Technical Program

GEM 2024 Shenzhen: International Workshop on Gravity, Electrical, and Magnetic Methods and Their Applications

Shenzhen, China   19-22 May 2024

Sunday, 19 May 2024	
09:00 - 19:30	**Registration** *Location: Lobby, Convention Center of SUSTech*
16:30 - 17:30	**Meeting of Technical Session Chairs** *Location: TBD*
17:30 - 19:00	**Icebreaker or Dinner** (TBD) *Location: TBD*

Monday, 20 May 2024	
08:00 - 16:00	**Registration** *Location: Lobby, Convention Center of SUSTech*
08:30 - 10:30	**Opening & Plenary Session** *(Session Chairs: TBD)* *Location: Conference Hall, 2nd Floor of Convention Center, SUSTech*
08:30 - 08:50	**Welcome Addresses**
08:50 - 09:25	Invited Keynote: **Geophysics in the energy transition: Opportunities for the next 50 years** by **John Bradford** from Colorado School of Mines
09:25 - 10:00	Invited Keynote: **Geophysical multiparameter fusion for temperature prediction and geothermal property characterization** by **Xiangyun Hu** from China University of Geosciences
10:00 - 10:30	**Workshop Group Photo, Morning Tea** *Location: TBD*

	Oral Session A: Gravity and Magnetics Processing and Interpretation (1) *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	Oral Session B: Electromagnetics - Applications *Chairs: TBD* *Location: Conference Hall-2, 2nd Floor of Convention Center, SUSTech*
10:30 - 12:10		
10:30 - 10:50	**Processing and interpretation of gravity and magnetic data of strike-slip faults and its applications** Yunxiang Liu*1, Hualu Si1, Wenju Zhao1 and Li Zhao1 1BGP, CNPC	**The Deformation Mechanism in the Western Qiangtang Terrane and Its Surroundings: Evidence from Magnetotelluric Data** Jiangfan Gu 1,2, Sheng Jin*2,3, Hao Dong*2,3, Wenbo Wei 2,3, Gaofeng Ye 2,3, Letian Zhang 2,3 1 SGIDI Engineering Consulting (Group) Co., Ltd, Shanghai, China, 200093 2 School of Geophysics and Information Technology, China University of Geosciences, Beijing, China, 100083 3 State Key Laboratory of Geological Processes and Mineral Resources, China University of Geosciences, Beijing, China, 100083
10:50 - 11:10	**A new global lithospheric magnetic field model derived from CSES satellite data** Jie Wang*1, Yanyan Yang1, Zhima Zeren1, Xuhui Shen2, Bin Zhou2, Magnes Werner3, Angelo De Santis4, Jianping Huang1, Changli Yao5, Zelin Li 6, Yuanman Zheng5, Shufan Zhao2, Hengxin Lu1, Qiao Wang1, Wei Chu1, Feng Guo1, Andreas Pollinger3 and Roland Lammegger7 1National Institute of Natural Hazards, Ministry of Emergency Management of China, China 2National Space Science Center, Chinese Academy of Sciences, China 3Space Research Institute, Austrian Academy of Sciences, Austria 4Istituto Nazionale di Geofisica e Vulcanologia, Via di Vigna Murata, Italy 5School of Geophysics and Information Technology, China University of Geosciences, Beijing, China 6School of Earth Science and Engineering, Hebei University of Engineering, China 7Institute of Experimental Physics, Graz University of Technology, 8010, Graz, Austria	**Hidden Faults Revealed by Magnetotelluric Method in Urbanized Region of Guangdong Province, China** Shaoting Feng1,2, Dikun Yang*1,2, Feng Jiang3, Peijie Wang2 and Lian Liu2 1Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai), Zhuhai, China 2Southern University of Science and Technology, China 3Chinese Academy of Sciences, China
11:10 - 11:30	**New Insights into the Geology of Johor Platform, Malaysia through Gravity & Magnetics Analysis** Joanna H.W. Kho, Roger V. Miller1, Prabal Shankar, Nur Akmal Abu Bakar, Mainak Choudhuri & M Akmal Affendi B Adnan PETRONAS Carigali, Kuala Lumpur, Malaysia 1 formerly PETRONAS Carigali, currently Geoscience Australia, Canberra, Australia	**Quantitative analysis of saturation of submarine natural gas hydrates using ocean resistivity imaging method** Qiu Ning*1,2,3, Pan Chunwu1,3, Liu Bin1,3, Sun Zhen1,2 1Key Laboratory of Ocean and Marginal Sea Geology, South China Sea Institute of Oceanology, Innovation Academy of South China Sea Ecology and Environmental Engineering, Sanya Institute of Ocean Eco-Environmental Engineering, Chinese Academy of Sciences, Guangzhou/ Sanya 511458/570206, China; 2Southern Marine Science and Engineering Guangdong Laboratory (Guangzhou), Guangzhou 511458, China; 3University of Chinese Academy of Sciences, Beijing 100049, China
