuzhou Greenland Platinum Hotel
	20:30-20:45	无人机表演 Drone show	徐州绿地铂瑞酒店 Xuzhou Greenland Platinum Hotel
10月27日上午 Morning 27 th Oct.,2023	09:00-09:40	开幕式 Opening Ceremony	徐州绿地铂瑞酒店铂瑞厅 Ballroom, Xuzhou Greenland Platinum Hotel
	09:40-10:00	合影 Group Photo	徐州绿地铂瑞酒店北门 North gate of Xuzhou Greenland Platinum Hotel
	10:00-10:10	茶歇 Tea Break	徐州绿地铂瑞酒店铂瑞厅 Ballroom, Xuzhou Greenland Platinum Hotel
	10:10-12:10	大会主旨报告 Keynote Speeches	徐州绿地铂瑞酒店铂瑞厅 Ballroom, Xuzhou Greenland Platinum Hotel
	12:10-13:40	自助午餐 Lunch Buffet	徐州绿地铂瑞酒店卓越西餐厅 Cafe Central, Xuzhou Greenland Platinum Hotel
10月27日下午 Afternoon 27 th Oct.,2023	14:00-15:40	大会主旨报告 Keynote Speeches	徐州绿地铂瑞酒店铂瑞厅 Ballroom, Xuzhou Greenland Platinum Hotel
	15:40-16:00	茶歇 Tea Break	
	16:00-17:30	大会主旨报告 Keynote Speeches	
	19:00-20:30	欢迎晚宴 Welcome Dinner	徐州绿地铂瑞酒店铂瑞厅 Ballroom, Xuzhou Greenland Platinum Hotel
10月28日上午 Morning 28 th Oct.,2023	08:00-09:50	分论坛 1/2/4/6/7/11 Session 1/2/4/6/7/11	徐州绿地铂瑞酒店会议楼 Conference Building, Xuzhou Greenland Platinum Hotel
	09:50-10:10	茶歇 Tea Break	
	10:10-12:00	分论坛 1/2/4/6/7/11 Session 1/2/4/6/7/11	

	08:00-12:00	研究生论坛 Post-graduate Forum	徐州绿地铂瑞酒店大洞山厅 Dadong Shan Room, Xuzhou Greenland Platinum Hotel
	08:30-12:00	甲烷观测与量化边会 Methane Emission Observation and Quantification Side Event	徐州绿地铂瑞酒店潘安湖厅 Pan'an Lake Room, Xuzhou Greenland Platinum Hotel
	12:00-13:40	自助午餐 Lunch Buffet	卓越西餐厅 Cafe Central, Xuzhou Greenland Platinum Hotel
10月28日下午 Afternoon 28 th Oct.,2023	14:00-15:50	分论坛 3/5/8/9/10/12 Session 3/5/8/9/10/12	徐州绿地铂瑞酒店会议楼 Conference Building, Xuzhou Greenland Platinum Hotel
	15:50-16:10	茶歇 Tea Break	
	16:10-18:00	分论坛 3/5/8/9/10/12 Session 3/5/8/9/10/12	
	14:00-18:00	研究生论坛 Post-graduate Forum	徐州绿地铂瑞酒店大洞山厅 Dadong Shan Room, Xuzhou Greenland Platinum Hotel
	14:00-15:00	河南理工大学测绘学科发展研讨会 Seminar on the Development of Surveying and Mapping Discipline at Henan University of Technology	徐州绿地铂瑞酒店凤凰山厅 Fenghuang Shan Room, Xuzhou Greenland Platinum Hotel
	15:30-17:30	第50次ISM主席团会议(Part B) The 50th ISM Presidium Meeting (Part B)	中国矿业大学图书馆负一层会议室 Meeting room at the Negative first floor of the Library in China University of Mining and Technology
	19:00-21:30	闭幕式和晚宴 Closing Ceremony and Dinner	徐州绿地铂瑞酒店铂瑞厅 Ballroom, Xuzhou Greenland Platinum Hotel
10月29日上午 Morning 29 th Oct.,2023	08:30-12:00	技术考察, 离会 Technical Investigation, Departure	选项 1: 上海华测 (仅限国际嘉宾参加) 选项 2: 徐州潘安湖 Choice 1:Huace Company, Shanghai City (International delegates only) Choice 2:Pan' an Lake, Xuzhou City
	09:30-12:00	天空地井协同感知空间信息研讨会 Seminar of Space-Air-Ground-Well Cooperative Awareness Spatial Information	中国矿业大学环境与测绘学院 A506 会议室 Room A506, School of Environment and Spatial Informatics, China University of Mining and Technology

五、开幕式及合影

V Opening Ceremony and Group Photo

时间：2023年10月27日9:00-10:00

Time: October 27, 2023 9:00-10:00

地点：徐州绿地铂瑞酒店铂瑞厅

Place: Ballroom, Xuzhou Greenland Platinum Hotel

时间 Time	活动 Activities	主持人 Moderators
08:30-09:00	暖场视频 Warm up video	
09:00-9:40	中国矿业大学校领导致欢迎辞 Welcome speech from the leader of China University of Mining and Technology	黄乐亭, 国际矿山协会主席 Huang Leting, The President of International Society for Mine Surveying
	河南理工大学党委书记邹友峰教授致辞 Speech by Professor Zou Youfeng, Secretary of the Party Committee of Henan Polytechnic University	
	安徽理工大学副校长张平松教授致辞 Speech by Professor Zhang Pingsong, Vice-President of Anhui University of Science and Technology	
	中国煤炭学会理事长刘峰致辞 Speech by Liu Feng, Chairman of the China Coal Society	
	中国测绘学会理事长宋超智致辞 Speech by Song Chaozhi, Chairman of Chinese Society for Geodesy, Photogrammetry and Cartography	
	联合国教科文组织北京代表处负责人致辞 Speech by the head of the UNESCO Beijing Representative Office	
	徐州市政府领导致辞 Speech by leader of Xuzhou Municipal Government	
自然资源部国土测绘司领导致辞 Speech by the leader of the Land Surveying and Mapping Department of the Ministry of Natural Resources in China		
09:40-10:00	合影 Group Photo	
10:00-10:10	茶歇 Tea Break	

六、大会主旨报告

VI Keynote Speeches

时间：2023年10月27日10:10-18:00

Time: October 27, 2023 10:10-18:00

地点：徐州绿地铂瑞酒店铂瑞厅

Place: Ballroom, Xuzhou Greenland Platinum Hotel

时间 Time	报告人 Speaker	职位/单位 Position/Affiliation	报告题目 Presentation Title	主持人 Moderators
10:10-10:40	李德仁 Li Deren	武汉大学教授，中国科学院院士、中国工程院院士 Professor of Wuhan University, Academician of the Chinese Academy of Sciences and Chinese Academy of Engineering	论天地互联的智能遥感卫星与应用——从珞珈卫星到东方慧眼星座 Interconnected intelligent remote sensing satellites and applications - From Luojia satellites to orient smart eye constellation	Hendrik Grobler Bian Zhengfu
10:40-11:10	Axel Preuße	Professor of RWTH Aachen University, Vice President of ISM	A compendium of mine surveying in Germany 2023	
11:10-11:40	Syd S.Peng	河南理工大学特聘教授，美国国家工程院院士 Distinguished Professor of Henan Polytechnic University, Members of the United States National Academy of Engineering	美国煤矿房柱开采法及其地表沉陷特征 Room and pillar mining method and its surface subsidence features in U.S. coal mines	
11:40-12:10	孙和平 Sun Heping	中国科学院测量与地球物理研究所研究员，中国科学院院士 Professor of Institute of Surveying and Geophysics, Chinese Academy of Sciences, Academician of Chinese Academy of Sciences	深地超高精度多物理场观测的科学意义 Scientific significance of deep ultra-high precision multi-physical field observation	
12:10-14:00	午餐休息/ Lunch Break			
14:00-14:20	袁亮 Yuan Liang	安徽理工大学教授、校长，中国工程院院士 Professor and President of Anhui University of Science and Technology, Academician of the Chinese Academy of Engineering	煤炭开发中瓦斯（甲烷）减排与低碳利用对策 Gas (methane) emission reduction and low-carbon utilization strategies in coal development	Zou Youfeng Zheng Nanshan
14:20-14:40	卞正富 Bian Zhengfu	中国矿业大学教授、副校长 Professor and President of China University of Mining and Technology	面向未来采矿业的矿山测量科技创新 Technology innovation of mining surveying for future mining industry	
14:40-15:00	Ryszard Hejmanowski	Professor of AGH University of Science and Technology, Chair of the Commission IV of the ISM	To the accuracy of the predicted deformation caused by underground deposits extraction	
15:00-15:20	李全生 Li Quansheng	国家能源集团研究员 Professor of China National Energy Group	煤炭生态保护型开采科技创新与工程实践 Technological innovation and engineering practice of ecological protection during coal mining	
15:20-15:40	茶歇/ Tea Break			
15:40-16:00	黄乐亭 Huang Leting	中国矿业大学教授，国际矿山测量协会主席 Professor of China University of Mining and Technology, President of ISM	煤矿开采沉陷灾害链演化机理与系统减灾 Evolution mechanism of coal mining subsidence disaster chain and systematic disaster reduction	Edmond Hoxha Hu Bingnan
16:00-16:20	金双根 Jin Shuanggen	河南理工大学教授、学术副校长，欧洲科学院院士 Professor and Academic Vice President of Henan University of Technology, Academician of the European Academy of Sciences	天空地一体化遥感及其在矿业和生态环境中的应用 Integrated space-air-ground sensing and its applications in mining and ecological environments	
16:20-16:40	汪云甲 Wang Yunjia	中国矿业大学教授 Professor of China University of Mining and Technology	中国矿山测量70年发展与展望 70 years' development and prospects of mining surveying in China	
16:40-17:00	Simit Raval	Professor of The University of New South Wales, Australian National Representative of the ISM	Advancements in digital mapping and monitoring for mine operations	
17:00-17:20	张克非 Zhang Kefei	中国矿业大学教授 Professor of China University of Mining and Technology	测绘与太空采矿-矿山测量的新疆域 Space mining and geospatial - the next frontier	
17:20-17:30	黄晔 Huang Ye	上海华测导航技术股份有限公司矿山行业部总经理 General Manager of the Mining Industry Department of Shanghai Huace Navigation Technology Co., Ltd.	用精准时空信息技术助力数字化矿山建设 Using precise spatiotemporal information technology to assist in the construction of digital mines	

七、欢迎晚宴及文艺演出

VII Welcome Dinner and Theatrical Performances

时间：2023年10月27日19:00-20:30

Time: October 27, 2023 19:00-20:30

地点：徐州绿地铂瑞酒店铂瑞厅

Place: Ballroom, Xuzhou Greenland Platinum Hotel

序号 No.	活动 Events
1	舞蹈 《欢乐颂》 Dance: <i>Joyful Ode</i>
2	中国矿业大学校领导致辞 Address by the leaders of China University of Mining and Technology
3	上海华测导航技术股份有限公司致辞 Address by Shanghai Huace Navigation Technology Co., Ltd.
4	歌曲 《登山缆车》（意大利），《鸿雁》（中国） Songs: <i>Funiculi, Funiculà</i> (Italy), <i>Swan Geese</i> (China)
5	黄梅戏 天仙配选段《互表身世》&《夫妻双双把家还》 Huangmei Opera: excerpted from the play <i>The Heavenly Match: Sharing Each Other Life Stories & Husband and Wife Returning Home Happily</i>
6	古典吉他 《最后的颤音》 Classical Guitar: <i>The Last Vibrato</i>
7	街舞 《One and only》 Hip-hop dance: <i>One and Only</i>
8	歌曲 《If I Ain' t Got You》 Song: <i>If I Ain' t Got You</i>
9	舞蹈 《雨后》 Dance: <i>After the Rain</i>
10	民歌 《谁不说俺家乡好》 Folk song: <i>Why Not Praise My Hometown</i>
11	钢琴独奏 《升c小调夜曲（遗作）》 Piano solo: <i>Nocturne in C-Sharp Minor, Op. Posth.</i>
12	舞蹈 《风吹麦浪》 Dance: <i>Wind Blows Over the Wheat Waves</i>

八、大会分论坛

Ⅷ Parallel Sessions

时间: 2023年10月28日08:00-18:00

Time: October 28, 2023 08:00-18:00

地点: 徐州绿地铂瑞酒店会议楼

Place: Conference Building, Xuzhou Greenland Platinum Hotel

No.	Theme	Chair	Location/Time
1	International Mine Surveying Education and Training, Disciplinary Development	Bian Zhengfu, Shabarov Arkady Nikolaevich	Yaowan Room 8:00-12:00
2	Digitalization of Mine and Mineral resource	Fred Cawood, Chen Guoliang, Liu Zaibing	Shizishan Room 8:00-12:00
3	New Equipment and Technological Development of Surveying and Mapping	Wang Jian, Chen Xin, Ji Min, Zhang Qiuzhao	Yunlong lake Room 14:00-18:00
4	Mining Subsidence and Disaster Monitoring	Ryszard Hejmanowski, Dai Huayang	Yunlong lake Room 8:00-12:00
5	Geological and Ecological Environment Monitoring and Governance	Simit Raval, Zhang Shaoliang, Xiao Wu, Zhang Hebing	Yaowan Room 14:00-18:00
6	Sustainable Development and Comprehensive Utilization of Resources	Zou Youfeng, Cao Yunxing, Yang Wenfu	Quanshan Room 8:25-12:00
7	Land Reclamation and Ecological Restoration in Mining Areas	Li Jing, Anna Krzyszowska Waitkus, Huang Jiu, Randolph Hamilton Wynne	Yunlongshan Room 8:30-12:00
8	Remote Sensing of Mining & Mineral Utilization	Qin kai, Wegner Maus Victor, Bao Nisha	Quanshan Room 14:00-18:00
9	Architecture and Urban Underground Space	Wang Jian, Craig Hancock, Yu Xuexiang, Li Zengke	Shizishan Room 14:00-18:00
10	New Development and Innovative Applications of GNSS	Zhang Xiaohong, Li Pan, Zhang Kefei, Andoh Michael Afful, Yang Ling, Gao Jingxiang	Yunlongshan Room 14:00-18:00
11	Contemporary Geospatial Science and Technology and Its Role in Future Mining	Jamal Rostami, Song Shuli, Feng Wei, Wan Wenhui	Fenghuangshan Room 8:30-12:00
12	International Young Scholar Forum	Yu Xuexiang, Munawar Shah	Fenghuangshan Room 14:00-18:00

分论坛1 主题：国际矿山测量教育与学科发展

Session 1 Theme: International Mine Surveying Education and Training, Disciplinary Development

主持人：卞正富, Shabarov Arkady Nikolaevich

Chair: Bian Zhengfu, Shabarov Arkady Nikolaevich

地点：徐州绿地铂瑞酒店窑湾厅 Location: Yaowan Room, Xuzhou Greenland Platinum Hotel 时间：2023年10月28日8:00-12:00 Time: October 28, 2023 8:00-12:00	召集人：崔希民, 汪云甲, 雷少刚 Convener: Cui Ximin, Wang Yunjia, Lei Shaogang Contact: zbian@cumt.edu.cn; lsgang@126.com; +8613852155849
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Organizer/组织单位 ISM Commission I, China University of Mining and Technology, St. Petersburg Mining University, China University of Mining and Technology(Beijing) ISM第I委员会, 中国矿业大学, 俄罗斯圣彼得堡矿业大学, 中国矿业大学(北京)
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Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	08:00-08:10	Welcome speech	Bian Zhengfu Arkady Nikolayevich Shabarov	China University of Mining and Technology	Arkady Nikolayevich Shabarov Bian Zhengfu
1	08:10-08:25	The institute of mine surveyors of South Africa: the evolution of a Learned society	Hendrik Grobler	University of Johannesburg	
2	08:25-08:40	The development and current situation of surveying and mapping discipline at Anhui University of Science and Technology	Yu Xuexiang	Anhui University of Science and Technology	
3	08:40-08:55	The current state of surveying and geomechanics at mining enterprises in Kazakhstan	Nail Nizametdinov	Karaganda Technical University	
4	08:55-09:10	Thinking and practices of new mine surveying	Zhang Jin	Taiyuan University of Technology	
5	09:10-09:25	Irkutsk National Research Technical University: instrumentation and automation technologies of surveying	Alina Kshanovskaya	Irkutsk National Research Technical University	
6	09:25-09:40	Mine surveying education in Freiberg University of Mining and Technology	Jörg Benndorf	Freiberg University of Mining and Technology	
7	09:40-09:55	Reform and practice of surveying and mapping curriculum system based on strong foundation and characteristics in the new era	He Rong	Henan Polytechnic University	

Tea Break

8	10:10-10:25	The organization and practice of virtual teaching and research room for the talent training of surveying and mapping	Gao Jingxiang	China University of Mining and Technology	Zheng Nanshan Yuan Zhanliang Lei Shaogang
9	10:25-10:40	Surveying service in Uzbekistan	Sayyidjabbor Sayyidkosimov	The Union of Surveyors of Uzbekistan	
10	10:40-10:55	Construction and reflection on the first class major in local universities under the background of new engineering	Xu Xinchao	Liaoning Technical University	
11	10:55-11:05	Mining industry and mining education in Albania	Aida Bode	Polytechnic University of Tirana	
12	11:05-11:20	Strengthening characteristics, focusing on connotation, emphasizing innovation, and collaborative education-specialty construction and talent cultivation of surveying and mapping engineering at Shandong University of Science and Technology	Liu Shangguo	Shandong University of Science and Technology	
13	11:20-11:35	Proposals on international joint school based on industry-education integration in the field of geospatial information	Ni Han	Deqing Association for Geospatial Information Professionals	
14	11:35-11:50	Exploration on the construction and teaching innovation of surveying and mapping major at northeastern university	Bao Nisha	Northeastern University	

分论坛2 主题：矿山及矿产资源数字化

Session 2 Theme: Digitalization of Mine and Mineral Resource

主持人：Fred Cawood, 陈国良, 刘再斌

Chair: Fred Cawood, Chen Guoliang, Liu Zaibing

地点：徐州绿地铂瑞酒店狮子山厅
Location: Shizishan Room, Xuzhou Greenland Platinum Hotel
时间：2023年10月28日8:00-12:00
Time: October 28, 2023 8:00-12:00

召集人：车德福, 姜岩, 陈小伟, 王方田; 秘书：孙猛
Convener: Che Defu, Jiang Yan, Chen Xiaowei, Wang Fangtian Secretary: Sun Meng
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Organizer/组织单位
ISM Commission II, China University of Mining and Technology, University of The Witwatersrand, Shandong University of Science and Technology
ISM第II委员会, 中国矿业大学, 南非金山大学, 山东科技大学

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	08:00-08:05	Welcoming speech	Frederick Cawood	University of the Witwatersrand	Frederick Cawood Chen Guoliang
1	08:05-08:25	Point-spatial modeling of geomechanical processes occurring during open-pit mining of coal deposits	Sayyidjabbor Sayyidkosimov (Invited Speaker)	Tashkent State Technical University	
2	08:25-08:40	Intelligent dispatching and simulation technology based on digital twin in open pits	Gu Qinghua	Xi'an University of Architecture and Technology	
3	08:40-08:55	Very-high-resolution DEM based fine-detailed landform characterization in mine field	Zhou Xiran	China University of Mining and Technology	
4	08:55-09:10	The transparent geology support system for intelligent coal mines	Liu Zaibin	Xi'an CCTEG Transparent Geology Technology Co. Ltd.	
5	09:10-09:25	Automated geological modeling with ArcGIS Engine: a new approach for surface and subsurface data integration	Chen Guoxu	Hefei University of Technology	
6	09:25-09:40	The key technologies and application of 3D real scene in smart mines	Zhao Zhanjie	Chinese Academy of Surveying and Mapping	

Tea Break

7	09:50-10:10	The role of digital technologies when modernising the mining life cycle and its value chains for intelligent mining	Frederick Cawood (Invited Speaker)	University of the Witwatersrand	Sayyidjabbor Liu Zaibin
8	10:10-10:25	The technology and equipment of the comprehensive geophysical exploration in directional long borehole for the rapid excavation working face	Fan Tao	Xi'an CCTEG Transparent Geology Technology Co. Ltd.	
9	10:25-10:40	Intelligent surveying and mapping system for open-pit mines	Lu Peng	Beijing Jiexiang Tiandi Information Technology Co. Ltd.	
10	10:40-10:55	Tunnel information understanding and recognition based on multi-scale, multi-channel and multi-granularity feature information fusion	Zhang Zhenxin	Capital Normal University	
11	10:55-11:10	Accurate identification and detection for roadway surrounding rock deformations by 3D laser	Gao Chao	Shanxi Ningwu Yushupo Coal Industry Co. Ltd.	
12	11:10-11:25	Research and practice of three-dimensional mapping technologies for informatization mining	Xu Zhihua	China University of Mining and Technology(Beijing)	
13	11:25-11:40	The development of the intelligent mining supervision platform based on 3d real scene and its virtual simulation teaching application	Su Qun	Xiamen University of Technology	

PICO (Presenting Interactive Content)

No.	PICO Title	Author	Affiliation	Moderator
1	Three-dimensional automatic modeling method of steep thin orebody and complex stratum based on multi-point geostatistics	Wang Jiangmei	Northeastern University	Wang Fangtian Chen Xiaowei
2	Online wind speed measurement system and test method for chemical scene	Diao Jiajiu	Chongqing Yichengjiu Technology Co. Ltd.	
3	Research on tunnel water leakage detection method based on mobile laser scanning	Sun Haili	Capital Normal University	
4	Analogue modeling of love type channel wave and its response to faults	Liu Qiang	Xi'an CCTEG Transparent Geology Technology Co. Ltd.	

分论坛3 主题：测绘新装备与技术

Session 3 Theme: New Equipment and Technological Development of Surveying and Mapping

主持人：王健, Chen Xin, 季民, 张秋昭

Chair: Wang Jian, Chen Xin, Ji Min, Zhang Qiuzhao

地点：徐州绿地铂瑞酒店云龙湖厅

Location: Yunlong lake Room, Xuzhou Greenland Platinum Hotel

时间：2023年10月28日 14:00-18:00

Time: October 28, 2023 14:00-18:00

召集人：张秋昭, 石震, 季民; 秘书：李泽宇, 翟敏

Convener: Zhang Qiuzhao, Shi Zhen, Ji Min; Secretary: Li Zeyu, Zhai Min

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Organizer/组织单位

ISM Commission III, Shandong University of Science and Technology, Qingdao Key Laboratory of Beidou Navigation and Intelligent Spatial Information Technology, Chang'an University

ISM第III委员会, 山东科技大学, 青岛市北斗导航智能空间信息技术应用重点实验室, 长安大学

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	14:00-14:05	Welcoming speech	Jörg Benndorf	Freiberg University of Mining and Technology	Wang Jian
1	14:05-14:25	European Ground Motion Service (EGMS) for mining monitoring: enhancing safety information in mining operations	Roberto Tomas	University of Alicante	Chen Xin
2	14:25-14:40	Safety critical localization and mapping - Concepts and challenging issues in implementation	Wang Jinling	University of New South Wales	
3	14:40-14:55	Construction and preliminary experiment of UAV interferometric SAR system in mine surface deformation monitoring	Xie Yichun (Li Rulin)	Eastern Michigan University	
4	14:55-15:10	GNSS-based integrated measuring system (IMS) for operation with basic machines in brown coal mines	Tomasz Majkusiak	Robert Dudek STAMAX	
5	15:10-15:25	An introduction to the hexagon mine monitoring solution	Bai Hubin	Smart City Institute of Hexagon Geosystems Greater China	
Tea Break					
6	15:40-16:00	Reality capture and mining digital twins	Chen Xin	Trimble Geospatial	Ji Min
7	16:00-16:15	Development and application of gyroscopic total station in mine survey	Shi Zhen	Chang'an University	
8	16:15-16:30	Combining DInSAR and UAV aerial survey technologies to monitor mining subsidence	Lian Xugang	Taiyuan University of Technology	
9	16:30-16:45	Development and application of subway tunnels mobile laser scanning system	Zhang Qiuzhao	China University of Mining and Technology	
10	16:45-17:00	A TSA-DInSAR method of integrating SBAS-InSAR and DInSAR for monitoring mining land subsidence	Tao Qiuxiang	Shandong University of Science and Technology	Zhang Qiuzhao
11	17:00-17:15	Vegetation monitoring in mining areas using multi-platform LiDAR	Wang Guo	Henan University of Engineering	
12	17:15-17:30	Application of distributed LiDAR system in mining facet	Li Xu	Xi'an CCTEG Transparent Geology Technology Co. Ltd	
13	17:30-17:45	Overall safety monitoring method of tunnel based on cubic B-spline adaptive fitting	Wang Jian	Shandong University of Science and Technology	
PICO (Presenting Interactive Content)					
No.	PICO Title		Author	Affiliation	Moderator
1	The research on the ascending and descending data fusion processing based on MSBAS InSAR technology		Zhai Min	Shandong University of Science and Technology	Shi Zhen
2	Experimental study on fiber optic sensing monitoring of mining induced rock mass deformation		Du Wengang	Xi'an CCTEG Transparent Geology Technology Co. Ltd.	
3	Development and application of coal-based solid waste treatment technology for spontaneous combustion of gangue hill		Dong Hongjuan	Inner Mongolia University of Science & Technology	
4	Study on the spatial-temporal deformation characteristics on the slope of coal mine		Wu Xiaolong	Xi'an University of Science and Technology	Zhai Min
5	Point cloud-based algorithm for generating centrelines for different cross-sectional forms of tunnels		Jia Guixu	Shandong University of Science and Technology	
6	Improved DeepLLL ambiguity resolution method for the whole week		Jiao Yingxiang Li Kezhao	Henan University of Technology	
7	Modeling method of underground ore body based on borehole data		Wang Zhipeng, Ji Min, Li Hengyuan, Song Pengfei	Shandong University of Science and Technology	

分论坛4 主题：矿山开采沉陷与灾害监测

Session 4 Theme: Mining Subsidence and Disaster Monitoring

主持人：Ryszard Hejmanowski, 戴华阳
Chair: Ryszard Hejmanowski, Dai Huayang

地点：徐州绿地铂瑞酒店云龙湖厅
Location: Yunlong lake Room, Xuzhou Greenland Platinum Hotel
时间：2023年10月28日8:00-12:00
Time: October 28, 2023 8:00-12:00

召集人：郭广礼, 杨泽发, 邢学敏, 邓伟男 秘书：李怀展, 廉旭刚
Convener: Guo Guangli, Yang Zefa, Xing Xuemin, Deng Weinan
Secretary: Huaizhan Li, Lian Xugang;
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Organizer/组织单位
ISM Commission IV, China University of Mining and Technology (Beijing), China University of Mining and Technology, AGH University of Science and Technology, Central South University, Changsha University of Science & Technology
ISM第IV委员会, 中国矿业大学(北京), 中国矿业大学, 波兰AGH科技大学, 中南大学, 长沙理工大学

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	08:00-08:05	Welcoming speech	Axel Pressue	RWTH Aachen University	Axel Pressue Zhang Huaxing
1	08:05-08:20	Preserving outstanding value of historical mining sites by providing reliable and complex observation- case of Wieliczka salt mine a UNESCO world heritage site	Agnieszka Majkusiak (Invited Speaker)	AGH University of Science and Technology	
2	08:20-08:35	Current situation and prospect of mining subsidence control technology in China	Guo Wenbing (Invited Speaker)	Henan Polytechnic University	
3	08:35-08:50	Technology and application of building utilization in coal mining subsidence areas	Teng Yonghai	Ecological Environment Technology Ltd. of CCTEG	
4	08:50-09:05	Technology of subsidence control by coordinated full-area mining of thick coal seam and application	Dai Huayang	China University of Mining and Technology(Beijing)	
5	09:05-09:20	Subsidence control method and application of coordinated mining with "caving-backfilling-pillar"	Yan Yueguan	China University of Mining and Technology(Beijing)	
6	09:20-09:35	Strata movement mechanism of underground coal gasification without shaft and utilization of its combustion zone	Li Huaizhan	China University of Mining and Technology	
7	09:35-09:50	Monitoring methods and cases of coal mine shaft deformation	Zha Jianfeng	China University of Mining and Technology	

Tea Break

8	10:20-10:35	Failure process of mining-induced Jianshanying landslide in China from long-term and three-dimensional motions observed by optical, LiDAR and SAR datasets	Zhao Chaoying	Chang'an University	Ryszard Hejmanowski Yang Zefa
9	10:35-10:50	Estimating mining-induced 3D displacements from UAV-Based point clouds using a weighted colored ICP algorithm	Yang Zefa	Central South University	
10	10:50-11:05	Quantitative prediction for deformation and brine extraction of salt solution mining based on water-solution kinetic (WSK) InSAR model	Xing Xuemin	Changsha University of Science and Technology	
11	11:05-11:20	Near real time monitoring, the STONE project, Riotinto Mine in Huelva (Spain): The InSAR approach	Joaquin Escayo Menéndez	Spanish National Research Council	
12	11:20-11:35	Three-dimensional surface deformation in the Liaohe Oilfield, northeast China, observed from multi-track InSAR	Tang Wei	China University of Mining and Technology(Beijing)	
13	11:35-11:50	InSAR deformation monitoring and Dfsour® deformation interpretation	Hu Zhongbo	Spanish National Research Council	
14	11:50-12:05	Underground mining identification and working face feature inversion method based on InSAR technology	Wang Lei	Anhui University of Science and Technology	

PICO (Presenting Interactive Content)

No.	PICO Title	Author	Affiliation	Moderator
1	Spatio-temporal evolution characteristics and prediction method of coal mining subsidence waterlogging with high groundwater level	Zhu Xiaojun	Anhui University	Dai Huayang Guo Guangli
2	Retrieving high-precision three-dimensional deformation with three InSAR LOS measurements using L2-norm minimization: application to the Wuhai coalmine area	Zhang Lele	Inner Mongolia University of Technology	
3	Strata movement rule and regional control of deep mining with the super-thick and weak cementation overburden	Zhang Guojian	Shandong Jianzhu University	
4	Mining area subsidence monitoring and dynamic prediction based on DS-InSAR	Xu Jia	Liaoning Technical University	
5	Deformation control and subsidence prediction of burnt surrounding rock in coal gasification mining	Liu Xiaopeng	Anhui University of Science and Technology	
6	Strata movement characteristics and failure mechanism under deep coal mining in western China	Du Qiu	China University of Mining and Technology	
7	Frequent update of large-scale open-pit mine DEMs from multi-track repeat-pass interferograms using robust variance component estimation	Cao Zhanpeng	Central South University	

分论坛5 主题：地质与生态环境监测和治理

Session 5 Theme: Geological and Ecological Environment Monitoring and Governance

主持人：Simit Raval, 张绍良, 肖武, 张合兵

Chair: Simit Raval, Zhang Shaoliang, Xiao Wu, Zhang Hebing

地点：徐州绿地铂瑞酒店窑湾厅
Location: Yaowan Room, Xuzhou Greenland Platinum Hotel
时间：2023年10月28日14:00-18:00
Time: October 28, 2023 14:00-18:00

召集人：徐良骥, 黄锦楼, 张合兵 秘书：侯湖平, 米家鑫, 王培俊
Convener: Xu Liangji, Huang Jinlou, Zhang Hebing Secretary: Hou Huping, Mi Jiaxin, Wang Peijun Contact: slzhang@cumt.edu.cn; hphou@163.com; +8613852144183

Organizer/组织单位
ISM Commission V, University of New South Wales, China University of Mining and Technology, Anhui University of Science and Technology
ISM第V委员会, 新南威尔士大学, 中国矿业大学, 安徽理工大学

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	14:00-14:05	Welcome speech	Zhang Shaoliang	China University of Mining and Technology	Zhang Shaoliang
1	14:05-14:30	An introduction to new international standards for mine-site ecological restoration: how to leave a native positive legacy	Kingsley Dixon	President of Society for Ecological Restoration	
2	14:30-14:45	Advancing environmental monitoring with UAV-Based remote sensing technologies	Bikram Pratap Banerjee	The University of Southern Queensland	
3	14:45-15:00	Terms of reference: spatial, temporal and statistical considerations in effective monitoring programs	Tristan Campbell	Curtin University	Simit Raval
4	15:00-15:20	Spatial heterogeneity of reclaimed soil properties and optimized layout of monitoring points in opencast coal mining areas	Wang Jinman	China University of Geoscience, Beijing	
5	15:20-15:40	Equivalent transformation: principles of measuring ecological resilience in mines	Zhang Shaoliang	China University of Mining and Technology	
6	15:40-16:00	Resource environment ecological monitoring and evaluation and "three modernizations" utilization in high groundwater mining subsidence areas	Xu Liangji	Anhui University of Science and Technology	
Tea Break					
7	16:30-16:45	Remote sensing intelligent monitoring and service in ecological red line area	Chen Zhenchao	Aerospace Information Research Institute, Chinese Academy of Sciences	Xiao Wu
8	16:45-17:00	Review of urban heat island (UHI) for Ulaanbaatar	Ochirkhuyag Lkhamjav	Mongolian Geospatial association	
9	17:00-17:15	Simulation of land use change and its ecological risk prediction in China	Chen Xiaoyang	Anhui University of Science and Technology	
10	17:15-17:30	Quantitative influence of surface deformation process and its corresponding space-time evolution law of ecological environment caused by mining disturbance	Zhao Shangming	Taiyuan University of Technology	Zhang Hebin
11	17:30-17:45	Effects of land reclamation on soil microbial community structure, assembly and carbon sequestration function in Dongtan coal mine subsidence area	Ma Jing	Hohai University	
12	17:45-18:00	Study on the influence of ecological restoration in open pit coal mine on soil carbon pool	Xu Zhanjun	Shanxi Agricultural University	
PICO (Presenting Interactive Content)					
No.	PICO Title		Author	Affiliation	Moderator
1	Research on the diversity of earthworm in coal mining area and the remediation function of earthworm in reclaimed soil		Wang Xingming	Anhui University of Science and Technology	Zhang Shaoliang
2	Application of cellular automata model in ecological restoration of mining areas		Mi Jiaxin	China University of Mining and Technology	Simit Raval
3	Ecological restoration outcomes in mining areas: evaluating success against the new SER standards		Chen Zanxu	China University of Mining and Technology/ Curtin University	Xiao Wu
4	Periodic fluctuation monitoring of surface when high water/low water period in Yongxia mining area		Zhang Yan	Shunhe Coal Mine of Yongmei Group	Zhang Shaoliang
5	Monitoring in the resilience of mine ecological restoration engineering		Hou Huping	China University of Mining and Technology	Zhang Hebing
6	Comprehensive evaluation of ecological environment quality in Ganluo County based on remote sensing and GIS		Peng Huihui	Shandong University of Science and Technology	

分论坛6 主题：可持续发展与资源综合利用

Session 6 Theme: Sustainable Development and Comprehensive Utilization of Resources

主持人：邹友峰, Cao Yunxing, 杨文府

Chair: Zou Youfeng, Cao Yunxing, Yang Wenfu

地点：徐州绿地铂瑞酒店泉山厅

Location: Quanshan Room, Xuzhou Greenland Platinum Hotel

时间：2023年10月28日8:25-12:00

Time: October 28, 2023 8:25-12:00

召集人：袁占良，刘昌华，柴华彬 秘书：蔡来良

Convener: Yuan Zhanliang, Liu Changhua, Chai Huabing Secretary: Cai Lailiang;

Contact: cll@hpu.edu.cn; +8618739109523

Organizer/组织单位

ISM Commission VI, Henan Polytechnic University, Key Laboratory for Survey, Monitoring and Protection of Natural Resources in Mining Cities, Ministry of Natural Resources

ISM第VI委员会, 河南理工大学, 自然资源部矿业城市自然资源调查监测与保护重点实验室

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	08:25-08:30	Welcome speech	Zou Youfeng Cao Yunxing	Henan Polytechnic University	Zou Youfeng
1	08:30-08:45	Deformation mechanism and prevention of high speed railway roadbed in goaf site of Qinshui coal field	Zou Youfeng	Henan Polytechnic University	
2	08:45-09:00	Efficient development of coalbed methane and prevention and control of gas disaster in complex geological coal mine areas learning methods	Cao Yunxing	Canadian Academy of Engineering	
3	09:00-09:15	Crustal movements due to snow loading, rainwater loading, and groundwater extraction: Studies with a dense network of GNSS in Japan	Kosuke Heki	Hokkaido University	
4	09:15-09:30	Characteristics analysis and transformation path of space resources in closed mine	Dong Jihong	China University of Mining and Technology	
5	09:30-09:45	Leveraging remote sensing to map groundwater resources for sustainable development	Vagner Ferreira	Hohai University	
6	09:45-10:00	Application of geostationary meteorological satellite observations to Earth environmental monitoring	Yang Wei	Chiba University	

Tea Break

7	10:20-10:35	Application of mining subsidence calculation technology in sustainable development of mining area	Cai Lailiang	Henan Polytechnic University	Cao Yunxing
8	10:35-10:50	Assessment of soil moisture variability in mining environments utilizing GNSS-Remote sensing	El Rhadiouini Charafa	Nanjing University of Information Science and Technology	
9	10:50-11:05	Building information modeling and geographical information system integration based on UAV data for site assessment	Siti Nur Aliaa Roslan	University Putra Malaysia	
10	11:05-11:20	Quality parameters correlations during coal mining of Mongolia	Uranbaigali Gundsambuu	Mongolian University of Science and Technology	
11	11:20-11:35	Ground-based GNSS CORS network 3D high-precision water vapor products to monitor the temporal and spatial variation of short-term pm2.5 concentration	Guo Min	Henan Polytechnic University	
12	11:35-11:45	An improved deep interpolation lattice basis reduction algorithm for ambiguity resolution	Tian Chendong	Henan Polytechnic University	
13	11:45-11:55	Study on precision monitoring of three-dimensional similar material model based on raster scanning	Zhu Quanshun	Henan Polytechnic University	

PICO (Presenting Interactive Content)

No.	PICO Title	Author	Affiliation	Moderator
1	Mining surface collapse information extraction based on multi-source remote sensing Spatiotemporal evolution: a case study of Zhaogu mining area	Peng Jinyan	Henan Polytechnic University	Yang Wenfu
2	A combination algorithm for cycle slip detection and repair in low satellite elevation and ionospheric scintillation conditions	Ban Haofei	Henan Polytechnic University	
3	Integrated positioning and navigation, navigation algorithms, accurate positioning and navigation, comprehensive positioning and navigation technology	Liang Lingfeng	Henan Polytechnic University	

分论坛7 主题：矿区土地复垦与生态修复

Session 7 Theme: Land Reclamation and Ecological Restoration in Mining Areas

主持人：李晶, Anna Krzyszowska Waitkus, 黄赳, Randolph Hamilton Wynne

Chair: Li Jing, Anna Krzyszowska Waitkus, Huang Jiu, Randolph Hamilton Wynne

地点：徐州绿地铂瑞酒店云龙山厅 Location: Yunlongshan Room, Xuzhou Greenland Platinum Hotel 时间：2023年10月28日8:30-12:00 Time: October 28, 2023 8:30-12:00	召集人：李晶, 黄赳 秘书：毛缜, 霍江润 Convener: Li Jing, Huang Jiu Secretary: Mao Zhen, Huo Jiangrun Contact: lijing@cumb.edu.cn; +8615162235176
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Organizer/组织单位 Committee of Land Reclamation and Ecological Restoration, China Coal Society, Engineering Research Center of Mining Environment and Ecological Safety, Ministry of Education 中国煤炭学会煤矿土地复垦与生态修复委员会, 矿山生态安全教育部工程研究中心

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	8:30-8:35	Welcome speech	Anna Krzyszowska Waitkus	Environmental Consulting, Laramie, Wyoming, USA	Li Jing
1	8:35-8:55	Rehabilitation of environment damaged by mining activity in Albania	Edmond Hoxha	Polytechnic University of Tirana	Huang Jiu
2	8:55-9:15	Reclamation results at the large surface coal mine, western USA (Wyoming)	Anna Krzyszowska Waitkus	Environmental Consulting, Laramie, Wyoming, USA	
3	9:15-9:30	New technology of interlayered filling reclamation of coal mining subsidence land with yellow river sediment	Hu Zhenqi	China University of Mining and Technology	Anna Krzyszowska Waitkus
4	9:30-9:45	Effects of vegetation restoration on soil microbial community, and the functional groups related to carbon, nitrogen and phosphorus cycles in open-pit mining area of the loess plateau, China	Chen Fu	Hohai University	
5	9:45-10:00	Sustainable development of underground coal resources in shallow-groundwater areas for environment and socio-economic considerations: a case study in china methods	Zhang Ruiya	Shijiazhuang Tiedao University	

Tea Break

6	10:20-10:40	Improved characterization of reclamation outcomes through the synergistic combination of landsat time series stacks and 3D point clouds from LiDAR and digital aerial photography	Randolph Hamilton Wynne	Virginia Polytechnic Institute and State University	Li Jing
7	10:40-10:55	Identifying land disturbance caused by surface coal mining in China and land reclamation strategy	Xiao Wu	Zhejiang University	
8	10:55-11:10	Extraction of coal mine surface subsidence information and spatial-temporal evolution based on multi-source remote sensing-taking the zhaogu mining area as an example	Wang Shidong	Henan Polytechnic University	
9	11:10-11:25	Quantitative assessment and spatial analysis of ecological cumulative effects in mining areas	Li Jing	China University of Mining and Technology(Beijing)	Randolph Hamilton Wynne
10	11:25-11:40	Mechanism of water-preserved mining for ultra-thick coal seam in western china: an example from lli mining area	Liu Honglin	Xinjiang University	
11	11:40-11:55	The social and ecological sustainability of mining disturbed Land: A global assessment	Yang Yongjun	China University of Mining and Technology	

PICO (Presenting Interactive Content)

No.	PICO Title	Author	Affiliation	Moderator
1	Study on temporal and spatial variation characteristics of coal dust pollution in the Shengli mining area	Huo Jiangrun	China University of Mining and Technology(Beijing)	Mao Zhen
2	Impacts of landscape patterns on habitat quality in coal resource-exhausted cities: a spatial-temporal dynamic analysis highlighting scale effects	Li Zixuan	China University of Mining and Technology	
3	Coupling impacts of urban expansion and mining activities on ecological environment quality and their spatial spillover effects: a case study of suburban open-pit mining concentration area in Jinan city	Liu Haobei	Shandong Jianzhu University	
4	An automated extraction method for large-scale open pit coal mining disturbance ranges	Peng Chuanying	China University of Mining and Technology(Beijing)	Tang Wei
5	Impact of coal mining subsidence on soil moisture disturbance in loess covered areas	Ma Ting	Xi'an University of Science and Technology	

分论坛8 主题：遥感监测矿产开采与利用

Session 8 Theme: Remote Sensing of Mining & Mineral Utilization

主持人：秦凯, Wegner Maus Victor, 包妮沙
Chair: Qin kai, Wegner Maus Victor, Bao Nisha

地点：徐州绿地铂瑞酒店泉山厅
Location: Quanshan Room, Xuzhou Greenland Platinum Hotel
时间：2023年10月28日14:00-18:00
Time: October 28, 2023 14:00-18:00

召集人：秦凯, 包妮沙, 宋泽阳 秘书：胡文敏
Convener: Qin Kai, Bao Nisha, Song Zeyang Secretary: Hu Wenmin
Contact: qinkai@cumt.edu.cn; huwm@cumt.edu.cn; +8615950663287

Organizer/组织单位
Digital Energy Professional Committee under Chinese National Committee of ISDE, Northeastern University, International Journal of Coal Science & Technology
国际数字地球学会中国国家委员会 (ISDE中委会) 数字能源专业委员会, 东北大学, International Journal of Coal Science & Technology

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	14:00-14:05	Welcome speech	Qin Kai	China University of Mining and Technology	Qin Kai
1	14:05-14:25	Trends in the application of Earth observation to mapping environmental and social impacts	Alex Lechner	Monash University Indonesia	
2	14:25-14:40	MiecoEye: quantitative remote sensing monitoring and intelligent analysis system for mine ecological	Li Jun	China University of Mining and Technology(Beijing)	
3	14:40-15:00	Imaging spectroscopy for monitoring toxic elements within the mining environments; case study: Sarcheshmeh copper mine	Vahid Khosravi	Czech University of Life Sciences Prague	Wegner Maus Victor
4	15:00-15:15	Detection and estimating mine tailings area and properties using multi-source satellite data and deep learning methods	Bao Nisha	Northeastern University	
5	15:15-15:30	Research on remote sensing of soil and vegetation parameters and application in mining area	Sun Hao	China University of Mining and Technology(Beijing)	
6	15:30-15:45	Monitoring persistent coal fire using Landsat time series data from 1986 to 2020	Song Zeyang	Xi'an University of Science and Technology	

Tea Break

7	16:05-16:25	Challenges in big-Earth observation data analytics for global-scale mining land use surveying	Wegner Maus Victor	Vienna University of Economics and Business/Research fellow	Bao Nisha
8	16:25-16:40	Recognizing China's coal mines from satellite images	Qin Kai	China University of Mining and Technology	
9	16:40-16:55	Mine area dataset in China and the hotspots identification	Tang Liang	Chengdu University of Technology	
10	16:55-17:10	Automatically identifying the vegetation destruction and restoration of various open-pit mines utilizing remotely sensed images: Auto-VDR	Zhang Chengye	China University of Mining and Technology(Beijing)	Alex Lechner
11	17:10-17:25	Application of high-resolution mapping satellite images in monitoring of surface deformation in mining areas	Hu Wenmin	China University of Mining and Technology	
12	17:25-17:40	Application of remote sensing images in intelligent management of metal open-pit mine	He Zhengxiang	China University of Mining and Technology	

PICO (Presenting Interactive Content)

No.	PICO Title	Author	Affiliation	Moderator
1	A remote sensing index for assessing long-term ecological impact in arid mined land	Meng Dantong	Northeastern University	Qin Kai
2	A novel spatiotemporal data fusion method for digital mine ecological environment based on Quadrilateral Dggs Rheapix	Meng Dantong	China University of Mining and Technology	
3	PIESAT-The NVWA satellite constellation focus on mine change	Lu Jufeng	Piesat Information Technology Co. Ltd.	