11:30 - 11:50	**A framework for identifying metallogenic intrusions from 2D to 3D based on geological-geophysical datasets in the Wulonggou gold district, Qinghai Province, China** Meng Gao1,2 and Gongwen Wang*1,2,3 1School of Earth Sciences and Resources, China University of Geosciences (Beijing), Beijing 100083, China 2Frontiers Science Center for Deep-time Digital Earth, China University of Geosciences (Beijing), Beijing 100083, China 3Beijing Key Laboratory of Land and Resources Information Research and Development, Beijing 100083, China	**Boulder detection by multi-source transient electromagnetic method in shield TBM tunnel** Wenhan Li1, Zhipeng Qi1, and Xiu Li1 1.College of Geological Engineering and Ceomatics, Chang'an University,Xi'an 710054,China
11:50 - 12:10	**Application of gravity and seismic joint correction technology for slip deformation of gypsolyte-salt layers in deep exploration of high and steep structures in SZ area** Dabing Yang*1, Yulin He2, Pingchao Fang2, Zebin Liu1, Zhaobing Luo1 1BGP Inc., China National Petroleum Corporation 2Petro China Southwest Oil&Gas field Company	**Airborne electromagnetic data interpretation with deep learning-based stochastic inversion and posterior distribution clustering with application to salinization detection** Sihong Wu*1, Jiajia Sun1 and Jiefu Chen2 1Department of Earth and Atmospheric Sciences, University of Houston, United States 2Department of Electrical and Computer Engineering, University of Houston, United States
12:10 - 13:30	**Lunch** *Location: TBD*	
13:30 - 14:50	Poster Session P1: Gravity and Magnetics - New Methods and Developments *Chairs: TBD* Location: Conference Hall-3, 2nd Floor of Convention Center, SUSTech	Poster Session P2: Electromagnetics Applications *Chairs: TBD* *Location: Conference Hall-3, 2nd Floor of Convention Center, SUSTech*
	Forward modeling and inversion of variable density interface in spherical coordinate system Yatong Cui*1 1Tianjin Survey Design Institute Group Co., Ltd, China	**GPR noise suppression algorithm based on compressed parallel non-local mean filtering method** Yatong Cui*1 1Tianjin Survey Design Institute Group Co., Ltd, China
	Global Optimization of Self-Potential Anomalies via HGS Algorithm Hanbing Ai*1 and Kejia Su2 1School of Geophysics and Geomatics, China University of Geosciences, Wuhan, Hubei, 430074, China 2Research Institute No.270, CNNC, Nanchang, Jiangxi, 330200, China	**Determination of crust-mantle electrical boundary based on magnetotelluric inversion in North China** Kexin Zhu-11,2 and Xingong Tang-2*1,2 1Key Laboratory of Exploration Technologies for Oil and Gas Resources of MOE, Yangtze University, Wuhan, Hubei,China 2School of Geophysics and Petroleum Resources, Yangtze University, Wuhan, Hubei 430100, China
	Sparse magnetization vector inversion with magnitude and direction constraints in Cartesian coordinates Yang Ou*1,2, Jie Zhang2, Dingyu Jia2, Yang Li2, Yi Yang2 1School of Geophysics and Information Technology, China University of Geosciences (Beijing), Beijing, China 2Institute of Geophysical and Geochemical Exploration, Chinese Academy of Geological Sciences, Hebei, China	**3D CSEM forward modeling using the restarted rational Krylov subspace algorithm and Octree meshes** Liu Jiren1, Tang Jingtian*1, Xiao Xiao1, and Xu Jintong1 1School of Geosciences and Info-Physics, Central South University, Changsha 410083, China

Improved Estimation of Curie-point Depth Using IRLS-centroid Method for Fractal Distribution of Sources Hui Luan*1,2 , Jusong Ma1, Meng Xu1, Nansong Chang1 and Baofeng Tian1,2 1College of Instrumentation and Electrical Engineering, Jilin University, Changchun, China 2Key Laboratory of Earth Information Detection Instruments, Ministry of Education, Jilin University, Changchun, China	**Permeability inversion of hydrogeologic data under full-decay induced polarization constraints** Lichao Nie*1,2 and Yuancheng Li*1,2 1Geotechnical and Structural Engineering Research Center, Shandong University, Jinan, Shandong 250061, China 2School of Civil Engineering, Shandong University, Jinan, Shandong 250061, China