分论坛9 主题：建筑与城市地下空间
Session 9 Theme: Architecture and Urban Underground Space
主持人：王坚, Craig Hancock, 余学祥, 李增科
Chair: Wang Jian, Craig Hancock, Yu Xuexiang, Li Zengke

地点：徐州绿地铂瑞酒店狮子山厅
Location: Shizishan Room, Xuzhou Greenland Platinum Hotel
时间：2023年10月28日 14:00-18:00
Time: October 28, 2023 14:00-18:00

召集人：余学祥, 范涛, 李增科 秘书：刘飞
Convener: Yu Xuexiang, Fan Tao, Li Zengke Secretary: Liu Fei
Contact: wangjian@bucea.edu.cn; +8618611402060

Organizer/组织单位
Beijing University of Civil Engineering and Architecture, Anhui University of Science and Technology
北京建筑大学, 安徽理工大学

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	13:55-14:00	Welcome speech	Wang Jian	Beijing University of Civil Engineering and Architecture	Wang Jian
1	14:00-14:15	Mine surveying in the built environment: considerations for the role of the mine surveyor in urban areas	Fred Cawood	University of the Witwatersrand	Craig Hancock
2	14:15-14:30	Geological mapping at scale of 1:50,000 using Alos/Palsar data	Ganbold Ulziisaikhan	Mongolian Geospatial association	
3	14:30-14:45	Multi-source data fusion for indoor and outdoor smartphone location methods	Zhu Huizhong	Liaoning Technical University	
4	14:45-15:00	Multi-source fusion techniques for high-precision indoor positioning in complex subterranean environments	Lv Weicai	Anhui University of Science and Technology	
5	15:00-15:15	Seamless navigation and positioning in urban underground space	Li Zengke	China University of Mining and Technology	
6	15:15-15:30	Multi-GNSS/LiDAR/INS fusion high precision positioning and mapping	Hu Hong	Anhui University	Yu Xuexiang
7	15:45-16:00	Review of visual slam environment perception technology and intelligent surveying and mapping application	Liu Fei	Beijing University of Civil Engineering and Architecture	

Tea Break

8	16:15-16:30	Digitalisation of existing buildings with underground basements that aim to focus on net zero	Craig Hancock	Loughborough University	Yu Xuexiang
9	16:30-16:45	Methodological basis of justification parameters of slopes ledges and sides of quarries	Nail Nizametdinov	Karaganda Technical University	
10	16:45-17:00	Tight integration of low-cost GNSS PPP/INS for seamless land vehicle navigation	Liu Fei	University of Calgary	
11	17:00-17:15	An GNSS/UWB based robust emergency seamless positioning model for indoor environments	Han Houzeng	Beijing University of Civil Engineering and Architecture	Li Zengke
12	17:15-17:30	Experimental research on tunneling surveys combining gnss and terrestrial measurements	Li Guanqing	China University of Mining and Technology	
13	17:30-17:45	Research on urban underground space positioning algorithm based on UWB technology	Lian Zengzeng	Henan Polytechnic University	
14	17:45-18:00	Stability risk assessment of underground rock pillars using logistic model trees	Li Ning	Anhui University of Science and Technology	
15	18:00-18:15	A rapid segmentation method for extracting unstructured highway road surface from mobile liDAR system data	Ning Yipeng	Shandong Jianzhu University	

PICO (Presenting Interactive Content)

No.	PICO Title	Author	Affiliation	Moderator
1	GNSS/PDR localization algorithm based on graph optimization and its application	Li Lihua Fan Jiayi	China University of Geosciences, Beijing	Li Zengke
2	Investigation of ground-based radar baseline correction methods in urban monitoring	Zhang Zeyu	Hong Kong Polytechnic University	
3	Detecting the Great Wall dynamics response under thunder loading with GNSS and MEMS accelerometers	Liu Xu Liao Yunmao	Beijing University of Civil Engineering and ArchitectureS	

分论坛10 主题：GNSS技术及创新应用

Session 10 Theme: New Development and Innovative Applications of GNSS

主持人：张小红，李盼，张克非，Andoh Michael Afful，杨玲，高井祥

Chair: Zhang Xiaohong, Li Pan, Zhang Kefei, Andoh Michael Afful, Yang Ling, Gao Jingxiang

地点：徐州绿地铂瑞酒店云龙山厅

Location: Yunlongshan Room, Xuzhou Greenland Platinum Hotel

时间：2023年10月28日14:00-18:00

Time: October 28, 2023 14:00-18:00

召集人：张小红，李星星，刘学习 秘书：孙鹏

Convener: Zhang Xiaohong, Li Xingxing, Liu Xuexi Secretary: Sun Peng Contact:

profkzhang@cumt.edu.cn; peng_sun@cumt.edu.cn; +8615152813889

Organizer/组织单位

China University of Mining and Technology, Xuzhou Surveying and Mapping Geographic Information Association

中国矿业大学，徐州市测绘地理信息学会

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	14:00-14:05	Welcome speech	Zhang Kefei	China University of Mining and Technology	Zhang Xiaohong
1	14:05-14:20	Intelligent satellite systems for trusted autonomous operations	Andoh Michael Afful	RMIT University	
2	14:20-14:35	The next wave of GNSS tropospheric sounding - perspective and retrospective	Zhang Kefei	China University of Mining and Technology	
3	14:35-14:50	Improving the capability of water vapor retrieval from Landsat 8 using ground-based GNSS measurements	Xu Yan	Shandong University	
4	14:50-15:05	Extracting GNSS ionospheric scintillation factor from multi-sampling interval geodetic receiver data	Zhao Dongsheng	China University of Mining and Technology	Li Pan
5	15:05-15:20	Analysis and elimination of GNSS diffraction error in high occlusion environments	Xi Ruijie	Wuhan University of Technology	
6	15:20-15:35	Regional/single station zenith tropospheric delay combination prediction model based on radial basis function neural network and improved long short-term memory	Yang Xu	Anhui University of Science and Technology	
7	15:35-15:50	A semi-tightly coupled BDS-3 RTK/UWB algorithm based on the position domain in harsh environments	Dai Peipei	Shandong University	

Tea Break

8	16:05-16:20	A new large-area hierarchical PPP-RTK service strategy	Li Pan (Invited Speaker)	Changan University	Andoh Michael Afful
9	16:20-16:35	Understanding GNSS integrity monitoring from geodetic background	Yang Ling	Tongji University	
10	16:35-16:50	Uncalibrated phase delay estimation and ambiguity resolution for BDS-3 six-frequency uncombined PPP with legacy B1I/B3I and new B1C/B2a/B2b/B2a+b signals	Pan Lin	Central South University	
11	16:50-17:05	BDS-3/BDS-2 FCB estimation considering different influencing factors and precise point positioning with ambiguity resolution	Liu Xuexi	China University of Mining and Technology	
12	17:05-17:20	Error analysis of ground-based GNSS-IR altimetry and its compensation model	Zhou Wei	Anhui University of Science and Technology	Yang Ling
13	17:20-17:35	Accuracy analysis of error compensation of BDs broadcast ionospheric model based on abc-bp neural network	Su Xing	Shandong University of Science and Technology	
14	17:35-17:50	A GNSS RTK/INS/UWB tightly coupled integration positioning system for low-cost unmanned ground vehicle	Wang Sen	Shandong University	
15	17:50-18:05	Research and Practice on the Application of Beidou in the Construction of Smart Mines	Zhang Xiaodong	Hi-Target Surveying Instrument Co.Ltd	

PICO (Presenting Interactive Content)

No.	PICO Title	Author	Affiliation	Moderator
1	Enhancing short-term prediction of bds-3 satellite clock bias based with bso optimized bp neural network	Ya Shaoshuai	Shandong University of Science and Technology	Yang Ling
2	Improved Algorithm for Fixed Partial Ambiguity Based on IGGIII Robust State Estimation	Xue Jiaqi	Chang'an University	

分论坛11 主题：现代空间信息技术与未来采矿 Session 11 Theme: Contemporary Geospatial Science and Technology and Its Role in Future Mining 主持人：Jamal Rostami, 宋淑丽, 冯伟, 万文辉 Chair: Jamal Rostami, Song Shuli, Feng Wei, Wan Wenhui					
地点：徐州绿地铂瑞酒店凤凰山厅 Location: Fenghuangshan Room, Xuzhou Greenland Platinum Hotel 时间：2023年10月28日8:30-12:00 Time: October 28, 2023 8:30-12:00		召集人：邸凯昌, Serkan Saydam, 叶茂 秘书：时洪涛 Convener: Di Kaichang, Serkan Saydam, Ye Mao Secretary: Shi Hongtao Contact: hongtao.shi@cumt.edu.cn; +8615629085921			
Organizer/组织单位 China University of Mining and Technology, Colorado School of Mines 中国矿业大学, 美国科罗拉多矿业大学					
Oral Presentation					
No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	08:30-08:35	Welcome speech	Zhang Kefei	China University of Mining and Technology	Song Shuli
1	08:35-08:50	Magmatism in the harmonious metabolism of the Earth: an endless source of geothermal energy	Hu Tianbao	China National Administration of Coal Geology	
2	08:50-09:05	Site Mapping by the autonomous site preparation: Excavation, compaction, and testing (aspect) rover	Jamal Rostami	Colorado School of Mines	
3	09:05-09:20	Modeling the gravitational field of an irregularly shaped ore-bearing asteroid with inhomogeneous density by using a novel CFD-based method	Yin Zhi	Jiangsu Ocean University	Jamal Rostami
4	09:20-09:35	Propagation delay calibration of VLBI in deep space exploration	Song Shuli	Chinese Academy of Sciences	
5	09:35-09:50	The GWR model-based regional downscaling of GRACE/GRACE-FO derived groundwater storage to investigate local-scale variations in the North China Plain	Shoaib Ali	Southern University of Science and Technology	
6	09:50-10:05	Spectral theory and applications for remote sensing exploration of the Moon and Asteroids	Lu Yu	Chinese Academy of Sciences	
Tea Break					
7	10:15-10:30	Near real time monitoring, the STONE project, Riotinto Mine in Huelva (Spain): The passive seismic interferometry approach	Martin Heinz Salvador Schimmel	Spanish National Research Council (CSIC)	Wan Wenhui
8	10:30-10:45	GRAIL gravity gradients evidence for a potential lava tube at marius hills on the moon	Feng Wei (Invited Speaker)	Sun Yat-sen University	
9	10:45-11:00	Exploring the challenges and benefits of space mining	Alexandre Meurisse	Space Resources Engineer of Origin Space Technology Co. Ltd.	
10	11:00-11:15	Asteroid 3D reconstruction and sampling point selection	Wan Wenhui (Invited Speaker)	Aerospace Information Research Institute, Chinese Academy of Sciences	Feng Wei
11	11:15-11:30	Seamless navigation and positioning for mining area and surficial construction deformation monitoring technology and application	Wang Qianxin (Invited Speaker)	China University of Mining and Technology	
12	11:30-11:45	Initial orbit determination of space debris with ground based optical observation	Lei Xiangxu	Shandong University of Technology	
13	11:30-12:00	Phobos' degree-1 ellipsoidal harmonic gravity field recovery from two Mars express flybys	Guo Xi	PhD Candidate of Wuhan University	
PICO (Presenting Interactive Content)					
No.	PICO Title		Author	Affiliation	Moderator
1	A new shape model of Phobos		Chen Min	Wuhan University	Feng Wei
2	Digital twin of WPTH		Kuldip Rohit	Loughborough University	

分论坛12 主题：青年学者论坛

Session 12 Theme: International Young Scholar Forum

主持人：余学祥, Munawar Shah
Chair: Yu Xuexiang, Munawar Shah

地点：徐州绿地铂瑞酒店凤凰山厅
Location: Fenghuangshan Room, Xuzhou Greenland Platinum Hotel
时间：2023年10月28日14:00-18:00
Time: October 28, 2023 14:00-18:00

召集人：王坚, 赵兴旺, 李培现 秘书：刘超
Convener: Wang Jian, Zhao Xingwang, Li Peixian; Secretary: Liu Chao
Contact: chliu1@aust.edu.cn; +8618255420251

Organizer/组织单位
Anhui University of Science and Technology
安徽理工大学

Oral Presentation

No.	Time	Presentation Title	Speaker	Affiliation	Moderator
0	13:55-14:00	Welcome speech	Yu Xuexiang	Anhui University of Science and Technology	Yu Xuexiang
1	14:00-14:15	GNSS/MIMUS/accelerometer used deformation monitoring technology and application	Wang Jian	Beijing University of Civil Engineering and Architecture	
2	14:15-14:30	Earthquake's precursors in atmosphere from remote sensing	Munawar Shah	Institute of Space Technology, Islamabad, Pakistan	
3	14:30-14:45	GFENet: a high performance extraction model for ground fissures in coal mining areas based on efficient fusion of transformer and CNN	Li Peixian	China University of Mining and Technology(Beijing)	
4	14:45-15:00	Ecological function improvement for open-pit mine dump in severe cold area	Gong Chuangang	Anhui University of Science and Technology	
5	15:00-15:15	Prediction of mining-induced surface movement duration based on an improved Knothe time model	Zhang Liangliang	Anhui University of Science and Technology	
6	15:15-15:30	Research on pedestrian indoor positioning based on smartphone multi-carrying location	Geng Jijun	Anhui University of Science and Technology	
7	15:30-15:45	Multi-frequency and multi-system phase observable-specific signal bias estimation method	Liu Tianjun	Wuhan University	

Tea Break

8	16:00-16:15	Research on multi-parameter response and key technologies of deep well mining induced rock stratum migration	Sun Binyang	Anhui University of Science and Technology	Munawar Shah
9	16:15-16:30	State domain integrity monitoring theory and its application in GNSS positioning	Yu Zhangjun	China University of Mining and Technology	
10	16:30-16:45	Research on stripping ratio averaging method of backhoe hydraulic excavators based on mathematical simulation	Rybnikova Iana	Anhui University of Science and Technology	
11	16:45-17:00	Repair of SAR data displacement field void pixel based on RGC-BP model	Tan Hao	Anhui University of Science and Technology	
12	17:00-17:15	Research on the boundary parameters of mining subsidence under thick loose layer in Pan Xie mining area	Li Jingxian	Anhui University of Science and Technology	
13	17:15-17:30	Uncovering the relationship among spatial vitality, perception, and environment of urban underground space	Xu Yajie	Anhui University of Science and Technology	
14	17:30-17:45	High-precision imaging method for roadway full space advanced detection based on wave equation modern migration	Li Shenglin	Anhui University of Science and Technology	

九、研究生论坛

IX Post-Graduate Student Forum

时间: 2023年10月28日8:00-15:30

Time: October 28, 2023 8:00-15:30

地点: 徐州绿地铂瑞酒店大洞山厅

Location: Dadongshan Room, Xuzhou Greenland Platinum Hotel

Chair: Xu Aigong, Agnieszka Malinowska

Convener: Wang Qianxin, Zhu Huizhong, Yang Yongjun, Zhao Dongsheng

Secretary: Zhao Dongsheng, Shen Yifan

Welcome Speech

Time	Speaker	Affiliation
7:50-7:55	Prof. Xu Aigong	Liaoning Technical University
7:55-8:00	Prof. Agnieszka Malinowska	AGH University of Science and Technology

Section 1: Navigation Positioning

Co-Chair: Xu Aigong, Wang Qianxin, Zhu Huizhong

Program Chair: Zhao Dongsheng

Time	Speaker	Affiliation	Presentation Title
8:00	Tao Andi	Anhui University of Science and Technology	Smart phone GNSS data quality analysis and stochastic model establishment
8:05	Yang Ziyi	Chang' an University	Research on four-position nonequal precision north seeking algorithm of fiber optic gyroscope total station based on iteration method with variable weights
8:10	Dong An	Anhui University of Science and Technology	Evaluation of tropospheric delay correction based on StaMPS-PS timing InSAR
8:15	Cui Shuanglei	China University of Mining and Technology	Analysis of global ionospheric scintillation disturbance and GPS positioning accuracy interference driven by M-class solar flare induced geomagnetic storm: a case study
8:20	Zhao Hanguang	Liaoning Technical University	Real-time detection of conveyor belt deviation based on first-order feature difference constraints
8:25			Comments and Suggestions
8:30	Tao Yuan	China University of Mining and Technology	DeepO-SF a deep learning-enhanced observation-domain sidereal filtering for BDS-3 multipath mitigation

8:35	Gui Yuqiang	Liaoning Technical University	Improving the accuracy of GNSS-IR sea surface height measurement based on a novel ionospheric refraction correction optimization method
8:40	Liu Zhenbin	China University of Mining and Technology	Real-time location and mapping based on multi-source fusion in the environment without GPS signal
8:45	Wen Jianyu	Liaoning Technical University	Improving the accuracy of sea surface height measurement based on tropospheric inverse-distance spatiotemporal-fusion correction method
8:50	Jia Shilei	China University of Mining and Technology	Research on NLOS recognition method based on DBSCAN clustering optimization algorithm and SVM
8:55	Comments and Suggestions		
9:00	Han Yuchen	Anhui University of Science and Technology	Research on optimization algorithms for smartphone pedestrian dead reckoning in indoor environments
9:05	Wang Teng	China University of Mining and Technology	An algorithm for locating subcritical underground goaf based on INSAR technique and improved probability integral
9:10	Fu Xiaotian	Liaoning Technical University	Three-dimensional reconstruction and geometric morphology analysis of lunar small craters within the patrol range of the Yutu-2 rover
9:15	Li Mengmeng	China University of Mining and Technology	Assessment of multiple ambiguity resolution methods in LEO precision orbit determination
9:20	Liu Zhiqiang	Liaoning Technical University	Performance analysis of GPS/BDS-3/Galileo/QZSS overlapping frequency long-distance undifferenced RTK positioning
9:25	Comments and Suggestions		
9:30	Cheng Tong	China University of Mining and Technology	A GNSS ultra-rapid orbit and clock offset estimation model based on the constraint of BDS-3 onboard clock
9:35	Wang Mengxuan	Chang' an University	A GNSS-RTK terminal integrity monitoring algorithm considering the error characteristics of different environments
9:40	Zhang Han	China University of Mining and Technology	Assessing the performance of multi-GNSS precise point positioning ambiguity resolution with different products
9:45	Fan Jiabao	Liaoning Technical University	Research on the positioning performance of robust RTK in low-cost GNSS terminals
9:50	Zhao Jiexiang	China University of Mining and Technology	SLAM algorithm for complex noise environment in the underground coal mine
9:55	Hu Jie	Wuhan University	A vision-assisted method with online spatial and temporal compensation for improving the performance of GNSS/SINS integration in urban environment
10:00	Ding Rui	China University of Mining and Technology	A high spatiotemporal resolution inversion method for Multi-GNSS-IR snow depth considering terrain characteristics
10:05	Comments and Suggestions		

Section 2: Remote Sensing

Co-Chair: Li Jun, Lang Fengkai, Ling Xiaolu

Program Chair: Li Guanqing

Time	Speaker	Affiliation	Presentation Title
10:10	Lv Xiaoxuan	Henan Polytechnic University	Fine classification of typical crops based on UHD185 hyperspectral data
10:15	Meng Dantong	Northeastern University	A remote sensing index for assessing long-term ecological impact in arid mined land
10:20	Li Zhiyuan	Shandong University of Science and Technology	Adaptive fusion method of point cloud from different platforms based on Supervoxel
10:25	Ammara Gill	Henan Polytechnic University	A hybrid deep learning approach for ground object information extraction from hyperspectral images using deep learning approach
10:30	Song Pengfei	Shandong University of Science and Technology	Denoising algorithm for inclined tunnel point cloud data based on irregular contour features
10:35	Comments and Suggestions		
10:40	Ainash Ashimova	Kazakh National Research Technical University	Processing of ash and slag waste from thermal power plants to obtain building materials
10:50	Su Yingying	Henan Polytechnic University	Research on remote sensing inversion method for soil drought and its application in application in agriculture
10:55	Zhang Xinnai	China University of Mining and Technology	Building vector extraction and contour fitting based on segment anything model
11:00	Liu Ningjie	Jiangsu Normal University	A new sequential homogeneous pixel selection algorithm for distributed scatterer InSAR

11:05	Liu Chenchen	Henan Polytechnic University	Building extraction method of remote sensing image based on multi-scale information fusion
11:10	Comments and Suggestions		
11:15	Zhang Kewei	China University of Mining and Technology	Underground coal fire locating based on InSAR technique and elastic dislocation model
11:20	Fang Xinxin	Liaoning Technical University	Rectifying method for rural vector data based on differential characteristics
11:25	Wu Zhiguo	Anhui University of Science and Technology	Research on building extraction based on CBAM VGG16-UNet semantic segmentation model
11:30	Hu Ning	Shandong University of Science and Technology	A 3D automated modelling method for road infrastructure
11:35	Hu Xiaojing	Henan University of Technology	Research on a segmentation quality evaluation method of high score image considering area difference
11:40	Comments and Suggestions		
11:45	Cai Guosheng	Henan Polytechnic University	Research on the multi-parameter SIF downscaling method for estimating winter wheat yield
11:50	Duan Yongkang	Liaoning Technical University	Change detection of remote sensing images for building structures based on cycle siamese VGG16
11:55	Liao Yunmao	Beijing University of Civil Engineering and Architecture	A monocular camera online calibration method based on point and line features detection
12:00	Suo Zihui	China University of Mining and Technology	Active-passive remote sensing identification of underground coal fire zones with joint constraints of temperature and surface deformation time series
12:05	Zhang Haobin	Henan Polytechnic University	Dynamic monitoring of winter wheat growth and health status in coal mining subsidence areas combined with active and passive remote sensing
12:10	Wu Yuhao	Shandong University	Analysis of a heavy rainstorm process in Henan, China based on multi-source data
12:15	Comments and Suggestions		

Section 3: Mine Surveying

Co-Chair: Yang Zefa, Agnieszka Malinowska, Fan Hongdong, Wang Lei

Program Chair: Zhou Xiran

Time	Speaker	Affiliation	Presentation Title
13:30	Mwenya Mwenya	Anhui University of Science and Technology	Analysis of mechanical characteristics of mine roadway u-shaped steel support under the multi-factor influence
13:35	Zhang Lingling	Central South University	Estimating mining-induced surface three-dimensional displacements from UAV-based stereo photogrammetry using a weighted colored ICP algorithm
13:40	Yin Hejian	China University of Mining and Technology	A design approach of panel size for the cooperative development of cropland protection and coal mining in a coal-cropland overlapping area
13:45	Sun Zhihao	Anhui University of Science and Technology	A method for predicting subsidence in thick loose layer mines based on segmental weighted parameter assignment
13:50	Rao Xiaokang	Wuhan University	Design and application of smart mine blasting platform
13:55	Comments and Suggestions		
14:00	Birgul Topal	The University of New South Wales	Partial registration of point clouds using rock bolts in mining
14:10	Cao Zongyou	Anhui University of Science and Technology	Study on the coordinated settlement patterns between loose aquifer loss and surface ground due to groundwater Depletio
14:15	Cao Zhanpeng	Central South University	Frequent update of large-scale DEMs from multi-track repeat-pass interferograms using robust variance component estimation
14:20	Zhu Mingfei	Anhui University of Science and Technology	Comparative study of surface deformation monitoring methods in mining areas using active and passive remote sensing technologies

14:25	Ding Yaxin	China University of Mining and Technology, Beijing	Analysis of the impact of open-pit mining and restoration on land use changes in Shendong coal base since the "13th Five-Year Plan"
14:30	Comments and Suggestions		
14:35	Wang Xin	Henan Polytechnic University	Simulation study on surface deformation of shallow buried coal seam mining in gully area
14:40	Zhang Nianbin	China University of Mining and Technology	Multi-source remote sensing fine monitoring and analysis of landslide collapse at Xinjing open-pit mine, Inner Mongolia
14:45	Xie Shicheng	Anhui University of Science and Technology	GNSS zenith direction time series denoising methods for mine subsidence monitoring
14:50	Yang Xingchen	China University of Mining and Technology	Impacts of open-pit coal mining and livestock grazing on plant diversity in a steppe from the perspective of remote sensing
14:55	Liu Lei	Shandong Jianzhu University	Efficient voxel models construction of ore bodies using the improved winding number algorithm and cuda parallel computing
15:00	Comments and Suggestions		
15:05	Li Jing	Technische Universität Bergakademie Freiberg	Quantitative analysis of different SLAM algorithms for geomonitoring in an underground test field
15:15	Zhang Yanjun	China University of Mining and Technology, Beijing	Development law and prevention methods of mining-induced ground cracks: A review
15:20	Wei Bowei	Shandong University of Science and Technology	Research on identification and development law of mining cracks based on neural network
15:25	Yuan Yafei	China University of Mining and Technology	Delineation method and application of backfill mining influence range based on fusion of coal mining subsidence principle and INSAR monitoring
15:30	Comments and Suggestions		

Section 4: Ecological Environment

Co-Chair: Li Jing, Anna Krzyszowska Waitkus, Zhu Xiaojun

Program Chair: Liu Xin

Time	Speaker	Affiliation	Presentation Title
15:35	Wu Qinyu	China University of Mining and Technology	Detecting the effects of opencast mining on ecosystem services value in arid and semi-arid areas based on time-series remote sensing images and google earth engine (GEE)
15:40	Xue Yongan	Henan Polytechnic University	Comparative study on the machine learning-based prediction models of developmental sensitivity to subsidence disasters
15:45	Dai Linda	China University of Mining and Technology, Beijing	The spatio-temporal variation law of vegetation net primary productivity in low-strength mining area
15:50	Xu Lan	Anhui University of Science and Technology	Effect of different biochar synergistic vermicomposting on physicochemical properties of municipal sludge and heavy metals
15:55	Luo Caiyu	China University of Mining and Technology	Measurement of supply and demand balance of urban park green space based on spatiotemporal big data
16:00	Comments and Suggestions		
16:05	Niu Qiang	Anhui University of Science and Technology	A new LSTM-ERATM model for the determination of atmospheric weighted mean temperature in GNSS PWV retrieval
16:10	Wu Yingga	China University of Mining and Technology	Study on land ecological vulnerability and evolution of coal mining subsidence in Bulianta Mining area, Inner Mongolia
16:15	Yin Aojie	Anhui University of Science and Technology	Effects of different particle size modified gangue additions on soil carbon pool management indices
16:20	Zhang Yaping	China University of Mining and Technology, Beijing	Evaluation and attribution analysis of vegetation restoration effect of open-pit coal mine dumping sites in arid and semi-arid areas
16:25	Frank Winfrid Masome	Henan Polytechnic University	Evaluation of spatio-temporal evolution of ecosystem services in Huai River basin from 2000 to 2020
16:30	Comments and Suggestions		

16:35	Li Mengli	China University of Mining and Technology	Soil heavy metal contamination and health risk assessment in large open pit mines
16:40	Lu Jingyang	Henan Polytechnic University	The trend of coal mining-disturbed CDR AVHRR NDVI (1982-2022) in a plain agricultural region— case study on Yongcheng coal mine and its buffers in China
16:45	Wang Weilin	China University of Mining and Technology	Identification and analysis of production-living-ecological space in mining city based on multi-source geospatial data—a case study of Xuzhou City
16:50	Qin Haiyue	Anhui University of Science and Technology	Study on the ratio parameter optimization of bulk coal-based solid waste low-water filling material
16:55	Zhang Wanqiu	China University of Mining and Technology, Beijing	Multiscale geographically weighted regression-based analysis of vegetation driving factors and mining-induced quantification in the Fengfeng district, China.
17:00	Comments and Suggestions		
17:05	Wang Xueqing	China University of Mining and Technology	Carbon ecological security assessment based on the decoupling relationship between carbon balance pressure and ecological quality in Xuzhou City, China
17:10	Li Yingshuang	China University of Geosciences, Wuhan	Multiscale and multisource data reveal the ecological restoration of mineral concentration areas under different disturbances
17:15	Qin Jiahui	China University of Mining and Technology	An investigation of spatial equity of urban park considering the social and ecological functions
17:20	Wang Shiwei	Henan Polytechnic University	Diagnosis of vegetation damage and ecological restoration assessment of open-pit mining in desertified grassland area
17:25	Wang Wenjie	China University of Mining and Technology	The spatial distribution characteristics and fertility evaluation of soil nutrients in reclaimed soil of large coal base mining areas
17:30	Comments and Suggestions		

十、专题会议 X Special Seminars

1 中国矿山测量70周年发展研讨会

1 Seminar on the 70th Anniversary of Mining Surveying in China

时间：2023年10月26日16:30-18:30

地点：徐州绿地铂瑞酒店多功能厅1

参会人员：国际矿山测量协会主席和副主席、国内矿山测量相关高校及科研院所代表、特邀矿山测量领域国内外专家学者。

主要议题：回顾矿山测量70年历史、展望矿山测量发展方向、相关高校学科介绍。

联系人：陈国良，范洪冬

电话：+86 13952172212, +86 15862165361

Time: October 26, 2023 16:30-18:30

Place: Function Room 1, Xuzhou Greenland Platinum Hotel

Participants: President and Vice Presidents of the International Society for Mining Surveying, delegates of domestic mining surveying related universities and research institutes, and specially invited experts and scholars in the field of mining surveying.

Main topics: Reviewing the 70 year history of mining surveying, discussing the development direction of mining surveying, and introducing the disciplines of surveying and mapping in relevant university.

Contacts: Chen Guoliang, Fan Hongdong

Tel: +86 13952172212, +86 15862165361

2 第50次国际矿山测量协会主席团会议

2 The 50th ISM Presidium Meeting

时间：2023年10月28日15:30-17:30

地点：中国矿业大学图书馆

参会人员：国际矿山测量协会主席团成员、国际矿山测量协会各国的国家代表、各委员会主席、特邀国际国内矿山测量领域专家学者。

主要议题：新委员的确认，国际矿山测量协会机构改革及人事任免，第19和20届国际矿山测量大会、第51次和52次国际矿山测量协会主席团会议筹备。

联系人：杨永均，赵峰

电话：+86 13952201264, +86 18068725753

Time: October 28, 2023 15:30-17:30

Place: Library of China University of Mining and Technology

Participants: ISM Presidium Members, national representatives, commission chairman, and specially invited experts and scholars in the field of mining surveying.

Main topics: Confirmation of new ISM members, Institutional reform and personnel appointment and dismissal of the International Society for Mine Surveying, preparations for the 19th and 20th International Congress for Mine Surveying, and the 51st and 52nd ISM Presidium Meetings.

Contacts: Yang Yongjun, Zhao Feng

Tel: +86 13952201264, +86 18068725753

3 甲烷观测与量化边会

3 Methane Emission Observation and Quantification Side Event

时间：2023年10月28日8:30-12:00

地点：徐州绿地铂瑞酒店潘安湖厅

参会人员：特邀国际国内大气环境、煤炭开采、瓦斯利用、遥感、生态保护领域专家学者。

主要议题：甲烷排放观测新技术

会议主席：卞正富，李正强，解东来

联系人：秦凯

电话：+86 15950663287

Time: October 28, 2023 8:30-12:00

Place: Pan'an lake room, Xuzhou Greenland Platinum Hotel

Participants: Specially invited experts and scholars in the fields of international and domestic Atmospheric environment, coal mining, gas utilization, remote sensing, ecological protection.

Main topic: New technology for methane emission observation and quantification.

Chairs: Bian Zhengfu, Li Zhengqiang, Xie Donglai

Contacts: Qin Kai

Tel: +86 15950663287

4 天空地井协同感知空间信息研讨会

4 Seminar on Sky Ground Well Collaborative Perception of Spatial Information

时间：2023年10月29日9:00-12:00

地点：中国矿业大学环境与测绘学院A506

参会人员：特邀国际国内矿山测量、遥感、GNSS、测绘、生态修复、太空采矿领域专家学者。

主要议题：天空地井协同感知空间信息技术交流及国际合作。

联系人：赵东升，张克非

电话：+86 13295842909

Time: October 29, 2023 9:00-12:00

Place: Room A506, School of Environment and Spatial Informatics, China University of Mining and Technology

Participants: Specially invited experts and scholars in the fields of international and domestic mining surveying, remote sensing, GNSS, surveying and mapping, ecological restoration, and space mining.

Main topic: Communication and international cooperation in space information technology for sky, earth, and well collaborative perception.

Contacts: Zhao Dongsheng, Zhang Kefei

Tel: +86 13295842909

十一、闭幕式和晚宴

XI Closing Ceremony and Dinner

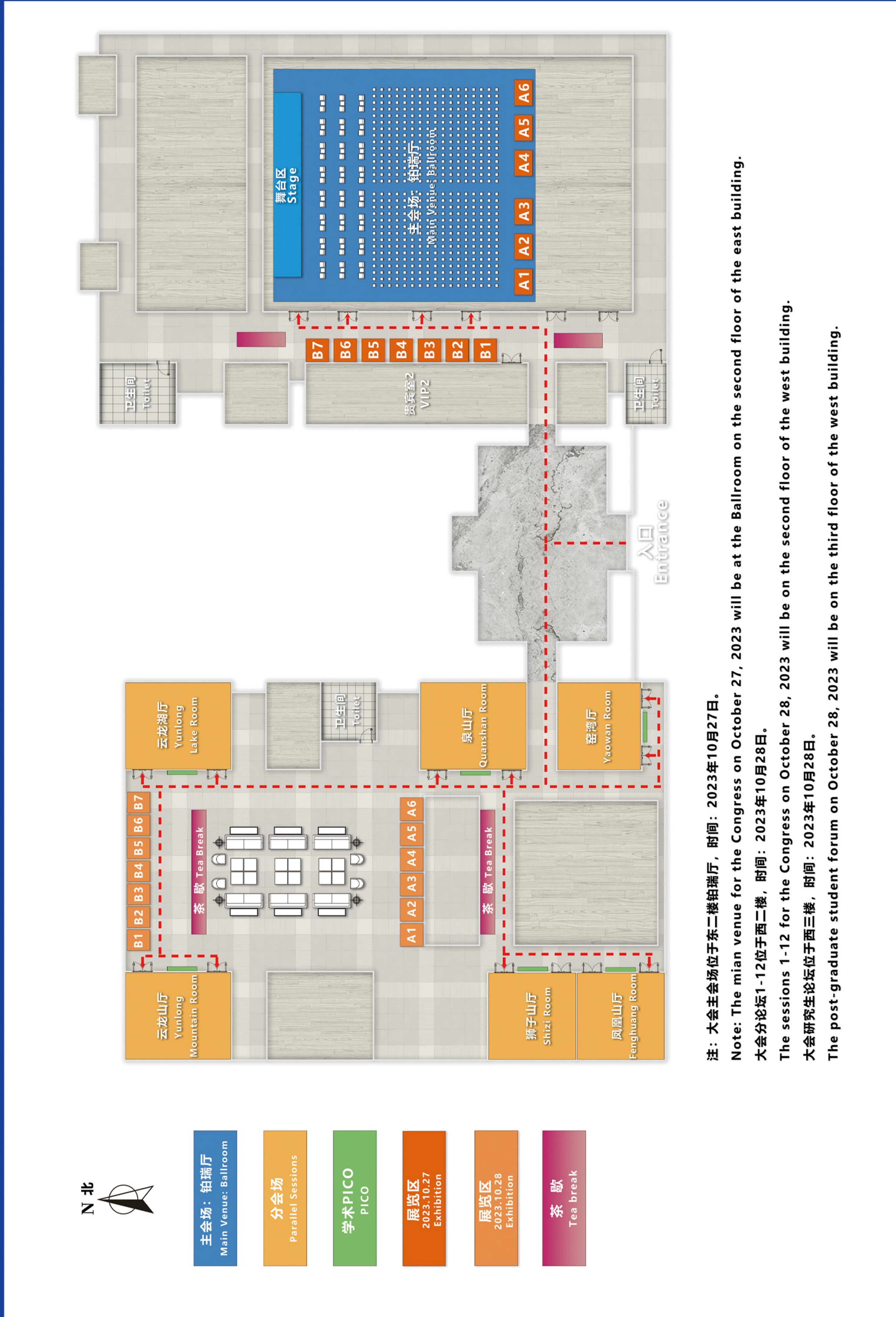
时间：2023年10月28日18:30-21:00
Time: October 28, 2023 18:30-21:00
地点：徐州绿地铂瑞酒店铂瑞厅
Place: Ballroom, Xuzhou Greenland Platinum Hotel

主要活动： Main Events:

序号 No.	活动 Events
1	民乐合奏 《茉莉花》 Folk Music Ensemble: Jasmine
2	大会总结 Congress Summary
3	颁奖仪式 Award Ceremony
4	中国古典舞 《袖舞翩跹》 Chinese Classical Dance: Graceful Sleeve Dance
5	古诗词艺术歌曲 《锦瑟》 Ancient Poetry Art Song: The Sad Zither
6	街舞 《花木兰》 Hip-hop dance: Mulan
7	歌舞 《定风波》 Song and Dance: Calming the Wave
8	合唱 《我的深情为你守候》 Chorus: My Deep Love for You
9	古筝独奏 《姜女泪》 Chinese zither solo: Tears of Mrs. Jiang
10	汉代舞蹈 《长信宫灯》 Han Dynasty Dance: Changxin Palace Lamp
11	京剧 《天女散花》 Peking Opera: Heavenly Maids Scatter Blossoms
12	太极 《〈易〉有太极》 Tai Chi: <Yi> Has Tai Chi
13	男高音独唱 《大黄河》 Tenor Solo: The Great Yellow River
14	国际矿山测量协会会旗交接 Flag Handover Ceremony of the International Society for Mine Surveying
15	第19届国际矿山测量协会主办国代表讲话 Speech by the host for the 19th International Congress for Mine Surveying
16	歌舞 《春风十万里》 Song and dance: The Spring Breeze Travels A Long Journey
17	大会致谢 Congress Acknowledgements

十二、会场布置图

XII Venue Layout



十三、交通、住宿

XIII Transportation and accommodation

大会时间及地点 Date and place of Congress

地点：中国江苏省徐州市绿地铂瑞酒店
时间：2023年10月26-29日

Place: Greenland Platinum Hotel in Xuzhou City, Jiangsu Province, China
Date: October 26-29, 2023



会场交通 Transportation

出发地：徐州东站

- 1、接站：26日 13:00 至 22:00，每一小时大巴一班，循环发车。接站地点：东站西出口公交站台。
- 2、打车：约 20 分钟，预计 27 元。
- 3、公共交通：乘坐地铁 1 号线（路窝方向）到彭城广场站下，换乘地铁 2 号线（新城区东方向）到大龙湖站下，步行 7 分钟至酒店。
- 4、公共交通：乘坐 70 路公交车（生物工程学院方向）到妇幼保健院站下，转地铁 2 号线（新城区东方向）到大龙湖站下，步行 7 分钟至酒店。

出发地：徐州火车站

- 1、打车：约 20 分钟，预计 23 元。
- 2、公共交通：乘坐地铁 3 号线（高新区南方向）到淮塔站下，换乘地铁 2 号线（新城区东方向）到大龙湖站下，步行 7 分钟至酒店。
- 3、公共交通：乘坐 11 路公交车（铜山新区总站方向）到市四院站下，转地铁 2 号线（新城区东方向）到大龙湖站下，步行 7 分钟至酒店。

出发地：徐州观音国际机场

- 1、打车：约 42 分钟，预计 68 元。
- 2、乘坐机场大巴至汽车南站下，转 603 路公交车（国信上城方向）到彭祖大道站下，步行 7 分钟至酒店。

会场住宿 Accommodation

会议酒店 Congress Hotel	房型 Room Type	费用 Room Rate
徐州绿地铂瑞酒店 Xuzhou Greenland Platinum Hotel	单间 Queen Size Bed Room	¥ 490/晚 (含双早) CNY 490/night (including 2 breakfasts)
	标间 Double Bed Room	¥ 490/晚 (含双早) CNY 490/night (including 2 breakfasts)

技术考察 Technical Investigation

国内参会代表技术考察：根据个人意愿和时间安排到江苏贾汪资源枯竭矿区土地修复与生态演替教育部野外科学观测研究站交流学习生态修复、开采沉陷、生态环境监测等相关内容，费用 350 元 / 人，此费用报名时现场缴纳。费用包括现场考察时的门票、交通费、午餐。

国外参会代表技术考察：根据个人意愿和时间安排到上海华测导航技术股份有限公司交流考察。

For Chinese delegates: According to personal wishes and time arrangement, they will exchange and learn about ecological restoration, mining subsidence, ecological environment monitoring and other related content at the Field Science Observation and Research Station of the Ministry of Education in Jiawang Resource Exhausted Mining Area, Jiangsu Province. The fee is CNY 350 per person, and this fee will be paid on-site when registering. The cost includes tickets, transportation and lunch for the on-site inspection.

For International delegates: Visit and exchange at Shanghai Huace Navigation Technology Co., Ltd according to personal wishes and time.

■ 十四、报名、联系方式 XIV Registration and Contacts

报名方式 Registration

2023年10月25日前报名注册并汇款,会议注册费高校、科研院所及企业事业单位1800元/人,研究生(凭有效学生证)900元/人(注册费含会务费、资料费、会议期间餐费等)。住宿由组委会统一预留,费用自理。微信扫描下方二维码,在线完成注册。

The deadline register is October 25, 2023. The registration fee for the congress is CNY 1800 per person for universities, research institutes, and enterprises and institutions, and CNY 900 per person for post-graduate students (with a valid student ID Card) (the registration fee includes congress fee, materials fee, meal expenses during the congress, etc.). The accommodation will be reserved by the organizing committee and the cost will be paid by delegates. Scan the QR code below on WeChat and complete the registration online.



注册缴费码
Payment code



参会登记码
Registration code

联系方式 Contacts

查阅更多大会信息，请访问大会网站 <http://www.ism2023.org.cn/> 和国际矿山测量协会官网 <http://www.ism-minesurveying.com/>，参与协办和支持本次大会、装备与技术展览、会后技术考察等事项请联系大会组委会，邮箱 ism_china@126.com。

For more information, please visit the congress website <http://www.ism2023.org.cn/> and the official website of ISM at <http://www.ism-minesurveying.com/>. Please contact the organizing committee for assistance in organizing and supporting the congress, equipment and technology exhibition, post-congress technical investigation, and others. Please contact the congress organizing committee at email ism_china@126.com.

分工 Duties	联系人 Contacts	电话 Telephone
总协调 Moderator	郑南山 Zheng Nanshan	+86 15952167896
协调秘书 Secretary	杨永均 Yang Yongjun	+86 13952201264
学术活动 Academic Activities	陈国良 Chen Guoliang	+86 13952172212
	秦凯 Qin Kai	+86 15950663287
	李增科 Li Zengke	+86 15950665325
	赵东升 Zhao Dongsheng	+86 13295842909
	赵峰 Zhao Feng	+86 18068725753
	李怀展 Li Huaizhan	+86 18761422238
展览赞助 Exhibition	赵华 Zhao Hua	+86 15105210478
	马昌忠 Ma Changzhong	+86 13505219022
财务发票 Invoice	王莹 Wang Ying	+86 15050822359

十五、参展企业

XV Exhibitors

钻石展商

Diamond Exhibitors



黄金展商

Gold Exhibitors



白银展商

Silver Exhibitors



上海华测导航技术股份有限公司（股票代码：300627）专注于高精度导航定位技术的研发、制造和产业化推广，是国内高精度导航定位产业的领先企业之一。

公司秉承“用精准时空信息构建智能世界”的愿景，围绕“一个核心、两个平台、三大应用”实施布局，专注高精度导航定位核心技术，持续打造高精度定位芯片技术平台和全球星地一体增强网络服务平台，技术应用方向包括导航定位授时、测绘与地理信息、封闭和半封闭场景的无人驾驶。

公司走创新驱动发展道路，高度重视科研，迄今荣获国家技术发明奖1项，国家科技进步奖3项，上海市科技进步奖7项，拥有专利超800项，是国家企业技术中心，并设有国家模范院士专家工作站。在2020珠峰高程测量中，由公司研制的北斗高精度定位设备作为国产北斗装备登顶珠峰，彰显了公司先进可靠的技术实力。

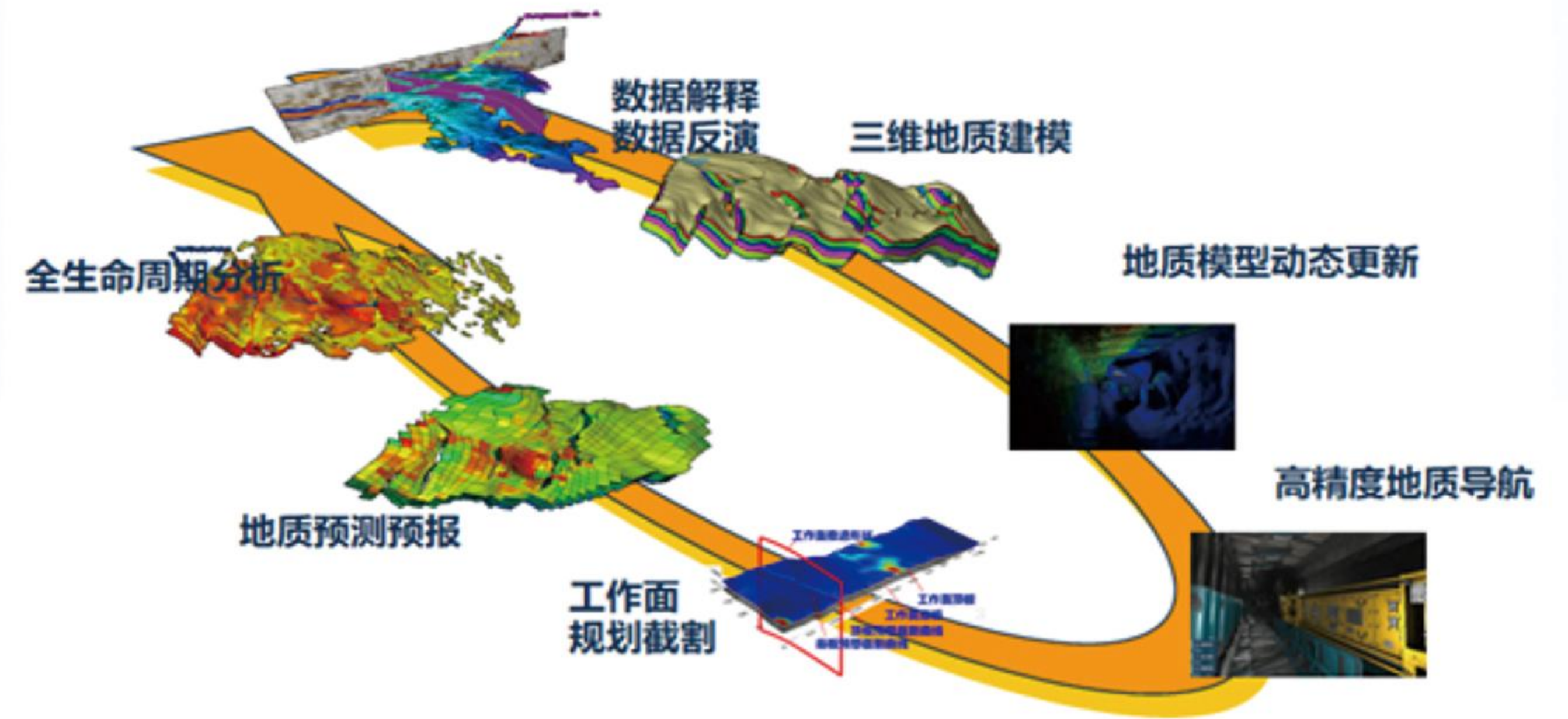
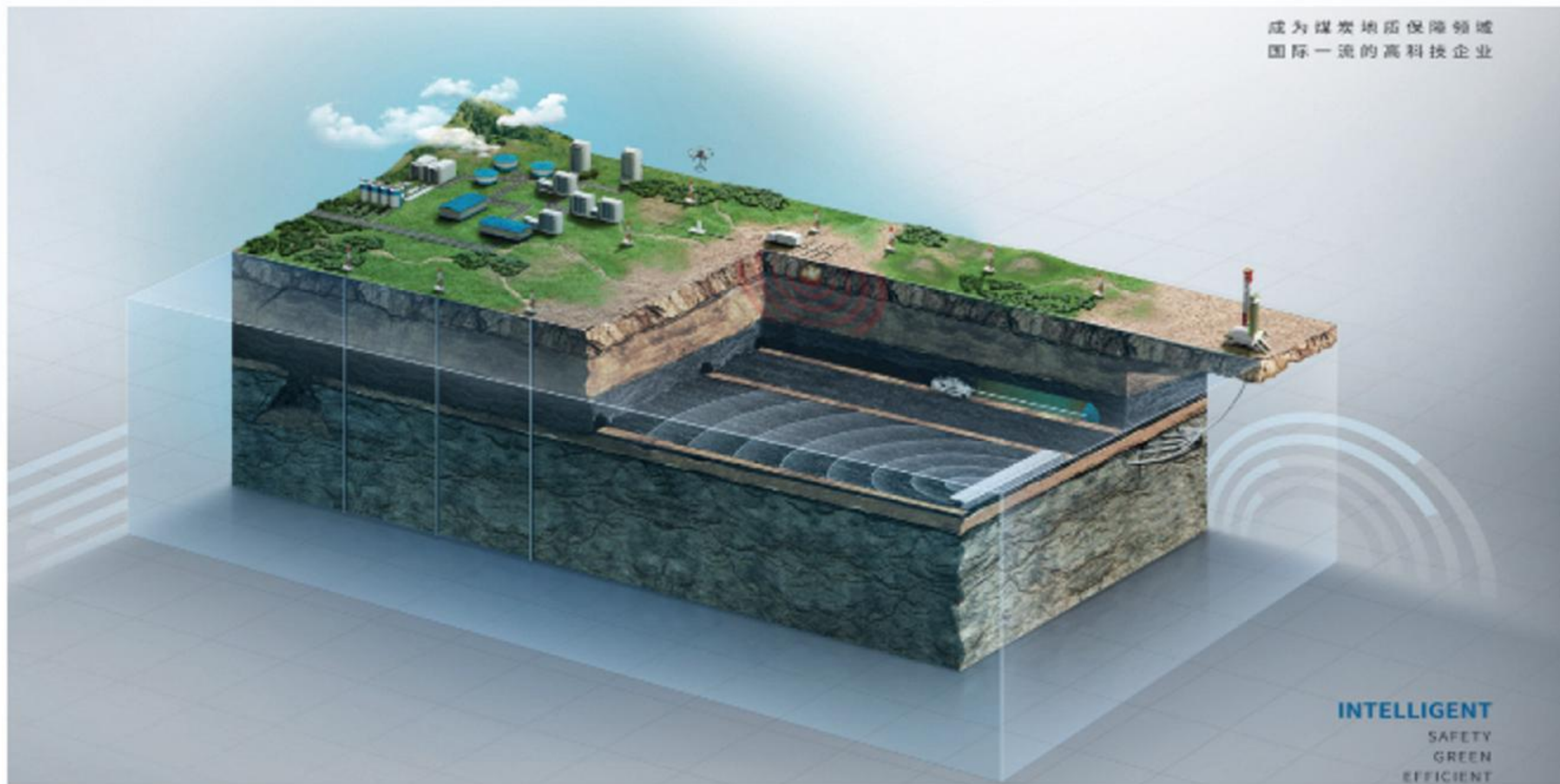
目前，华测导航拥有29个国内省级本地化服务机构，并设有7个海外子公司代表处，服务全球120多个国家和地区。公司的产品及解决方案已广泛应用于建筑与基建、地理空间信息、资源与公共事业、机器人与无人驾驶等板块，深入自然资源、建筑施工、交通、水利、电力、农业、教育、环保等行业，并进入智慧城市、自动驾驶、人工智能等新兴领域。未来，公司将不断加大研发投入，持续提升竞争优势，践行以客户为中心的价值观，向社会提供更多优质产品和解决方案。