3D source-growing inversion of gravity gradient data based on depth weighting Zhenlong Hou*1, Xinyang Zhao1, and Jiahui Wang1 1School of Resources and Civil Engineering, Northeastern University, China	**The influence of potassium content on the electrical conductivity of melts** Jinyu Chen-1*1, Yusong Li-22,3 and Hao Dong-3*2,3 1State Key Laboratory of Earthquake Dynamics, Institute of Geology, China Earthquake Administration, China 2School of Geophysics and Information Technology, China University of Geosciences (Beijing), China 3State Key Laboratory of Geological Processes and Mineral Resources, China University of Geosciences (Beijing), China
Application study of UAV aeromagnetic measurement based on Rubidium Optical Pump Magnetometer Peng Yuan1, Zhong-kun Qiao1,2* 1College of Science, Zhejiang University of Technology, China 2Frontiers and Interdisciplinary Science, Zhejiang University of Technology, China	**Gauss–Newton with Preconditioned Conjugate Gradient Magnetotelluric Inversion for 3D Axial Anisotropic Conductivities** Junjun Zhou-11, Ning bo Bai-21, Xiangyun Hu-3*2 , Tiaojie Xiao-43, and Guoshu Huang-54 1Department of Physics and Electronic Information, Henan Polytechnic University, China 2The School of Geophysics and Geomatics, China University of Geosciences, China 3College of computing, National University of Defense Technology, China 4Department of Earth Science and Engineering, Shanxi Institute of Technology, China
Adaptive Joint Optimization for Interference Fringe Fitting in Cold Atom Gravimetry Yida Wang1,2, Yujuan Liu1,2 and Tingting Lin*1,2 1Key Laboratory of Geophysical Exploration Equipment, Ministry of Education, Jilin University, Changchun 130061, China 2College of Instrumentation and Electrical Engineering, Jilin University, Changchun 130061, China	**Magnetotelluric (MT) Inter-station Impedance Analysis on Littoral Fault Zone (LFZ)** Yan Zhou*12 and Dikun Yang1 1Departament of Earth and Space Sciences, Southern University of Science and Technology, Shenzhen, China
A Fast Equivalent Source Method for Airborne Magnetic data Jirigalatu*, Xueping Dai, Shuling Li Department of Petroleum, China University of Petrolum – Beijing at Karamay, China	**Application of Dual-Frequency Resistivity with forward and inverse pole-dipole array for groundwater exploration in Huarong County, Hunan, China** Osama Abdul Rahim12, Rujun Chen12*, Liu Chunming13*, Hesham El-Kaliouby4, Ijaz Ahmed12, Jawad Ahmad12, Farid Ullah12, Li Rui12, Shahid Ali Shah12, Shah Fahad12 1School of Geosciences and Info-Physics, Central South University, China 2AIoT Innovation and Enterpreneurship Education Center for Geology and Geophysics, Central South University, China 3Key Laboratory of Nonferrous Resources and Geological Hazard Detection of Hunan Province, Central South University, China 4Department of Geophysical Sciences, National Research Centre, Egypt
3D mixed-norm inversion of magnetic data using a log-barrier method Zelin Li*1 and Changli Yao2 1School of Earth Science and Engineering, Hebei University of Engineering, Handan, China 2School of Geophysics and Information Technology, China University of Geosciences, Beijing, China	**Background EM Noise Characterization in Deep Underground Mining Tunnels** Xueping Dai-1, Jun Niu-1*, Lizhen Cheng-2, Jirigalatu-1, Weibiao Xie-1 1.Department of Petroleum, China University of Petrolum – Beijing at Karamay, China 2.Institut de recherche en mines et environnement, Université du Québec en Abitibi-Témiscamingue
Data sensing approach to minimize the memory requirement of the gravity inversion **Tao Chen* and Ying Rao** College of Geophysics, China university of Petroleum (Beijing), China	**Application of electromagnetic method to find mineral breakthroughs in the shallow covered area of Gouli gold field in the East Kunlun metallogenic belt** Ji'en Dong *1,2 and Gaofeng Ye 2 1Qinghai Geological Surey, MNR Technology Inoration Center for Exploration and Exploitation of Strategic Mineral Resources in Plateau Desert Region ,China 2School of Geophysics and Information Technology, China University of Geosciences, Beijing, China