公司简介

西安煤科透明地质科技有限公司隶属于中煤科工西安研究院（集团）有限公司，是首家入驻陕西省秦创原平台的央企创新领域产业公司。公司专注于数字化、智能化地质保障技术与平台开发，为客户提供专业级、多场景、一体化、全生命周期地质保障解决方案，打造了“时空感知+透明地质+专业应用”的煤矿全息地质保障平台-“涅石”透明地质专家（TIM-PRO），作为煤炭行业唯一的基础软件入选国务院国资委《中央企业科技创新成果推荐目录（2020年版）》，全面赋能煤矿智能化建设。



业务范围



矿井地测服务

地质测量写实、矿井地质条件评价、隐蔽致灾地质因素评价。



精准探测

定向钻探、高密度三维地震、音频电透视、瞬变电磁、直流电法、槽波地震。



智能监测

长掘长探钻孔物探、随采随掘智能监测、动态电法监测、激光雷达监测。



数字化技术

历史资料数字化、地质数据处理解释、高精度三维地质建模、全空间井巷建模。



系统定制开发

透明地质保障系统、灾害地质透明化系统、透明回采工作面系统、透明掘进工作面系统、地质动态管理系统、多源地质数据融合系统、三维地质建模系统等。



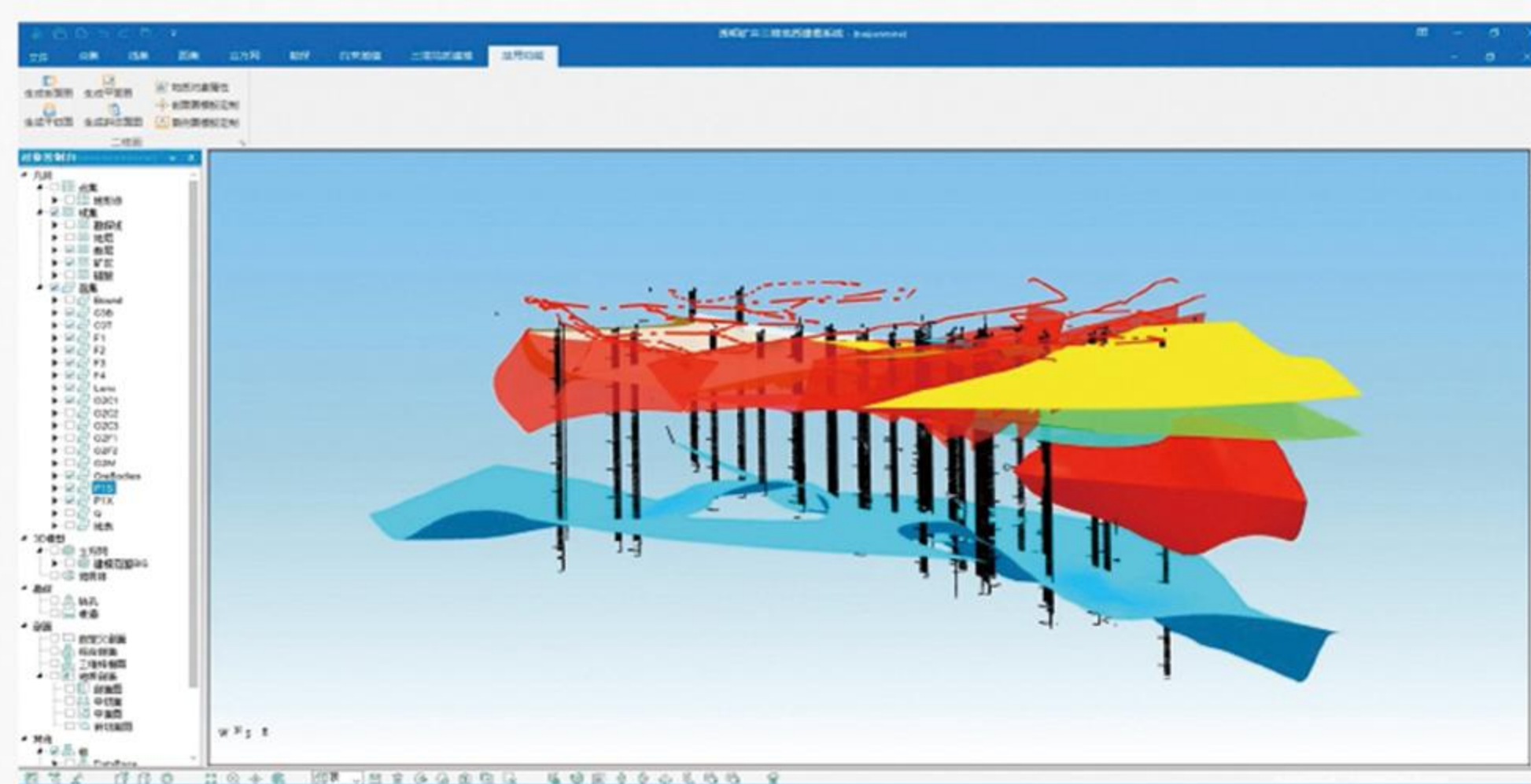
透明地质技术服务

智能开采路径规划、地质灾害评估、钻探工程管理、煤矿地质保障一体化解决方案。

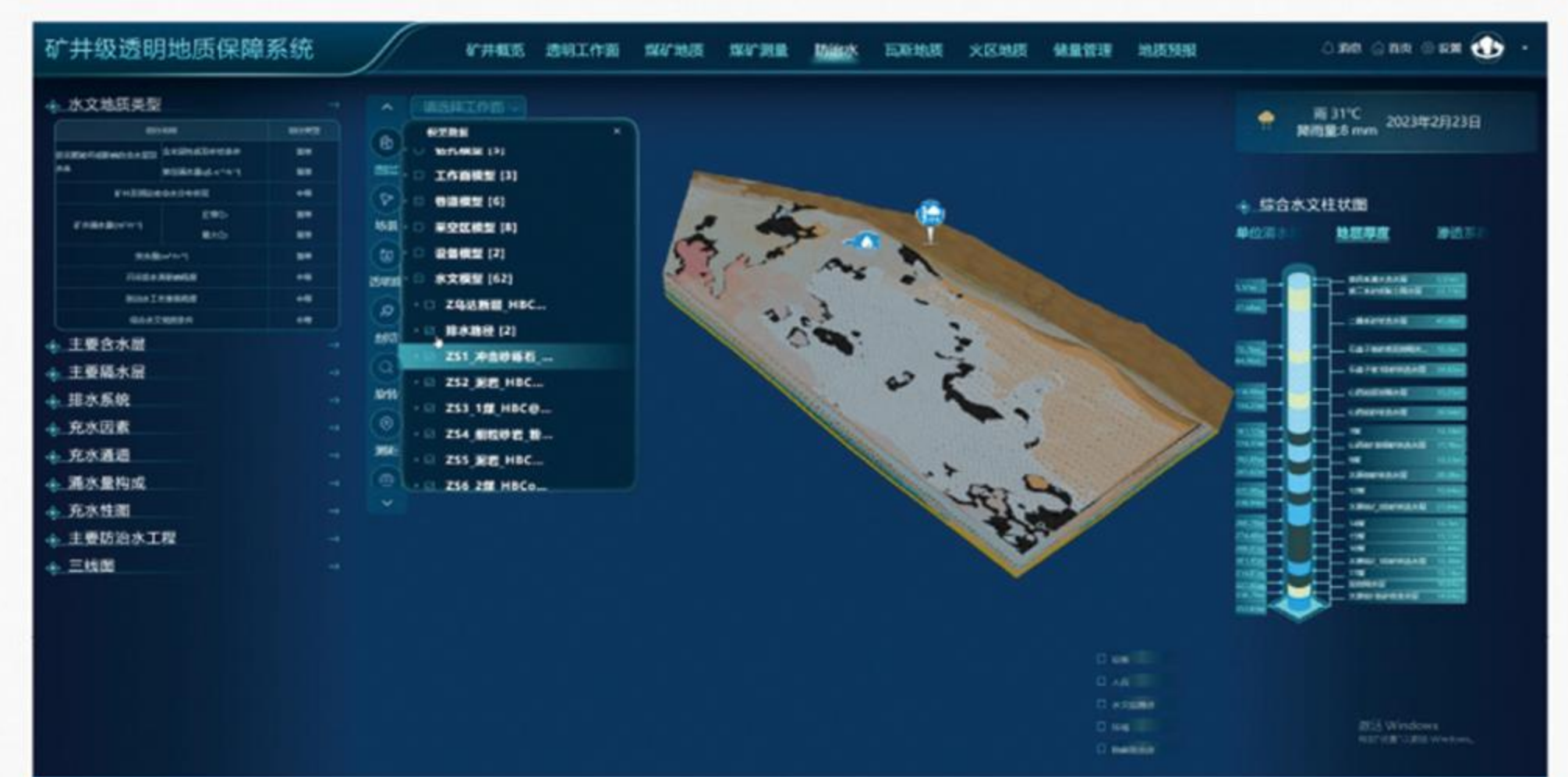
产品系列



· 煤矿透明地质保障系统



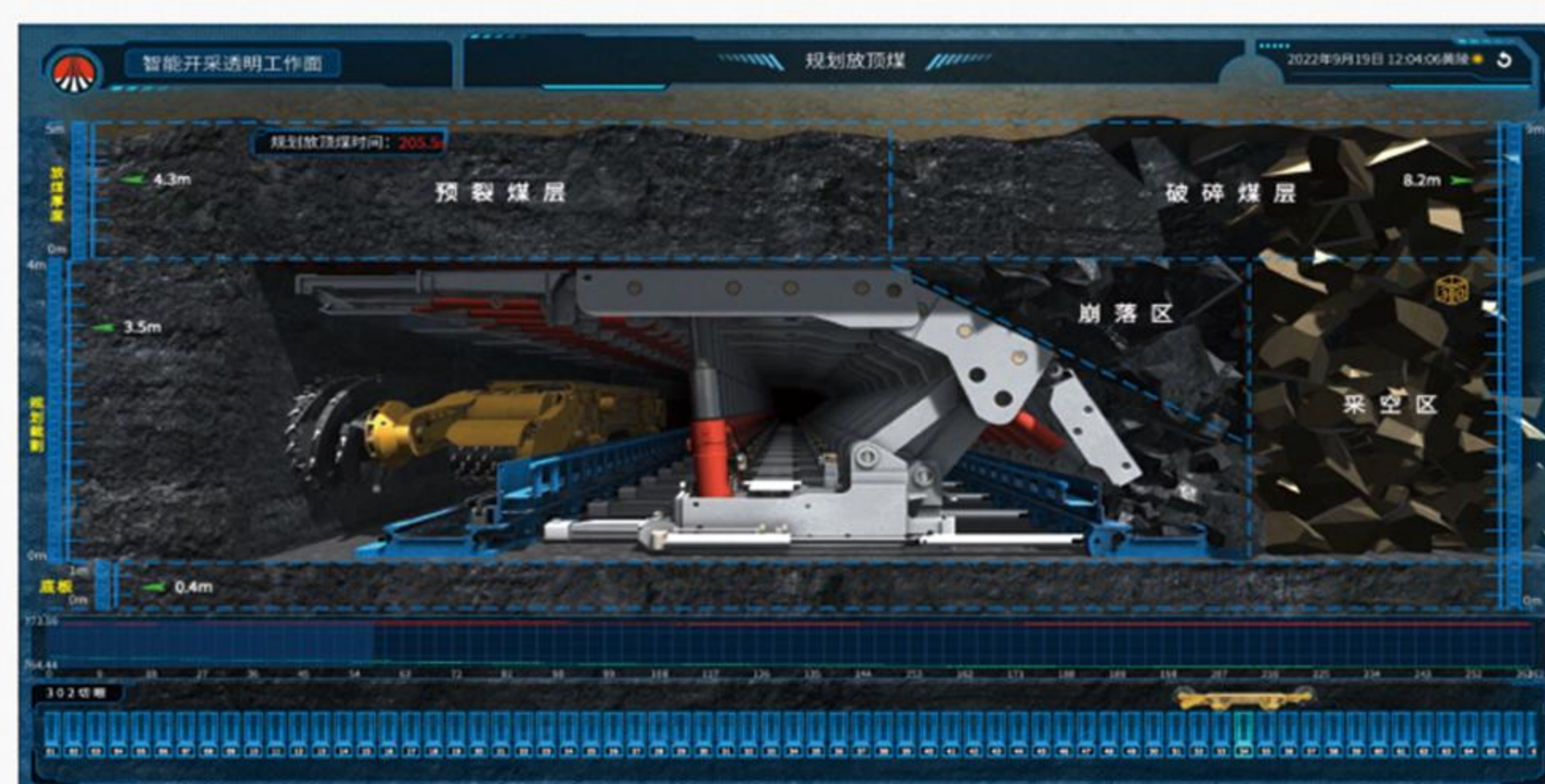
· 三维地质建模系统



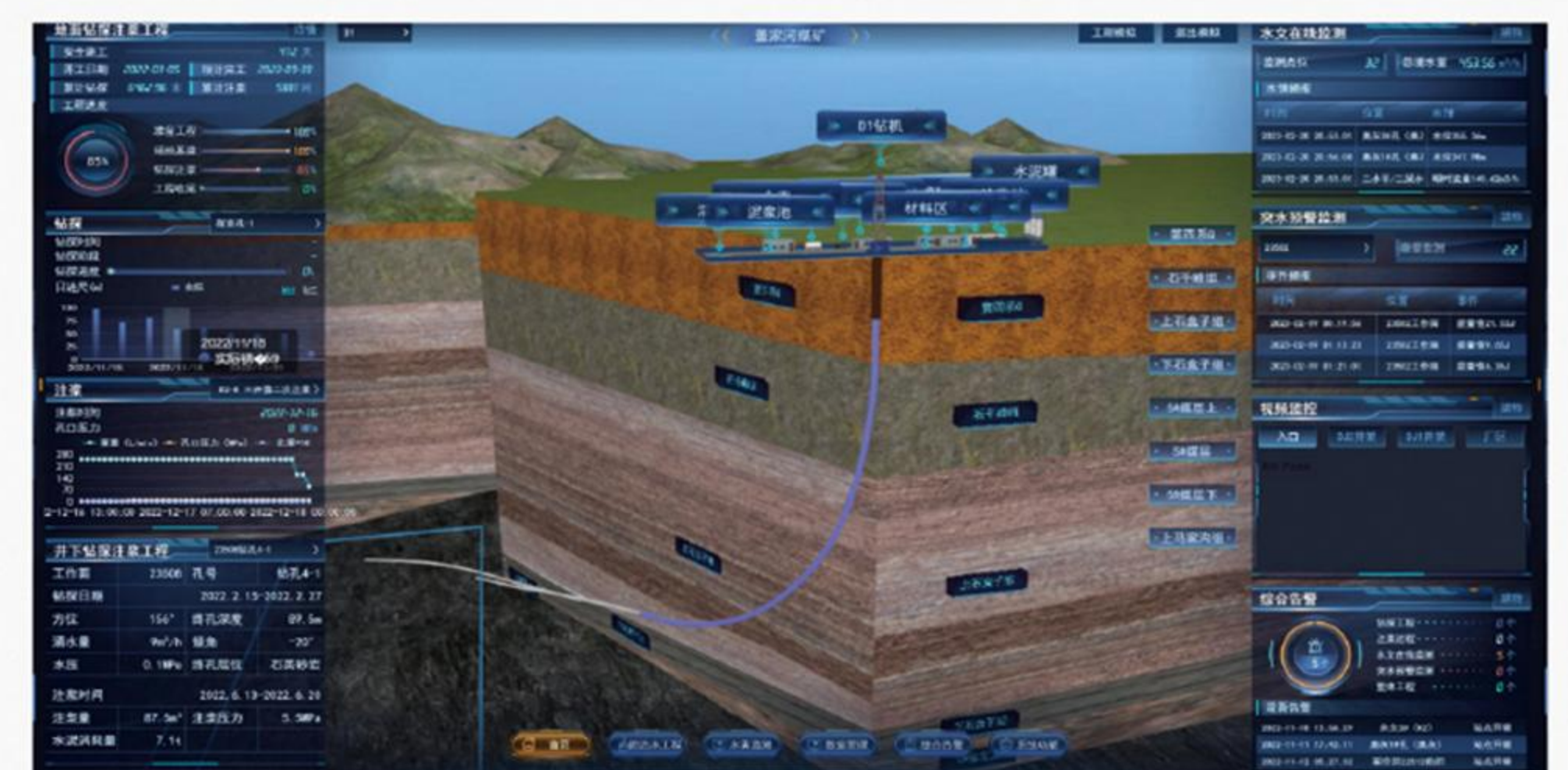
· 灾害地质透明化系统



· 透明掘进工作面系统



· 透明回采工作面系统



· 灾害防治设计与管理系統

IDS IBIS-ArcSAR 全方位车载式边坡监测系统 大范围、高精度实时预警

▶ 高频率监测：

360° 旋转作业方式，数据获取时间仅需 40s，大大提高了监测的频率

▶ 大范围覆盖能力：

5000m 的最远测程，单台设备即可覆盖大范围矿坑，使测量员远离危险区域

▶ 监测成果丰富：

即时获取监测区域高清图片，内置 GNSS 可对雷达数据自动地理编码

▶ 高精度监测：

微小移动快速检测，监测更加精准，保障人员和财产安全

▶ 先进的大气校正算法：

Guardian 软件内置算法自动识别并校正大气变化对监测数据的影响

▶ 长期稳定运行：

系统集成度高，活动部件少，确保恶劣环境条件下的稳健性，降低维护成本

▶ 全天候监测：

内置电池、柴油发电机、太阳能电池板、风力发电机等确保系统连续运行

▶ 集成度高：

系统支持多台雷达系统组网，还支持接入其他类型监测传感器进行对比分析

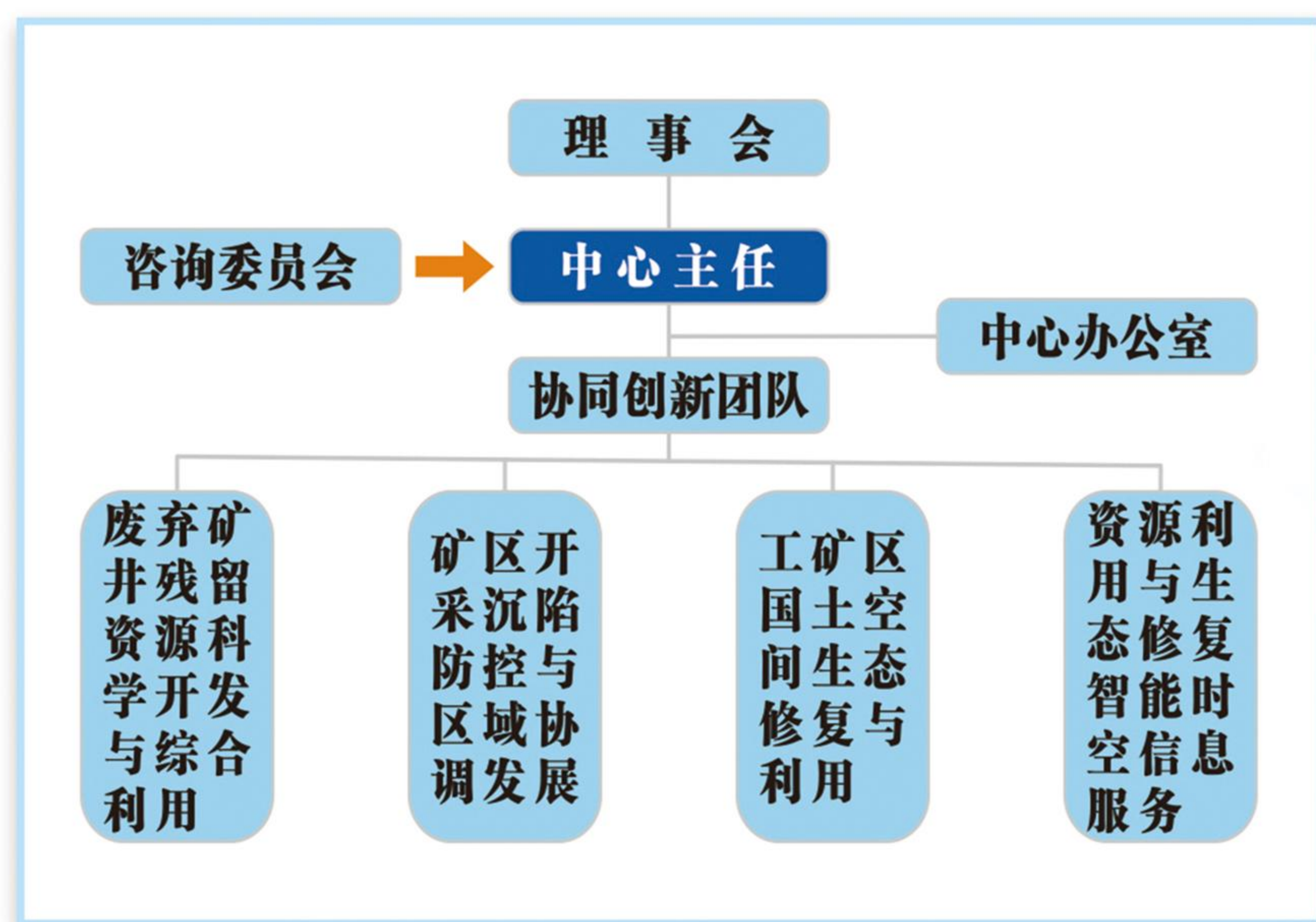




江苏省老工业基地 资源利用与生态修复协同创新中心

江苏省老工业基地资源利用与生态修复协同创新中心由中国矿业大学牵头，协同徐州市人民政府、中国国土勘测规划院、南京农业大学、徐州矿务集团有限公司、中国中煤能源集团有限公司、国家能源投资集团有限责任公司、中国煤炭科工集团有限公司等7家单位，在原中德能源与矿区生态环境研究中心的基础上组建。2014年获批成为面向区域发展的江苏高校协同创新中心，2020年在江苏高校协同创新中心第二建设期绩效评价中获得“A”。

中心围绕资源型老工业基地资源利用与生态修复的重大科技需求，结合徐州面临的资源枯竭、矿井关闭、生态修复、地下空间利用、次生污染治理、迹地开发等新问题；以废弃矿井残留资源科学开发与综合利用、矿区开采沉陷防控与区域协调发展、工矿区国土空间生态修复与利用、资源利用与生态修复智能时空信息服务为主要研究方向；突破老工业基地资源与环境约束瓶颈，在重大理论和关键技术方面取得一批标志性成果，建成中国老工业基地资源利用与生态修复关键技术创新与科学研究的排头兵和一流人才培养的高地，为促进资源型老工业基地转型发展提供科技支撑。



联系我们：

江苏省老工业基地资源利用与生态修复协同创新中心

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江苏开普勒导航技术研究院

CORS · RTK · 形变监测

软硬件提供商



江苏开普勒导航技术研究院

地址：徐州市三环南路2.5数字产业园区6号楼10层

电话：17712991277



北斗+矿山综合解决方案

BeiDou+Mining Integrated Solution

中海达基于北斗高精度、GIS、云计算、物联网、大数据等技术，推出了“1张网+1张图+1平台+N应用”的北斗+矿山综合解决方案。该方案通过智慧矿山空间数据测量(井上井下一体化测量)、智能感知网建设(空天地、室内外立体感知网)、智慧矿山安全管控云平台(矿山一张图、综合安全监测预警、人车物安全管控)建设，可实现矿山边坡、作业人员/车辆的全天候、全天时实时在线监测，全方位守护矿山安全。

Based on BeiDou high-precision positioning, GIS, cloud computing, IoT, big data and other technologies, Hi-Target has launched the BeiDou+ Mining Integrated Solution of "one network + one map + one platform + multiple applications". This solution uses smart mines spatial data collecting, construction of an intelligent perception network, safety management and cloud platform, which can realize 7*24H real-time online monitoring of mine slopes, mine operators, and mining operation vehicles, and protect mine safety in all aspects.