3D Logarithmic inversion of magnetic amplitude data Yu Li1, Peng Yu1, Chongjin Zhao1, and Ming Hu1 1State Key Laboratory of Marine Geology, Tongji University, Shanghai, China.	**Study on the marine magnetotelluric model in the southwestern sub-basin of the South China Sea** Yunsheng Zhao1,2, Jianping Li3, Yan Gao3, Zhanxiang He*2,4 1Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou 0572, China 2Guangdong Provincial Key Laboratory of Geophysical High-resolution Imaging Technology, Southern University of Science and Technology, Shenzhen 518055, China 3Guangzhou Marine Geological Survey, Guangzhou 511400, China 4Department of Earth and Space Sciences, Southern University of Science and Technology, Shenzhen 518055, China
Large-Scale Gravity and Gravity Gradient Joint Inversion Method Based on BTTB Matrix Compression Luofan Xiong1, Zhengyuan Jia*1, Gang Zhang1,2 and Guibin Zhang1 1School of Geophysics and Information Technology, China University of Geosciences, Beijing 100083, China 2Key Laboratory of Intraplate Volcanoes and Earthquakes (China University of Geosciences, Beijing), Ministry of Education, Beijing 100083, China	

	Break	
14:50 - 15:00		

15:00 - 16:00	**Oral Session C: Gravity and Magnetics Processing and Interpretation (B)** *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	**Oral Session D: Gravity and Magnetics Interpretation and Inversion (A)** *Chairs: TBD* *Location: Conference Hall-2, 2nd Floor of Convention Center, SUSTech*

Time		
15:00 - 15:20	**Higher-order singular value tensor decomposition and Fourier synchrosqueezing transform-based tuning frequency estimation of a proton precession magnetometer** Wenjingping Zhang1, Huan Liu*1, Haobin Dong1 and Xiangyun Hu2 1Hubei Key Laboratory of Advanced Control and Intelligent Automation for Complex Systems, School of Automation, China University of Geosciences, China 2School of Geophysics and Geomatics, China University of Geosciences, China	**Gravity inversion using L0 norm for sparse constraints** Dan Zhu*1, Xiangyun Hu1 and Shuang Liu1 1 Hubei Subsurface Multi-scale Imaging Key Laboratory, School of Geophysics and Geomatics, China University of Geosciences, Wuhan, China
15:20 - 15:40	**Technology and application of gravity terrain correction based on LiDAR data** Zhao Wenju* , Wang Hongbin , Dong Changhua and Zhao Li BGP,Zhuozhou Hebei	**Adaptive mesh-free approach for gravity inversion** Yan Liu*1,2, Yao Huang1,3, Qingtian Lü1,2, and Shuang Liu3 1Chinese Academy of Geological Sciences, Beijing, China 2Deep Earth Science and Exploration Technology Laboratory, Ministry of Natural Resources, Beijing, China 3Institute of Geophysics and Geomatics, China University of Geoscience, Wuhan, China
15:40 - 16:00	**A new magnetic transformation weakly sensitive to magnetization direction at low latitudes** Ming Hu1, Peng Yu*1, Chongjin Zhao1, and Luolei Zhang1 1State Key Laboratory of Marine Geology, Tongji University, Shanghai, China.	**Trans-dimensional geometrical inversion: application to undercover imaging using gravity data** Jeremie Giraud*1,2,, Mahtab Rashidifard2,3, Vitaliy Ogarko2,3, Guillaume Caumon1,5, Lachlan Grose5, Julien Herrero1, Paul Cupillard1, Mark Lindsay6,7, Mark Jessell2,3,7, and Laurent Aillères5. 1GeoRessources, Université de Lorraine-CNRS, RING – ENSG, Vandoeuvre-les-Nancy, F-54000, France. 2Centre for Exploration Targeting, School of Earth Sciences, The University of Western Australia, Perth 6000, Australia. 3Mineral Exploration Cooperative Research Centre, The University of Western Australia, Perth, Australia. 4Institut Universitaire de France (IUF), 75000, Paris, France. 5School of Earth Atmosphere and Environment, Monash University, Melbourne 3800, Australia. 6CSIRO Mineral Resources, Australian Resources Research Centre, Kensington 6151, Australia. 7ARC Industrial Transformation Training Centre in Data Analytics for Resources and Environment (DARE), Sydney, Australia
16:00 - 16:10	**Afternoon Tea** *Location: TBD*	
16:10 - 17:10	**Oral Session E: Electromagnetics - Processing and Inversion** *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	**Oral Session F: Gravity and Magnetics Interpretation and Inversion (B)** *Chairs: TBD* *Location: Conference Hall-2, 2nd Floor of Convention Center, SUSTech*
16:10 - 16:30	**Bayesian inversion of airborne EM data with spatial correlation prior information** Jianmei Zhou*1,2 and Dirk Husmeier2 1Department of Geophysics, Chang'an University, China 2School of Mathematics and Statistics, University of Glasgow, United Kingdom	**Applications of Integrated Geophysical Exploration Techniques for Deep Oil & Gas Targets in the Ordos Basin** Xiaodong Suo*, Ximing Sun, Zhanjun Yang, Hui Wang, Zhaofang Zhang, BGP Inc., China National Petroleum Corporation, Zhuozhou, 072751, China
16:30 - 16:50	**3D TTI Gauss-Newton inversion, data step-change in imaging of CSEM data** Dag Helland-Hansen1 and Friedrich Roth1 1EMGS, Oslo Norway	**Influence of the Moho surface distribution on the oil and gas basins in China seas and adjacent areas** Yimi Zhang1,2 and Wanyin Wang*1,2,3 1Department of Geophysics , Chang'an University, China 2National Engineering Research Center of Offshore Oil and Gas Exploration, China 3Key Laboratory of Marine Geology and Environment, Chinese Academy of Sciences, China
16:50 - 17:10	**3D Gauss-Newton inversion of surface-borehole TEM data** Chong Liu1, LiZhen Cheng1, Michel Chouteau2, Fouad Erchiqui3 1 Institut de recherche en mines et environnement, Université du Québec en Abitibi-Témiscamingue 2 École Polytechnique de Montréal, Département des génies civil, géologique et des mines 3 Université du Québec en Abitibi-Témiscamingue, 445 boul. de l'Université	**Application of gravity interface inversion based on improved 3D varying density model in South China Sea** *Shuling Li1,2, Kai Li2, Xueping Dai1, Ji-ri-ga-la-tu1 1School of Petroleum, China University of Petroleum-Beijing at Karamay 2School of Geophysics and Information Technology, China University of Geosciences-Beijing
18:00 - 20:00	**Dinner** *Location: TBD*	

	Tuesday, 21 May 2024	
08:00 - 16:00	**Registration** *Location: Lobby, Convention Center of SUSTech*	
08:30 - 09:40	**Plenary Session** *(Session Chairs: TBD)* *Location: Conference Hall, 2nd Floor of Convention Center, SUSTech*	
08:30 - 09:05	Invited Keynote: **The MSS Geomagnetic Satellite Constellation: Understanding the Earth's coupled magnetic system** by **Keke Zhang** from Macau Institute of Space Technology and Application, Macau, China, and Macau University of Science and Technology, Macau, China	
09:05 - 09:40	Invited Keynote: **Advancements in Geophysical Monitoring of Tailings Dams: Integrating Geophysical Methods with Geotechnical Instrumentation for Improved Safety and Environmental Management** by **Marco Antonio Braga** from Federal University of Rio de Janeiro	
09:40 - 09:50	**Break**	
09:50 - 10:50	**Oral Session G: Electromagnetics - Modeling (1)** *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	**Oral Session H: Mineral Exploration (1)** *Chairs: TBD* Location: Conference Hall-2, 2nd Floor of Convention Center, SUSTech
09:50 - 10:10	**Two tactics for accurate frequency-domain CSEM modelling** Pengliang Yang*, An Ping, Harbin Institute of Technology, China	**Cu-polymetallic deposit exploration under thick cover in Gucheng-Yaxi Area using audio magnetotelluric and spread spectrum induced polarization** Farid Ullah1,2, Chen Rujun*1,2,3 , Regean Pitiya1,2, Hu Hao4, Yang Lunkai4, Hu Jian4, Zhou Xin4, Wu Qi4, Yao Hongchun1,2, Wang Quanggong4, Cheng Shuang5 1School of Geosciences and Info-Physics, Central South University, Changsha 410083 2AIoT Innovation and Entrepreneurship Education Center for Geology and Geophysics, Central South University, Changsha, 410083, China 3Key Laboratory of Nonferrous Resources and Geological Hazard Detection of Hunan Province, Central South University, Changsha 410083, China 4 Research Institute of Geochemical Exploration and Marine Geological Survey, ECE, China 5Giant Sequoia AI Technology (Changsha) Limited, China