捷翔天地是一家低空遥感综合解决方案提供商，成立于2016年，提供遥感数据的获取、分析、应用服务，为政府（自然资源、水利、交通、环境、应急等），企业（电力、石油、矿业等）行业提供决策支持。捷翔天地坚持以“构建空天地遥感体系，服务政企精细化管理”为战略方向，致力于成为国内一流的低空遥感解决方案提供商。

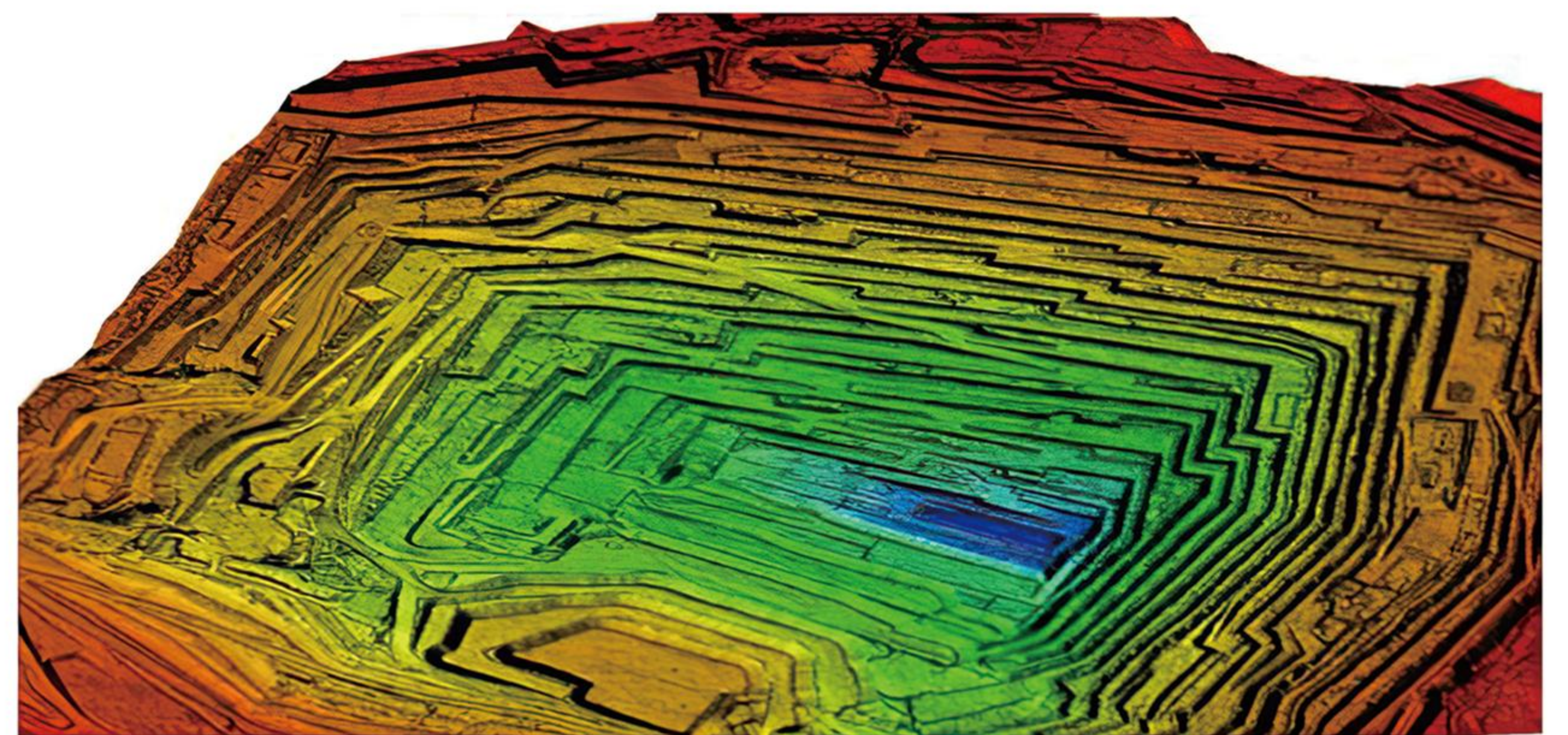
捷翔天地结合遥感多年服务经验和对露天矿业务的了解提出了空天地一体化智能露天矿监测系统，通过卫星、无人机、边坡雷达一体化的遥感手段，解决露天矿生产过程中无人化矿山测绘、剥离量验收、安全巡检、高精地图等相关方面的问题。



智能测绘用于矿山基础测量、剥离量计算、坡顶坡底线生成。智能无人安全巡检可以用于边坡裂缝精细化巡检、爆破区巡检、工作面巡检、皮带机巡检及输电线路巡检等；同时，基于可见光和激光点云成果，高频次生成矿区实景三维模型，结合钻孔、地震等数据，建立地质模型，形成地上地下一体化的数字孪生平台。



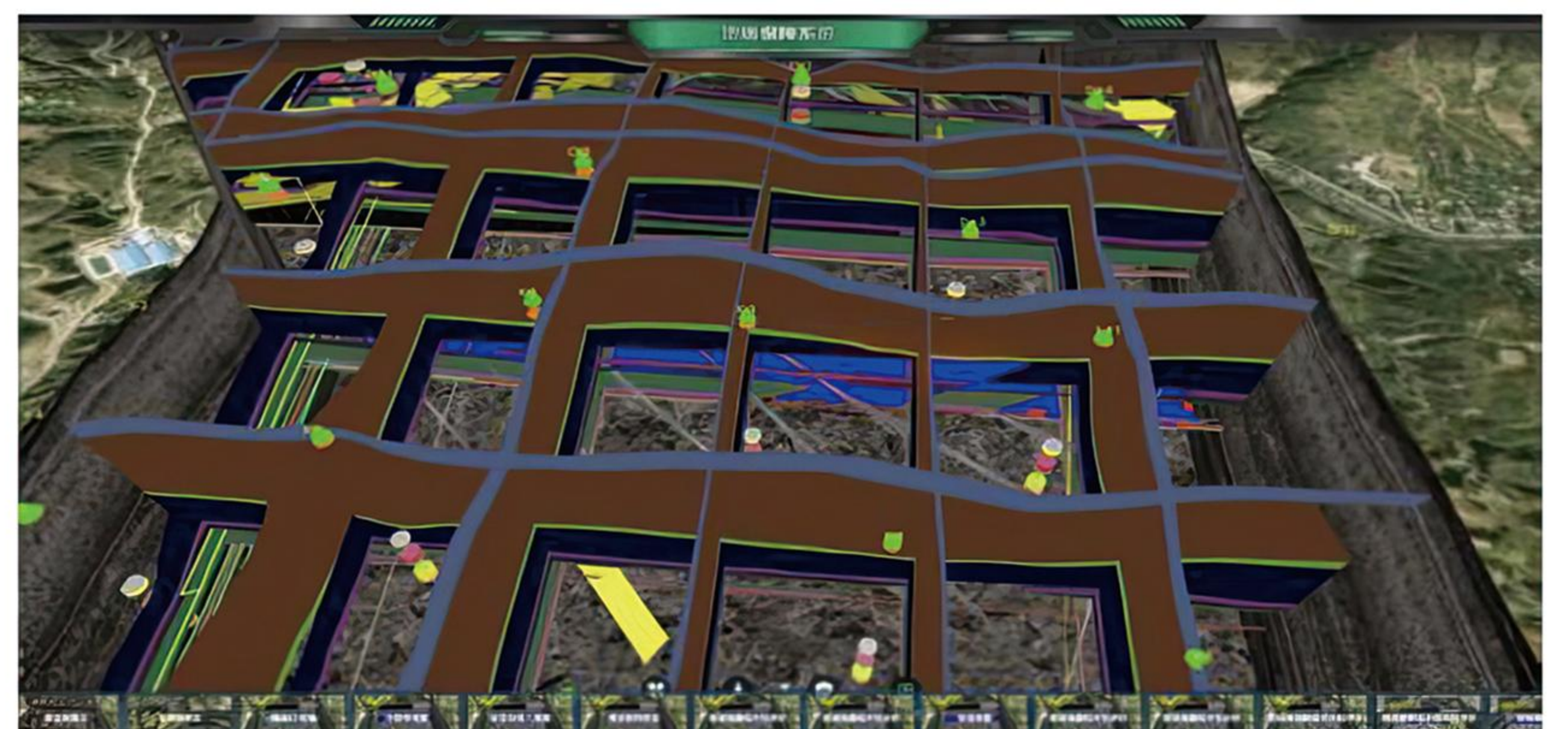
露天矿智能机场



无人测绘成果



远程无人巡检



智能地质建模

浙江中海达

浙江中海达空间信息技术有限公司是国家高新技术企业，具有测绘甲级资质证书，并拥有多项国际资质认证，是新型智慧城市建设企业联盟理事单位，控股浙江视慧、四川视慧智图、梅州中海达 3 家子公司。

公司主营业务围绕三维可视化，提供时空大数据获取、真三维空间信息技术与服务。业务覆盖装备制造、空间信息数据获取与处理、系统研发与行业应用解决方案。目前已形成立足实景三维平台、倾斜摄影单体化建模、数字乡村、智慧枢纽、智慧校园、智慧市政、历史建筑、辅助规划等多领域整体解决方案。



国土空间治理

CIM

三维地籍

生态修复

防灾减灾

自然资源管理

智慧流域

智慧农业

数字政务

智慧水务

智慧枢纽

智慧警务

防违控违

数字社会

未来乡村 / 社区

智慧园区

生态修复实景全周期管理平台

平台利用地理信息、数字孪生、三维 GIS 以及数据库等先进技术，对矿山生态修复项目进行全过程监测，实现了矿山生态修复项目的查询、统计、可视化监管以及矿山生态修复全流程跟踪和智能化监管。

整体概览

查看各区县矿山的分布情况，并对项目数量、项目状态实现可视化统计分析。并归集展示近 5 年生态修复工程的施工 - 投资计划，及相关政策文件，辅助生态修复工程合规有序的开展。



施工监管

在安全与环保模块，对接磅秤系统、视频监控系统、环境监测系统等，对物料堆放、空气质量、施工安全等因素实现可视监管，全面管控施工现场。



项目概览



数字孪生矿山

通过地图展示项目地形全貌及占地范围



基本情况

展示项目整体实施进度，对挖方量、清坡面积、隐患点、爆破范围等实现智能化监管



历史对比

整合项目修复前的高空视频影像，便于施工前后的画面比对



设计规划分析

通过模型分析功能，可直接看到项目实际开挖情况与设计规划的差异程度

全时记录

- 实现了项目全生命周期中相关流程文件的管理
- 展示了项目全生命周期中各个重要施工节点的记录



空间分析

为便于日常监管与平台操作，在工具栏中整合了视角信息查询、量测工具、快捷交互、模型调节等功能。



坐标定位



测量工具



空间视角



快捷交互



模型调整



地址：浙江省湖州市德清县科技新城科源路10号

电话：0572-8889527

网址：www.zjzhd.com

中海达
HI-TARGET



视慧空间
Smart Visual Space



图联科技

-TULIANKEJI-

》》》》 公司简介

安徽图联科技有限公司成立于 2007 年，注册资本1723.08万元，总部设在安徽省淮南市山南国家高新区智慧谷，是淮南市首批首家入驻山南国家高新区高新技术企业，是一家国际化、跨领域的人工智能数据服务商，旗下地理信息数据业务位于全国前列。公司连续七年荣获“中国地理信息产业百强企业”、“中国地理信息产业高成长企业”、“中国软件和信息服务业企业信用等级（AAA级）”、国家首批“双创之星”20名优秀创客、“国家级服务业标准化试点企业”、安徽省“三重一创”、“省重点软件企业”、“省专精特新中小企业”、省新型研发机构、省互联网行业先进基层党组织、省级科技型中小企业、省创新企业100强、5G应用软件、省首版次软件、省大数据企业、省第十批信息消费创新产品，省“三强三好”重点互联网企业党组织、市现代服务业十强企业、市互联网十强创新企业、市科技小巨人、市“50·科技之星”创新团队。公司核心业务板块包括地理信息、自动驾驶、语音标注、教育标注、生物识别、智能家居、智能制造、新零售、OCR场景、智能医疗、智能交通、智能安防、手机娱乐等多场景下的语音、图像、视频、文本等人工智能全类型数据业务，其他业务板块包括传统和新型测绘服务、市政设施、地下管线、智慧城市、各类普查等。

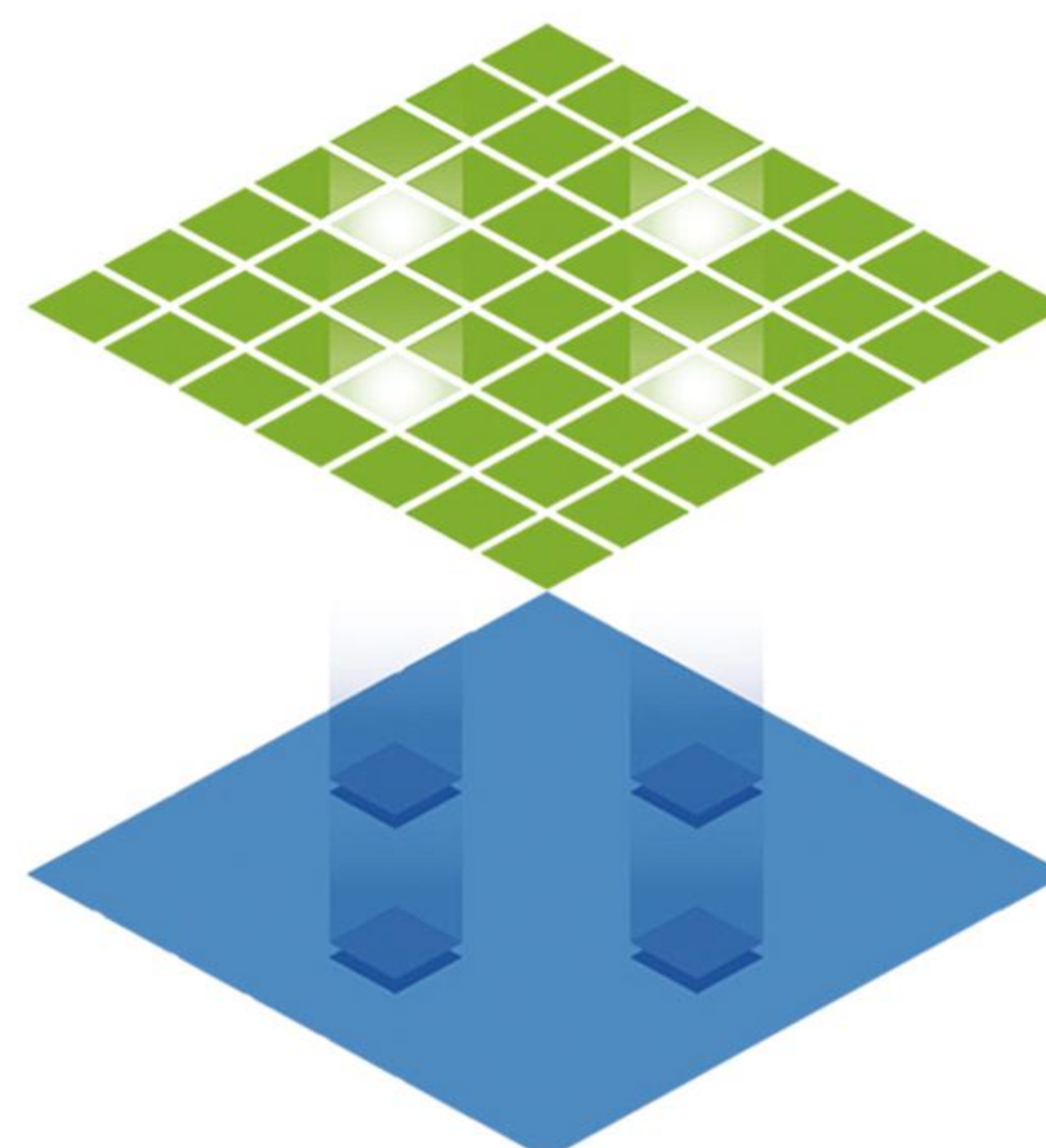
图联科技是阿里集团、百度、腾讯、滴滴、顺丰、美团等众多互联网企业的优质数据供应商，是吉利、小鹏、中海庭、Momenta、上汽等众多车厂的紧密合作伙伴，是自然资源、农业、住建、城市管理、交通、水利、数据资源等政府部门的技术服务供应团队。致力于打造国内领先的人工智能数据生产基地。专注于多场景、多行业的数据采集、数据标注、数据清洗、数据分析、数据应用、数据运营等一站式服务，以数据赋能更精准、更安全、更高品质的人类生活。

图联科技

图随百闻 联动天下 诚信立足 创新致远

GPU算力平台

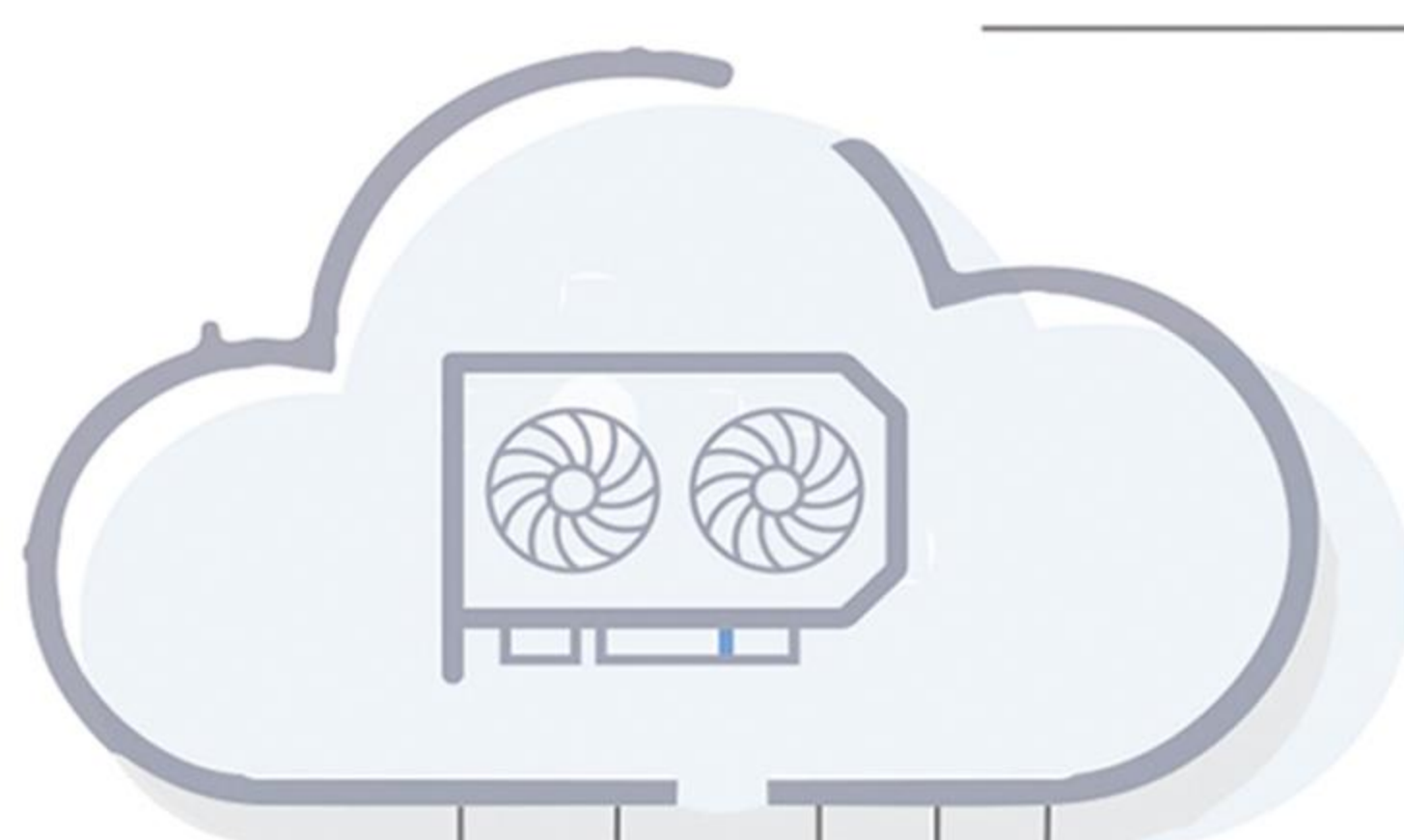
云端的图形工作站
本地一致的使用体验



泽塔云GPU算力平台,可应用于高性能计算、图形处理、AIGC、仿真建模等多种场景,通过GPU虚拟化技术,实现GPU算力资源配额灵活管理,从而应对高实时、高并发的海量计算场景,可满足重度图形渲染和数值计算,适用于测绘,地质地矿,勘探,建筑,设计,制造,影视,动画等行业。

目前,泽塔云GPU算力平台支持英伟达、AMD、英特尔等主流GPU以及芯动科技、景嘉微、摩尔线程等国产化GPU,拥有全栈式GPU算力平台解决方案。

产品特点



zVision桌面传输协议

- H.264/H.265标准
- 硬件编解码
- 网络QoS
- 立体图形显示
- 所有类型USB设备
- 无损色彩

1:1的GPU资源使用方式

1:N的GPU资源使用方式

Intel第五代架构后的核芯显卡
Intel Xe系列GPU

Radeon Instinct系列
Radeon Pro系列
Radeon RX系列

Tesla系列
Quadro系列
GeForce系列

合作案例 (部分案例展示, 排名不分先后)