10:10 - 10:30	**High-precision terrain correction technique for 3D MT data in complex areas** Hu Zuzhi*1, Ren Jie1, Wang Yang2, Zhang Pengyue,1 Liu Juan,1 Wang Hongbin1 1BGP, CNPC, Zhuozhou,China 2Tarim Oilfield, CNPC, Korla, China	**Experiment of audio-magnetotelluric and dual-frequency induced polarization joint inversion in a Pb-Zn ore deposit in inner Mongolia, China** Shah Fahad1,2, Liu Chunming*1,2,3, Chen Rujun*1,2,3 , Jawad Ahmad1,2, Farid Ullah1,2, Ijaz Ahmed1,2, Osama Abdul Rahim1,2, Osama Ahmad 1, Shahid Ali Shah1,2 , Li Rui1,2 1School of Geosciences and Info-Physics, Central South University, China 2AIoT Innovation and Entrepreneurship Education Center for Geology and Geophysics, Central South University China 3Key Laboratory of Nonferrous Resources and Geological Hazard Detection of Hunan Province, Central South University, China
10:30 - 10:50	**A rapid reduced basis approach for 3D magnetotelluric forward modelling** Hao Dong*1,2 and Yijie Cui1,2 1China University of Geosciences, Beijing, 100083, China 2Key Laboratory of Intraplate Volcanoes and Earthquakes, Ministry of Education, Beijing 100083, China	**Quasi-Geological Model of North Singhbhum Mobile Belt, Eastern India Based on 3-D Pontential Field Data Inversion and Machnine Learning** G.Srinivasa Rao*1 and Rama Chandrudu Arasad2 1Departamento Earth Sciences, Indian Institute of Technology Bombay, India 2Department of Applied Geophysics, Indian Institute of Technology (Indian School of Mines) Dhanbad, India
10:50 - 11:00	**Break**	
11:00 - 12:00	**Oral Session I: Electromagnetics - Modeling (2)** *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	**Oral Session J: Mineral Exploration (2)** *Chairs: TBD* Location: Conference Hall-2, 2nd Floor of Convention Center, SUSTech
11:00 - 11:20	**Fast Electromagnetic Simulation in Cylindrical Geometries using Numerical Mode Matching Method based on Mixed-order Spectral Element Method** Dezhi Wang*1 , Junwen Dai2 and Qing Huo Liu2 1School of Electrical and Computer Engineering, Purdue University, United States 2Department of Electrical and Computer Engineering, Duke University, United States	**Targeting potential mineral deposits via uncertainty analysis of magnetic inversions** Ce Yang1,2, Xiaolong Wei*3, Bing Liu1, Guitao Sun1, Ji'en Dong2,4, Li Sun1, Xiujing Tang1, Baochun Li2,5, Gaofeng Ye2 1 No.7 Geological Brigade Co., Ltd. of Liaoning Province, China 2 School of Geophysics and Information Technology, China University of Geosciences, Beijing, China 3 Department of Earth and Planetary Sciences, Stanford University, United States 4 Geological Survey Bureau of Qinghai Province, China 5 School of Resources and Environmental Engineering, Inner Mongolia University of Technology, China

Time	Session / Presentation	
11:20 - 11:40	**Source decoupling and model order reduction for 3D full-time TEM modeling** Jianmei Zhou*1 , YihaoWen1, Wentao Liu1 and Xiu Li1 1Department of Geophysics, Chang'an University, China	**Multiscale electromagnetic explorations of the Dachang Sn-polymetallic metallogenic system** Chenggong Liu1, Sheng Jin*1,2, Jianen Jing1,2, Wenbo Wei1, Gaofeng Ye1,2, and Chengliang Xie1,2 1 School of Geophysics and Information Technology, China University of Geosciences, Beijing 100083, China 2 Key Laboratory of Intraplate Volcanoes and Earthquakes (China University of Geosciences, Beijing), Ministry of Education, Beijing 100083, China
11:40 - 12:00	**An efficient Extrapolation Multigrid method for Three-dimensional Magnetotelluric Finite Element Modeling using Hierarchical Semi-structured Tetrahedron Grids** Xu Han-1*1, Kejia Pan-21 and Zhengguang Liu-31,2 1School of Mathematics and Statistics, Central South University, China 2School of Geosciences and Info-Physics, Central South University, China	**What role can Electrical resistivity and Induced Polarization play in the search for new copper deposits in China?** Dr Catherine Truffert1 1IRIS Instruments, France
12:00 - 13:30	**Lunch** *Location: TBD*	
13:30 - 14:50	**Poster Session P3: Electromagnetics - New Methods and Techologies** *Chairs: TBD* *Location: Conference Hall-3, 2nd Floor of Convention Center, SUSTech*	**Poster Session P4: Machine Learning and its Applications** *Chairs: TBD* *Location: Conference Hall-3, 2nd Floor of Convention Center, SUSTech*
	3D MT modeling in conductive anisotropic and magnetic media using FE method with a divergence correction Xu Cheng-11,2, Tiaojie Xiao-2*1,2, Rujun Chen-33, Chunye Gong-41,2, Junjun Zhou-54, Bo Yang-61,2 and Jie Liu-71,2 1College of computing , National University of Defense Technology, China 2Laboratory of Digitizing Software for Frontier Equipment, Naitonal University of Defence Technology, China 3School of Geosciences and Info-Physics,Central South University, China 4Henan Polytechnic University, Department of Physics and Electronic Information, China	**Gravity And Magnetic Field Data Integration Using Autoencoder Neural Networks** Wei Wu*1, Xueguo Chen1, Peng Xiang1, Zhuqiang Li1, Guozhi Feng1, Tao Guo1, Li Ban1 1Research Institute of Exploration and Development, Shengli Oilfield, SINOPEC, China
	Resistivity information of formation in transient electromagnetic response of cased well Yongjin Shen1 and Yuanda Su1 1School of Geoscience, China University of Petroleum (East China), Qingdao, Shandong, China	**Research on Two-Dimensional Magnetotelluric Inversion Based on Residual Neural Networks** Junhu Yu-11,2 and Xingong Tang-2*1,2 1Key Laboratory of Exploration Technologies for Oil and Gas Resources of MOE, Yangtze University, Wuhan, Hubei,China 2College of Geophysics and Petroleum Resources, Yangtze University, Wuhan, Hubei 430100, China
	Fast Forward Modeling of 3-D Magnetotelluric via Neural Networks Peifan Jiang and Xuben Wang* Key Laboratory of Earth Exploration and Information Techniques of Education Ministry, College of Geophysics, Chengdu University of Technology, China	**Fast Forward Modeling of 3-D Magnetotelluric via Neural Networks** Peifan Jiang and Xuben Wang* Key Laboratory of Earth Exploration and Information Techniques of Education Ministry, College of Geophysics, Chengdu University of Technology, China
	Optimization of resistivity tomography data for hardened sites based on ratio method Jiang Fuyu-11, Ni Jiong-2 1,Gao Likun-32*, Chen Haijun -43, Li Fuqiang-54 1School of Earth Science and Engineering, Hohai University, Nanjing 2First Geological Brigade of Jiangsu Bureau of Geology and Mineral Resources, Nanjing 3Nanjing hydraulic research institute, National Energy Administration, Ministry of Transport, Ministry of Water Resources, Nanjing 4China Energy Construction Group Hunan Electric Power Design Institute Co., Ltd., Changsha	**Anisotropy Identification in Magnetotelluric Data Using Deep Learning Methods** Yusheng Zhu1,2 , Yu Gu1,2*, Jintong Xu1,2 1School of Geosciences and Info-Physics, Central South University, China 2Key Laboratory of Metallogenic Prediction of Nonferrous Metals and Geological Environment Monitoring, Ministry of Education, Central South University, China
	Transient electromagnetic 3D inversion considering current turn-off time Yanfu Qi*1,2 , Naiquan Sun1,2, Zhipeng Qi1,2, Jianmei Zhou1,2 and Xiu Li1,2 1 College of Geology Engineering and Geomatics, Chang'an University, China 2 Integrated Geophysical Simulation Laboratory, Chang'an University, China	**An Improved Genetic Support Vector Machine Method For Aeromagnetic Anomaly Detection** Yuxin Yang -11,2, Pengfei Zhang -2*1,2 Ying Shen1,2 and Changlong Li-31,2 1Qingdao Innovation and Development Center of Harbin Engineering University Qingdao 266400 ,China 2Qingdao Innovation and Development Base, Harbin Engineering University, Qingdao 266400, China
	Controlled-Source Frequency Electromagnetic Method with Multiple Reference channels Heng Zhang1,2 and Yang Yang*1,2 1Geotechnical and structural engineering research center, Shandong University, China 2School of civil engineering, Shandong University, China	**A Novel Method for Gravity Data Continuation from undulating Surface to a Horizontal Plane Based on Deep Learning** WeiChen Li1, Jun Wang1,1 XiaoHong Meng1, and Biao Xi2,3 1School of Geophysics and Information Technology, China University of Geosciences, China. 2CAS Engineering Laboratory for Deep Resources Equipment and Technology, Institute of Geology and Geophyics, Chinese Academy of Sciences, China. 3College of Earth and Planetary Sciences, University of Chinese Academy of Sciences, China.