自然资源部国土卫星遥感应用中心

中国测绘科学研究院

陕西测绘地理信息局

四川测绘地理信息局

海南测绘地理信息局

黑龙江测绘地理信息局

上海市测绘院

浙江省测绘科学技术研究院

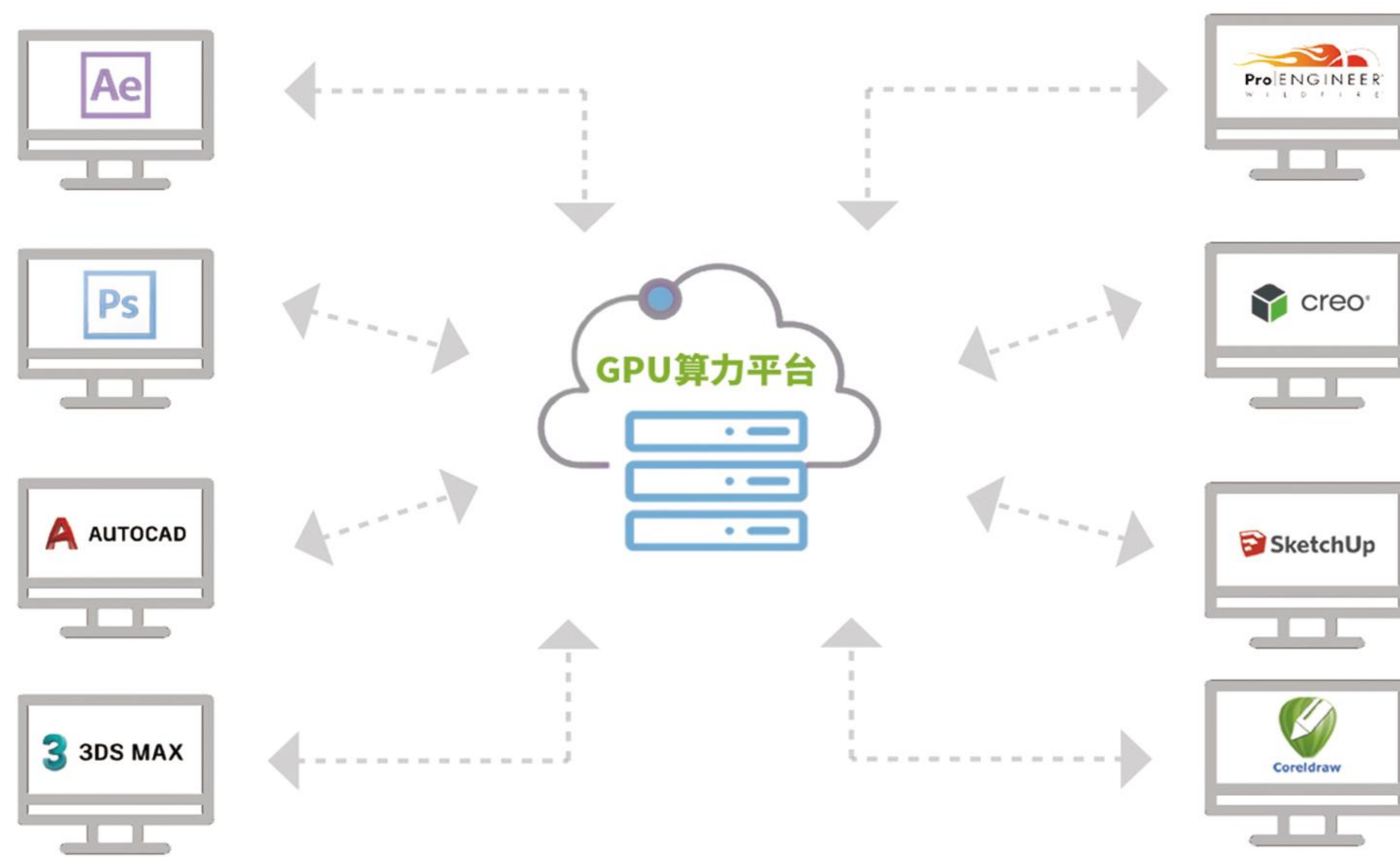
福建省基础地理信息中心

安徽省地质测绘技术院

宁夏回族自治区自然资源厅

广西壮族自治区自然资源调查检测院

产品示意图



产品版本



zVision Standard

适用于云端办公场景
满足轻度图形体验



zVision Extreme

适用于重载图形场景
提供极致性能和体验



zVision 3D

适用于立体测图场景
具备云端立体图形显示能力



zVision Hyper WorkSpace

适用于多工作区应用场景
在同一个客户端实现多工作空间协作

自主平台 原创开发

北京龙软科技股份有限公司成立于2002年, 作为智能矿山工业软件的领航者, 公司秉持“自主平台、原创开发”的信念, 以时空智能、工业物联网、大数据、云计算和数字孪生等高新技术为基础, 以自主研发的“龙软专业地理信息系统”为核心, 为煤炭、石油天然气等能源行业以及安全监管监察、自然资源等主管部门, 提供智能矿山、智慧安监、智慧园区、应急救援、国土资源管理、城市地下空间工程等专业解决方案。公司于2019年12月30日成功登陆科创板, 成为率先登录科创板的煤炭软件企业, 开创了公司创新发展的新纪元。

公司拥有3个全资子公司: 三河龙软子公司、贵州龙软子公司、龙软(山西)智控科技有限公司; 2个分公司: 徐州分公司、成都分公司, 以及分布在全国主要煤炭基地的12个服务网点。

公司技术力量雄厚, 已取得发明专利40项, 软件著作权280余项, 先后获得国家科技进步二等奖1项、教育部科学技术进步一等奖1项、中国煤炭工业科学技术特等奖2项、一等奖9项、中国安全生产协会第三届安全科技进步一等奖1项及其它各类奖项多项。参与国家“十五”、“十一五”、“十二五”、“十三五”、“十四五”国家重点研发计划、科技支撑和863主题项目等。

公司相关技术和产品已累计在全国1800余家大中型煤矿、智慧园区和科研院所等单位得到成功应用, 2022年中国煤炭企业50强中有40余家使用公司产品和服务。



龙软科技产品体系



地址: 北京市海淀区中关村彩和坊路8号天创科技大厦1008室 邮编: 100080

网址: www.longruan.com 售后服务热线: 4000837818

龙软科技主要产品



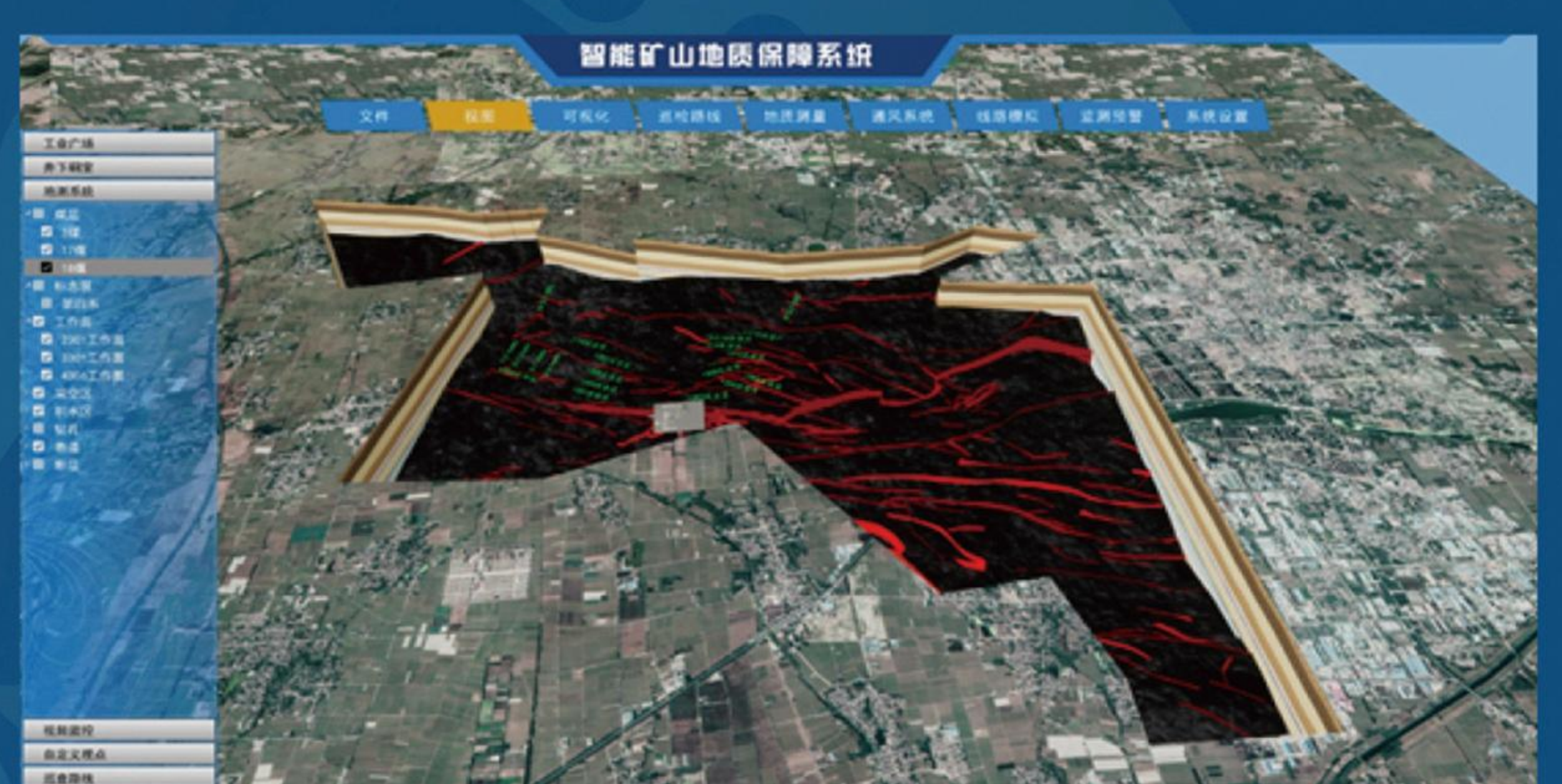
LongRuan TGIS智能管控平台



龙软安全生产大数据平台



透明化矿山系统



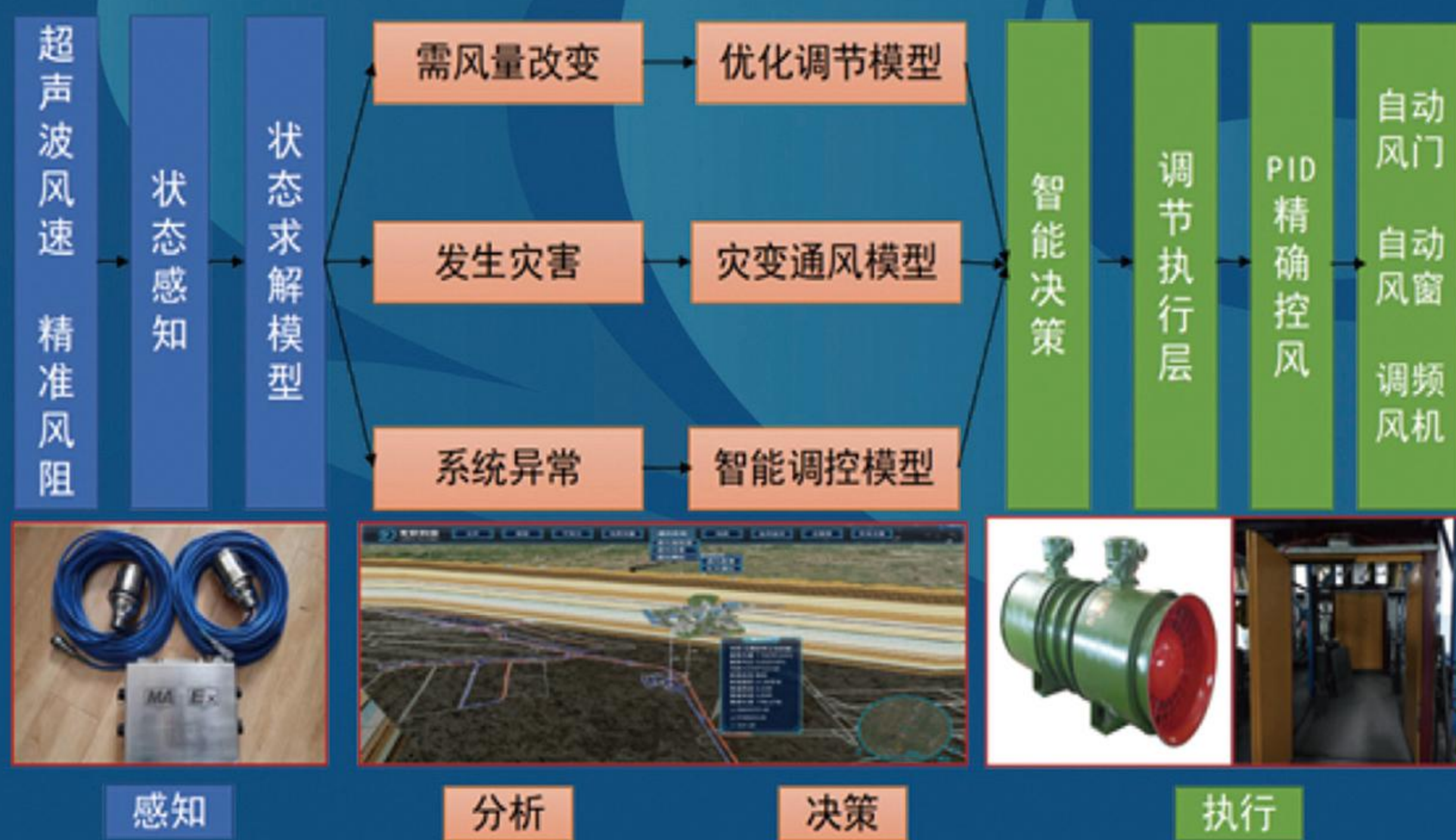
智能矿山地质保障系统



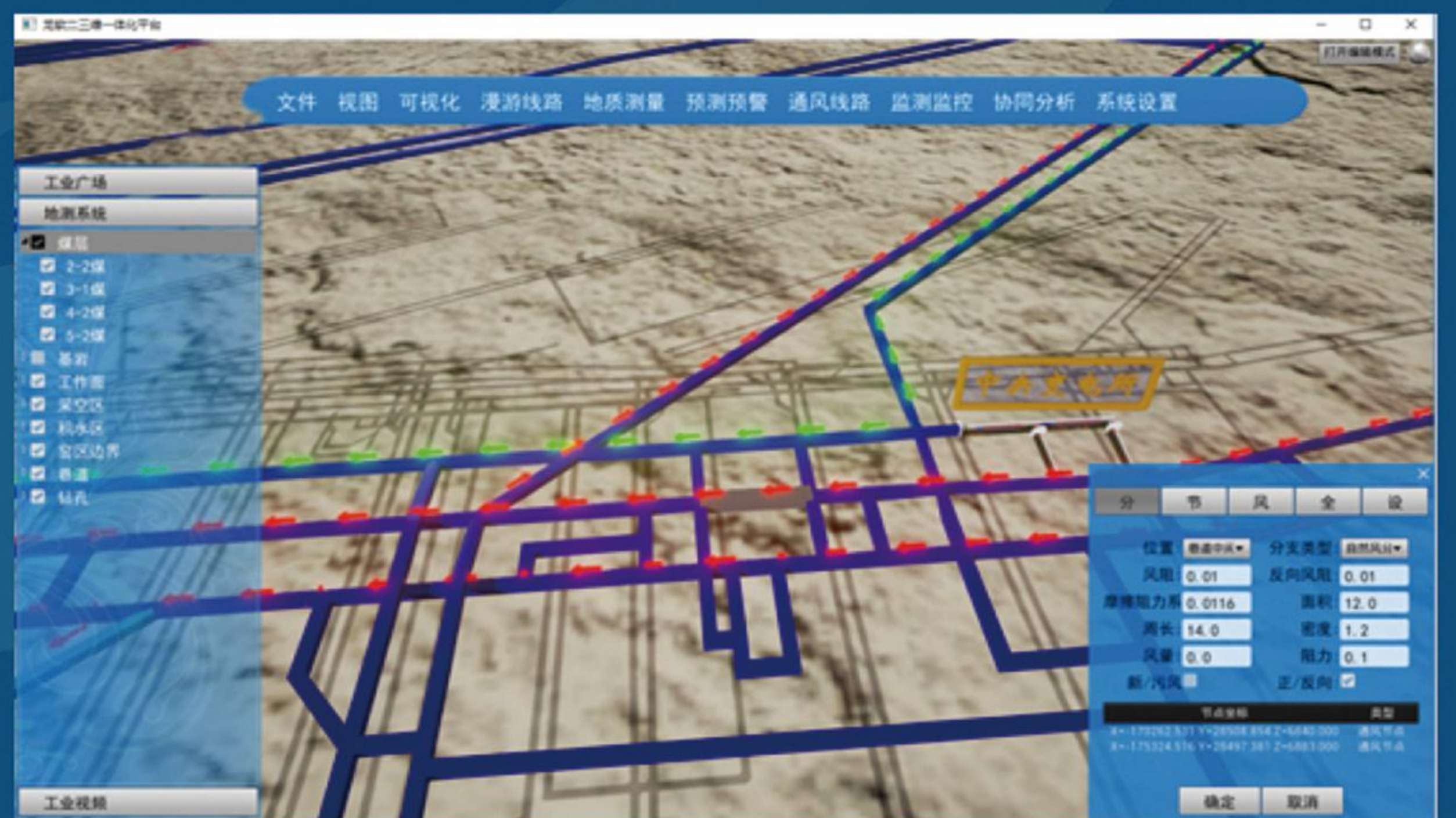
智能综采工作面 (数字孪生设备远程控制系统)



智能掘进工作面 (掘锚一体机)



智能通风系统架构图



通风状态及参数的可视化展示



广州南方测绘科技股份有限公司

南方测绘，创立于广州，是一家集研发、制造、销售和技术服务于一体的测绘地理信息产业集团。业务范围涵盖测绘装备、卫星导航定位、无人机航测、激光雷达测量系统、精密测量系统、海洋测量系统、精密监测及精准位置服务、数据工程、地理信息软件系统及智慧城市应用信息化、软件系统、数字孪生、三维可视化、数字园区等，致力于行业信息化和空间地理信息应用价值的提升。

南方测绘专注测绘地理信息行业，以振兴民族产业为己任，坚持自主创新，陆续实现了测距仪、电子经纬仪、全站仪、GNSS 等一系列测绘仪器的国产化，取得了一系列拥有自主知识产权的技术成果，成为中国电子测绘仪器的开创者与领导者，是中国高精度卫星导航产业的领导者，也是中国地理信息软件和数据系统的领航者。经原国家测绘地理信息局组织的专家鉴定，认定南方测绘的产品和综合技术达到世界先进水平，跻身行业世界四强。目前，南方测绘电子经纬仪、全站仪及 RTK 产销量均位居世界前列，北斗地基增强系统 (CORS) 建站数全国领先，测绘成图软件市场占有率超过 90%，拥有中国颇具规模和实力的无人机航测和激光雷达数据获取与处理专业团队。

Established in Guangzhou, the South Group (hereafter as "the Company") is a Geo-information company integrating R&D, production, sales and services. The company always putting efforts on industry informatization and the increasing value for GIS applications, our service is fully covered the survey equipment, satellite navigation, UAV aerial survey, LiDAR system, precise measurement system, hydrographic measurement system, precision monitoring and precise location service, data process project, GIS system and smart city application, etc.

The company adheres to independent innovation, and multiple achievements fill the industry gap. After expert appraisal organized by the former National Bureau of Surveying and Mapping Geographic Information, it has been determined that our products and comprehensive technology have reached the world's advanced level and become one of the world's top four in the industry. At present, the production and sales of our electronic theodolites, total stations, RTK and other products have all ranked among the top in the world. The number of Beidou Ground Augmentation System (CORS) stations is leading in the country, and the market share of surveying and mapping software is leading in the country. We also have the most powerful professional team in China for drone aerial survey and LiDAR data acquisition and processing.





GoSLAM

三维激光扫描移动测量系统

3D Laser scanning mobile Measurement system

GoSLAM具备实时、精确、简单、高效的特性,作业人员手持即可开启一键式扫描作业,移动式扫描方式搭配强大建图系统,快速扫描获取矿道及矿山等点云数据,可用于地下矿山三维模型重建、矿道治理方案设计、露天矿山地质环境治理及矿山尾矿库安全监测等,助力矿山测量工作!

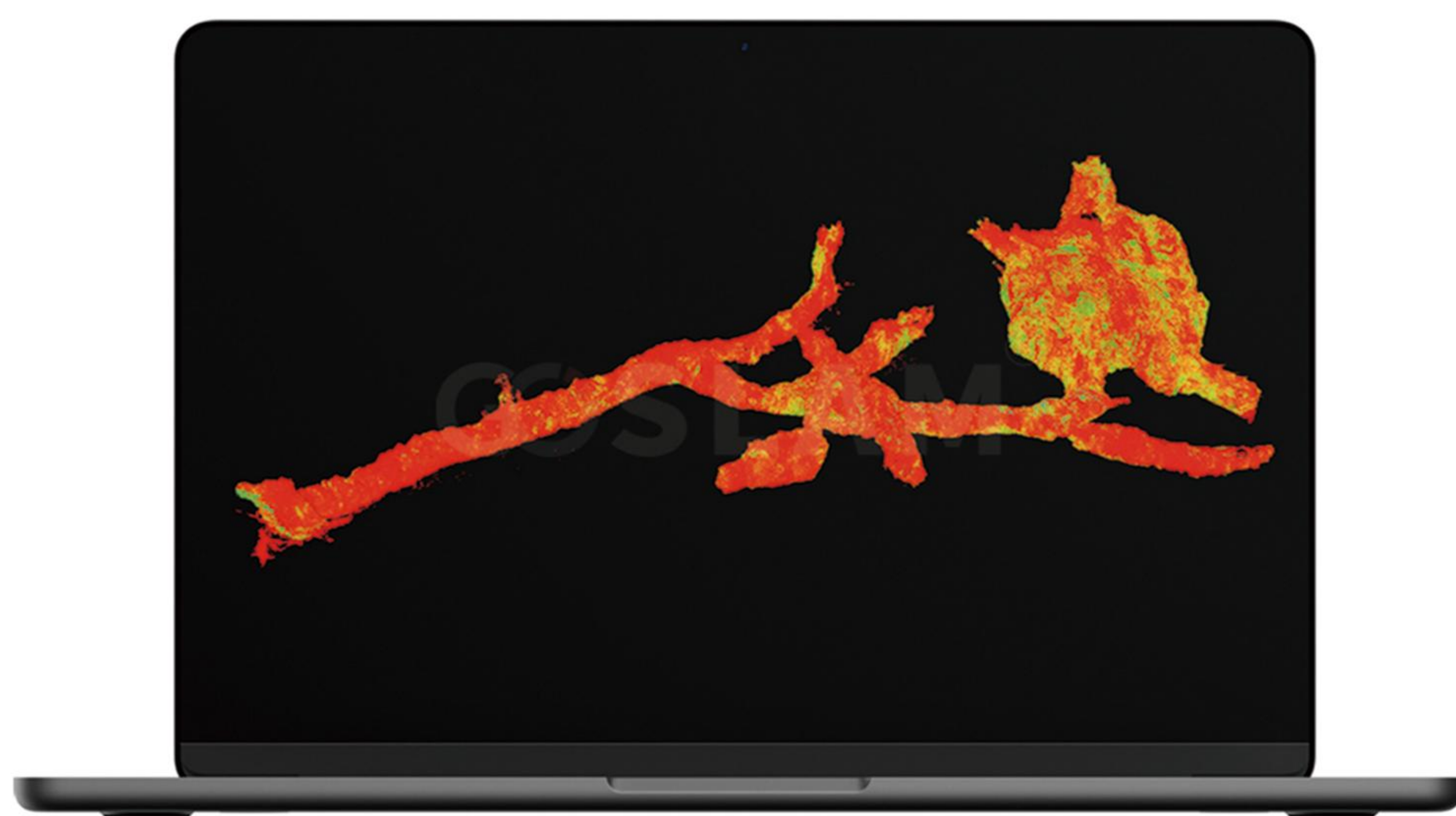
技术优势

非接触式测量,手持移动即可快速获取点云数据。设备扫描频率32万点/秒,扫描距离120米,点精度最高可达1cm。设备采用HSL混合解算技术,配备强大的建图系统,可以在扫描过程中对上一站数据进行后解算,高精度数据快人一步,效率大幅提升。

搭配独家专利双冗余供电系统,支持热插拔,供电时长可达4小时。同时手持端采用轻量化设计,并支持背包、车载、无人机等多平台搭载,轻松开启长时间户外作业模式!



*GoSLAM扫描矿洞实拍图



*GoSLAM扫描矿道点云数据实例图

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400-055-0771 (中国)

+86 10 8550 1141 (International)



官方微信号



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完善的矿山测量解决方案



拓普康/索佳 防爆全站仪系列

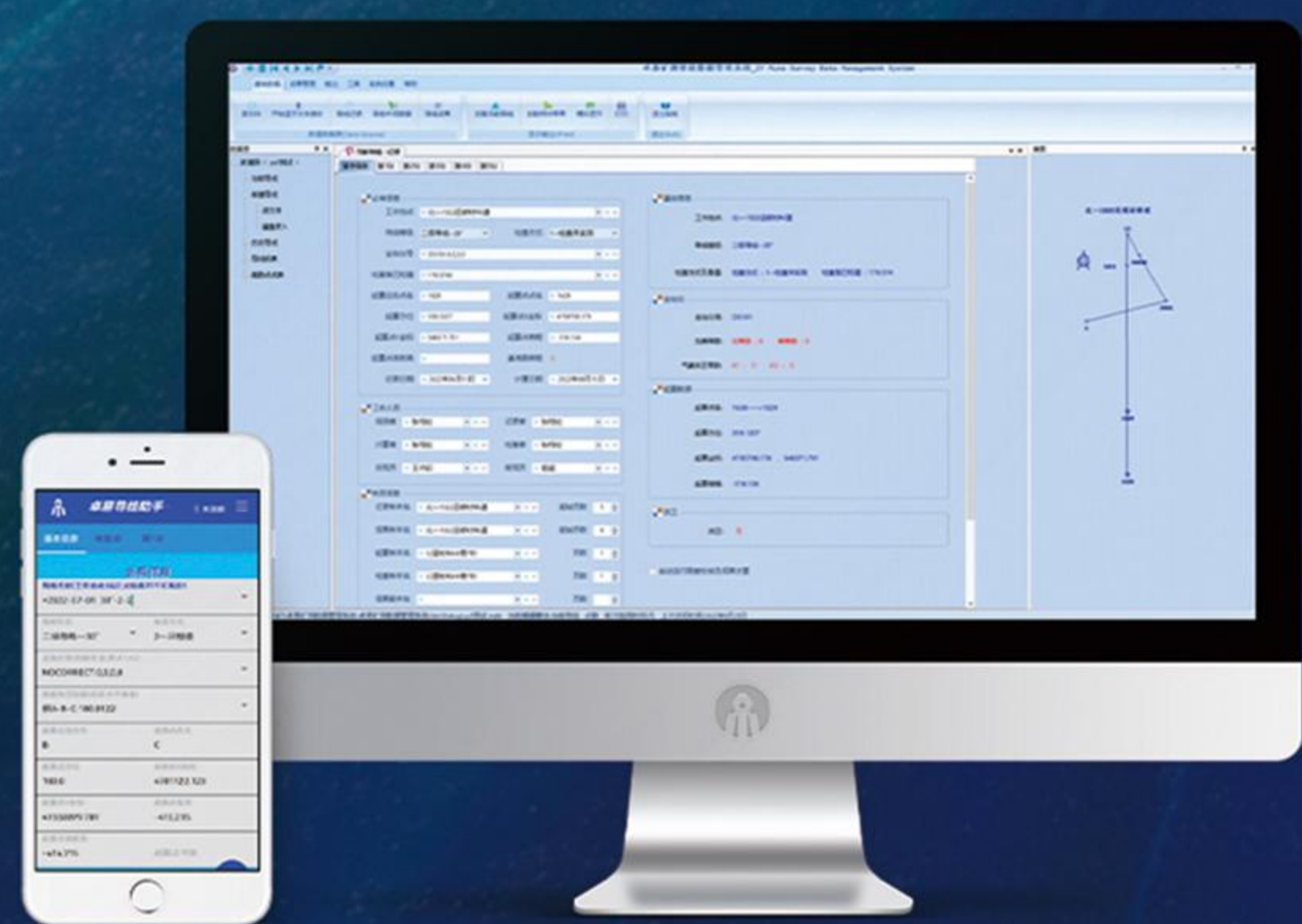
GTL-1200

防爆型全站式扫描仪



GLS-2200

防爆型三维激光扫描仪



卓易矿测智能数据管理系统

ZHUOYI MINE SURVEY INTELLIGENT DATA MANAGEMENT SYSTEM

卓易矿测智能数据管理系统是国内首款,通过手机控制全站仪,可接收多种数据源的矿山测量智能化软件。可完成井下导线测量、巷道自动成图、离散点展绘等工作。全过程无需手工记录,简化了导线测量步骤,提升矿山测量工作效率及数据的准确性、及时性,使三人测量导线成为可能。软件自定义的规则完全符合现行《煤矿测量规程》的要求。

拓普康索佳(上海)科贸有限公司

400-1278-066

www.topconchina.cn





沈阳鑫蓝图科技有限公司

SHENYANG NEWMAP SCIENCE&TECHNOLOGY CO.,LTD.



公司简介

COMPANY INTRODUCTION

沈阳鑫蓝图科技有限公司成立于2014年，是北京航天发射技术研究所、长安大学—航天16所惯性与智能测量工程研究中心在民用领域的重要战略合作伙伴，拥有多项国家级科技成果奖、国家级发明奖和专利技术；承担军民融合技术的联合研发和应用推广、销售等工作。

公司专注测绘综合服务，是一家为各类矿山智能化开采、安全生产、高新技术应用提供专业化、定制化解决方案的高科技企业。

沈阳鑫蓝图科技有限公司拥有一支极富商业和投资眼光的决策、管理团队；拥有一支富有团队合作精神的高素质的营销队伍；已组建一支专业性强、极富敬业精神、高水平的技术服务和技术研发队伍。在矿山产品研发、系统集成和工程项目上能更好地服务于广大客户。诚信经营，锐意创新的鑫蓝图，将为客户提供全程化、个性化、高效率、满意的服务，帮助客户打开一扇扇科技之门，方便之门！

企业介绍

COMPANY INTRODUCTION

北京东方中恒科技发展有限公司专注于微形变传感器开发、系统软件研发、物联网方案定制，自主研发多种智能传感器，物联网数据采集仪（MCU），IoT物联网通讯终端等核心硬件产品；以及态势感知智能诊断平台、三维BIM可视化数据平台等物联网管理平台软件。

产品系统广泛应用于多个行业领域，露天矿山、水利大坝、地铁隧道、桥梁路基、建筑房屋、数字孪生、智慧管控、市政安全等。产品系统受到国内高校、研究院等一线科研机构好评并长期使用。目前已参与了桥梁智能检测、工业疲劳等行业标准制定工作。



东方中恒

荣誉资质

HONORS & QUALIFICATIONS

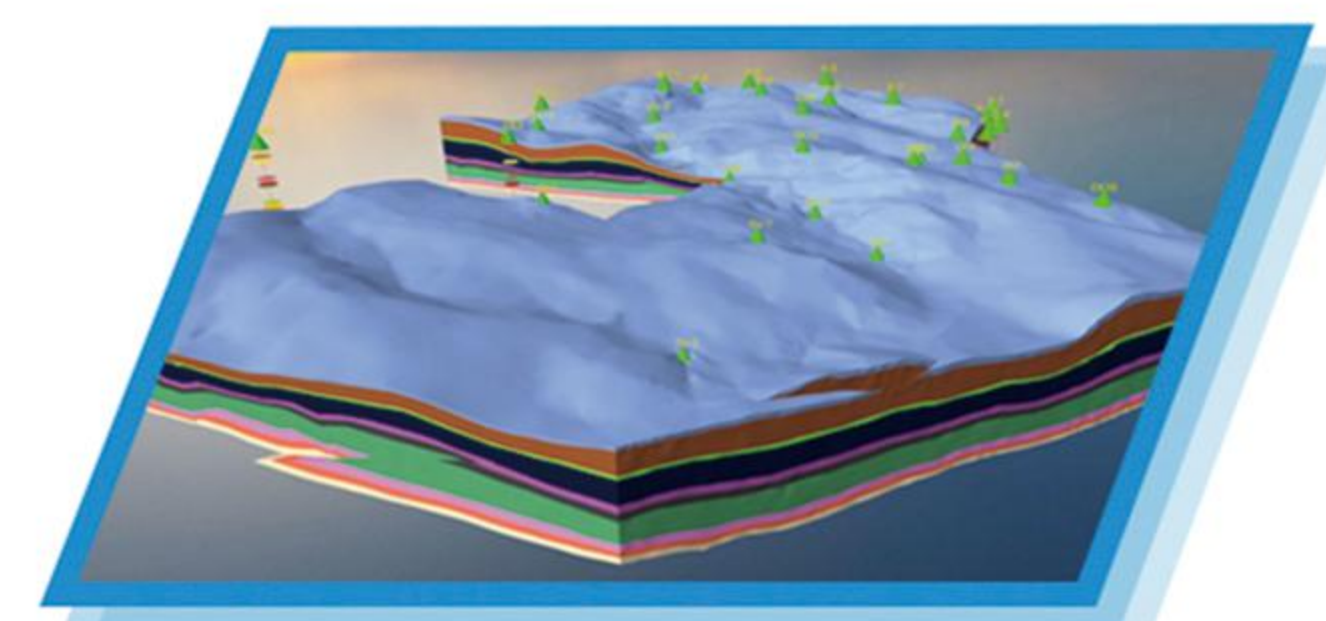
- 国家级高新技术企业
- 北京市“专精特新”中小企业
- 中关村高新技术企业
- 获得十余项专利证书
- 获得三十余项计算机软件著作权
- 世界传感器大会创新产品奖
- 华夏建设科学技术奖
- 多项产品系统获得北京新技术新产品认定
- ISO9001:2015质量管理体系认证证书
- 中国建筑学会团体会员
- 中国建设教育协会会员
- 中国测绘学会团体会员单位
- 中国通信工业协会物联网应用分会会员单位
- 中国模板脚手架协会会员单位
- 北京软件和信息服务业协会理事会员单位
- 中关村智盟环境土木智能检测监测产业联盟
- 北方工业大学研究生校外基地
- 自动化监测系统平台软件产品

重要业务领域

KEY BUSINESS AREAS



智慧矿山安全生产风险监测



智慧矿山地质保障系统



智慧矿山生态系统
全生命周期服务



桥梁施工及运营期健康监测



水库水文水质长期监测
大坝安全形变监测



隧道施工及运营期健康监测



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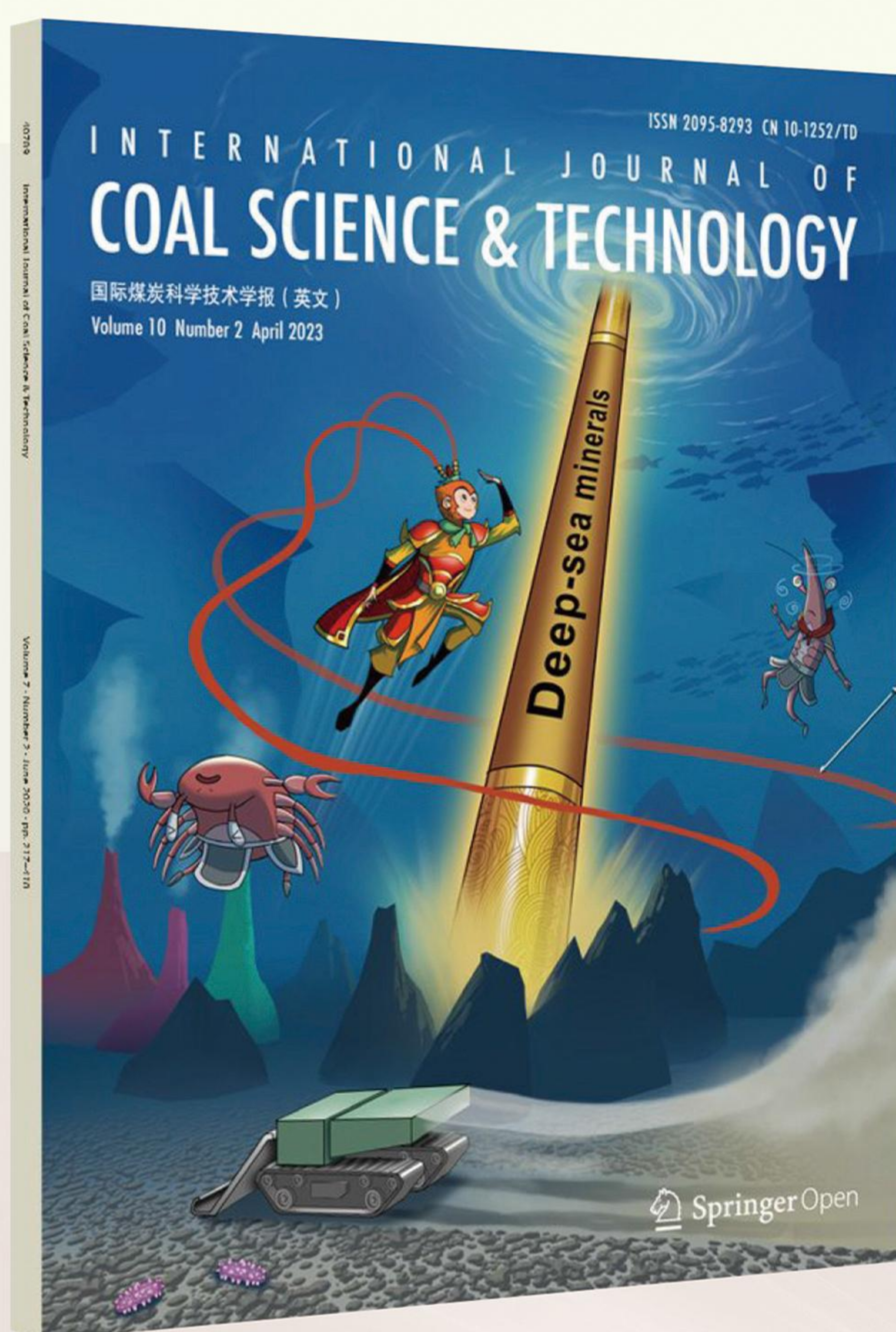


北京市石景山区鲁谷路泰禾长安中心A塔11层



International Journal of Coal Science & Technology

《国际煤炭科学技术学报(英文)》



Print ISSN 2095-8293
Electronic ISSN 2198-7823
CN 10-1252/TD

International Journal of Coal Science & Technology (IJCST) 是由中国科协主管，中国煤炭学会主办的一本能源类开放获取综合性学术期刊，创刊于2014年，双月刊，由Springer负责出版和发行，重点关注煤炭及相关领域科学研究和行业发展的热点问题。作为行业内少有的英文期刊，IJCST致力于打造为国内外学者展示研究成果，讨论行业内研究热点、难点的国际学术交流平台，推进矿业科学的发展和科技创新。目前，被ESCI、EI等国内外权威检索系统收录，入选“中国科技期刊卓越行动计划”项目。

征稿范围

本刊优先发表创新突出、科学性和技术性强的研究论文 (Research Article)、特定研究领域中的综述类文章 (Review)、案例分析 (Case study) 及分析评论 (Comment) 等，包括但不限于以下领域：地质、采矿、能源清洁高效利用、低碳技术、生态环境治理、碳基能源等。

投稿优势

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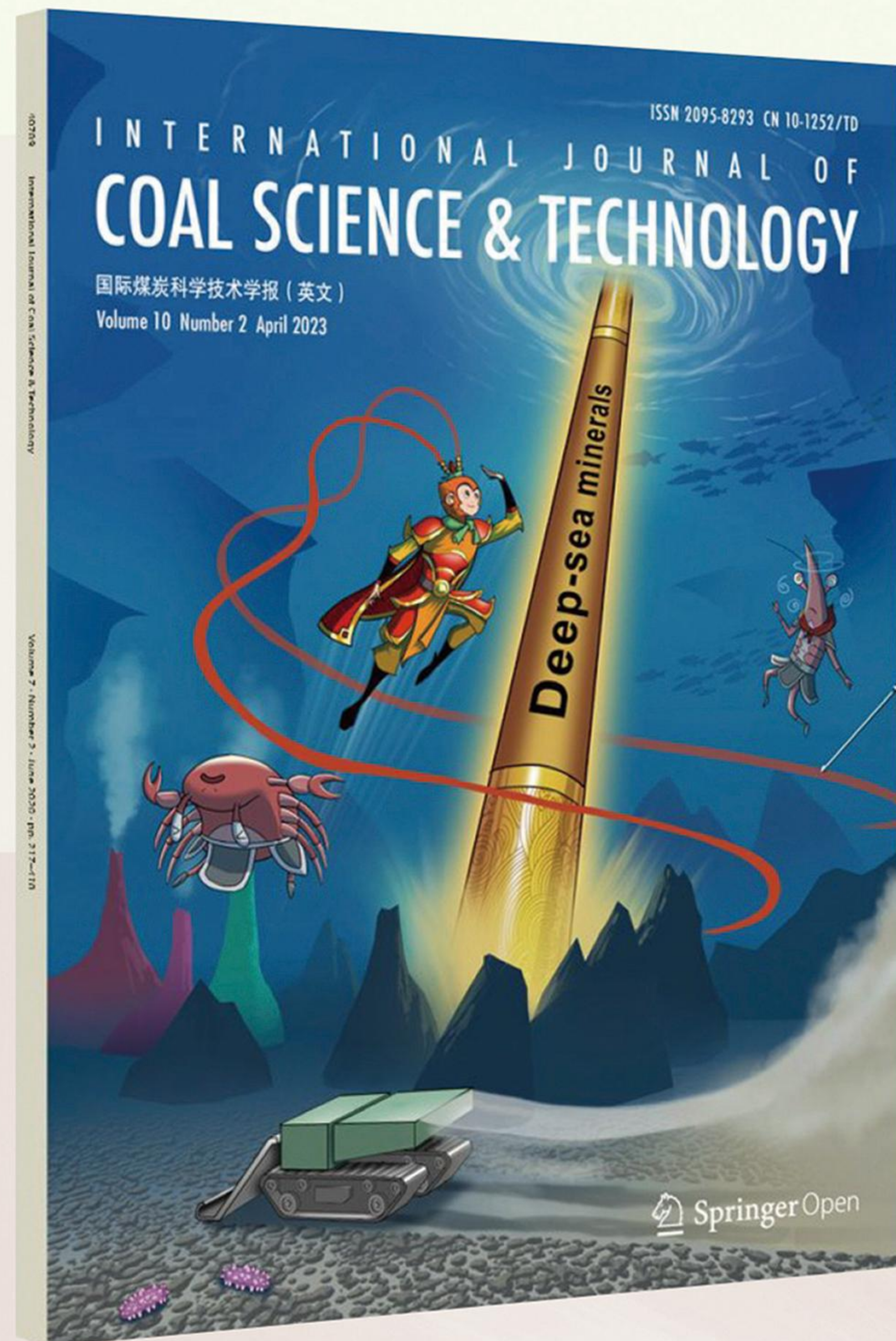


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Coal for Green & Clean

徐州简介

徐州是淮海经济区中心城市，先后获联合国人居奖、中国优秀旅游城市、全国双拥模范城、国家环保模范城市、国家卫生城市、全国文明城市、国家生态园林城市、国家创新型城市等称号。2022年GDP达8457亿元，位列全国第28位。

徐州是全国重要的综合交通枢纽。全国高速铁路和普通铁路在徐州呈“双十字交叉”，是高铁陇海线与京沪线的交汇点，前正在形成“米字型”高铁枢纽，高铁3小时内到达北京、上海、西安等城市。观音国际机场是国家一类对外开放航空口岸，开通了直飞日本、韩国、新加坡、香港、台湾等36条境内外航线。7条高速公路绕城而过，连通全国各地，是全国通达性最好的城市之一。

徐州是国家历史文化名城，是“彭祖故国、刘邦故里、项羽故都”，享有“两汉文化看徐州”的美誉。以汉墓、汉画像石、汉兵马俑为代表的“汉代三绝”名扬海内外。除两汉文化胜迹之外，项羽“戏马台”、刘邦“大风歌碑”、苏轼“放鹤亭”、北魏“大石佛”、唐代“燕子楼”，以及明清“城下城”遗址等历史胜迹遍布全市，使徐州这座古城处处散发着浓郁的文化气息和独特魅力。

徐州是快速发展的成长型城市，素有“淮海之都”之称，是淮海经济区中心城市，长江三角洲区域中心城市，徐州都市圈核心城市，新西兰产品中国展销中心总部驻地，国际性新能源基地，有“中国工程机械之都”和“世界硅都”的美誉。

An Introduction to Xuzhou

As the central city of Huaihai Economic Zone, Xuzhou has won the UN Habitat Scroll of Honour Award, China Excellent Tourism City, National Model City of Double Support, National Model City of Environmental Protection, National Health City, National Civilized City, National Ecological Garden City, National Innovative City and other titles. In 2022, its GDP reached 845.7 billion yuan, ranking the 28th in China.

Xuzhou is an important comprehensive transportation hub in China, with national high-speed railways and conventional railways forming a "double crossroads". As the intersection of Longhai high-speed line and Beijing-Shanghai high-speed line, Xuzhou is developing rapidly toward a "米-shaped" high-speed rail hub. By high-speed rail, Beijing, Shanghai, Xi'an and other metropolises are all accessible from Xuzhou within three hours. Xuzhou Guanyin International Airport is a national first-class air port with 36 international and domestic flight routes, including direct flights to Japan, South Korea, Singapore, Hong Kong, and Taiwan. Seven expressways go around the city, connecting it to all parts of the country. It boasts one of the most developed transportation networks in China.

As "Master Peng Zu's vassal state, Emperor Liu Bang's hometown, General Xiang Yu's old capital", Xuzhou is a famous historical and cultural city, also a must-visit city for Han Dynasty culture. The "Three Wonders of the Han Dynasty", namely, Han Tombs, Han Stone Relief Carvings and Han Clay Figurines of Terracotta Warriors and Horses, attract visitors from home and abroad. In addition to cultural monuments of the Han Dynasty, Xuzhou is also home to other historic relics including Xiang Yu's "Horse Training Platform", Liu Bang's "Great Wind Song Stele", Su Shi's "Crane Releasing Pavilion", the "Dashi Buddha" of the Northern Wei Dynasty, the "Swallow Tower" of the Tang Dynasty, and the "city under the city" remains of the Ming and Qing Dynasties. All these endow this ancient city with a unique cultural.



2023
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The logo for the 2023 XVIII ISM Congress is centered on a dark blue background. The year '2023' is rendered in white, with the '0' replaced by a globe icon. A small satellite icon is positioned above the '0'. Below the year, the text 'XVIII ISM' is displayed in white, with 'CONGRESS' in a smaller font on a red rectangular background underneath. The bottom of the image features a decorative wavy pattern of light blue lines.