	Advancements in an efficient, massive, and reality-oriented three-dimentional inversion framework for frequency-domain controlled-source electromagnetic data Zhengguang Liu*1, Zhengyong Ren2, Kejia Pan1 and Jingtian Tang2 1School of Mathematics and Statistics, Central South University, Changsha, 410083, China. 2School of Geosciences and Info-Physics, Central South University, Changsha, 410083, China.	**Forward modeling guided deep learning for 3D gravity inversion** Li Bosen1 and Lu Baoliang*1,2,3 1School of Geological Engineering and Geomatics, Chang'an University, Xi'an 710054, China 2National Engineering Research Center of Offshore Oil and Gas Exploration, Beijing 100028, China 3Key Laboratory of Western Mineral Resources and Geological Engineering, Ministry of Education, Xi'an 710054, China

Development of a robust inversion method for electromagnetic well logging Changmin Fu* and Qingyun Di CAS Engineering Laboratory for Deep Resources Equipment and Technology, Institute of Geology and Geophysics, Chinese Academy of Sciences, China	**Physics-Informed Neural Networks (PINNs) for gravity field modelling and representation: with application to asteroid EROS** Leyuan Wu*1,3 , Longwei Chen2,3, Philip Livermore3 , Sjoerd de Ridder3 and Chong Zhang4 1College of Science, Zhejiang University of Technology, HangZhou, China 2College of Earth Sciences, Guilin University of Technology, Guilin, China 3School of Earth and Environment, University of Leeds, Leeds, LS2 9JT, UK 4Chinese Academy of Geological Sciences, Beijing, China
Inverse Wavefield Transform for the Magnetic Components of the Loop-source Transient Electromagnetic Data Kerui Fan1,2, Lei Xu,1,3, Shangqu Sun2 and Peng He2 1Key Laboratory of Engineering Geophysical Prospecting and Detection of Chinese Geophysical Society, Wuhan, China 2College of Civil Engineering and Architecture, Shandong University of Science and Technology, Qingdao, China 3Changjiang Geophysical Exploration & Testing Co., Ltd., Wuhan China.	**Three-dimensional basin basement boundary inversion of gravity anomalies based on EfficientNetV2 network** Yu Zhang1,Zhengwei Xu*,Minghao Xian1,and Rui Wang2 1Chengdu University of Technology, Chengdu, China 2Changchun University of Science and Technology, Changchun, China
MCSEM traps in the exploration of formations containing the high-resistance oceanic crust Shuoning Zhang1,3 , Hui Yuan1,3 and Zhanxiang He*1,2,3 1Shenzhen Key Laboratory of Deep Offshore Oil and Gas Exploration Technology, China 2Guangdong Provincial Key Laboratory of Geophysical High-resolution Imaging Technology, China 3Department of Earth and Space Sciences, Southern University of Science and Technology, China	**An analytical study on the effect of inverse prediction based on two types of convolutional neural networks NestU-Net and ResU-Net++** Jiawei Wang1, Guangdong Zhao*1, Jinsong Zhang 1,Minghao Xian1, Yu Zhang1 1Key Laboratory of Earth Exploration and Information Technology of Ministry of Education, Chengdu University of Technology, Chengdu 610059, China
TEM data denoising based on cluster analysis and locally weighted linear regression Cheng Wang1, Jianhui Li1,2*, Xushan Lu3 1Institute of Geophysics and Geomatics, China University of Geosciences, China 2State Key Laboratory of Geological Processes and Mineral Resources, China University of Geosciences, China 3Department of Earth Sciences, Memorial University of Newfoundland, Canada	**Inverse Wavefield Transform for the Magnetic Components of the Loop-source Transient Electromagnetic Data** Kerui Fan1,2, Lei Xu,1,3, Shangqu Sun2 and Peng He2 1 Key Laboratory of Engineering Geophysical Prospecting and Detection of Chinese Geophysical Society, Wuhan, China 2 College of Civil Engineering and Architecture, Shandong University of Science and Technology, Qingdao, China 3 Changjiang Geophysical Exploration & Testing Co., Ltd., Wuhan China.
Research on Frequency Domain Imaginary Component Measurement System Qi Jingtong1, Zhang Zhiyong*1,2 and Qin Jinsheng1 1School of Geophysics and Measurement-control Technology, East China University of Technology, China 2State Key Laboratory of Nuclear Resources and Environment, China	**Marine controlled-source electromagnetic attitude noise correction based on a Multimodal-Transformer model** Yujian Hou1,2,3,Qiyun Jiang4, Yan Qiao4,Zhanxiang He*2,3 1Key Laboratory of Metallogenic Prediction of Nonferrous Metals and Geological Environment Monitoring (Central South University), Ministry of Education 2Guangdong Provincial Key Laboratory of Geophysical High-resolution Imaging Technology, China 3Department of Earth and Space Sciences, Southern University of Science and Technology, China 4Institute of Urban Underground Space and Energy Studies, Chinese University of Hong Kong(Shenzhen), China

14:50 - 15:00	**Break**

15:00 - 16:00	**Oral Session K: Data Acquistion** *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	**Oral Session L: Machine Learning - Gravity** *Chairs: TBD* *Location: Conference Hall-2, 2nd Floor of Convention Center, SUSTech*
15:00 - 15:20	**Distributed controlled-source electromagnetic methods based on high-order pseudorandom signals** Yang Yang*1, Heng Zhang1, Changyu Zhou1,2 and Yuzhen Zhu1 1Geotechnical and structural engineering research center, Shandong University, China 2School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, Shenzhen, China	**The Intelligent Inversion with Model Reparameterization of Borehole and Surface Gravity Data** Xinyi Zhou1#, Zhaoxi Chen1*, Shuai Wang1, He Zhang1 1 School of Geophysics and Information Technology, China University of Geosciences, Beijing
15:20 - 15:40	**Ergodic geophysical survey design and its application in exploration decision making** Mengli Zhang* and Yaoguo Li, Center for Gravity, Electrical, and Magnetic Studies (CGEM), Department of Geophysics, Colorado School of Mines	**Quantifying uncertainty in 3D geophysical inverse problems: Advancing from deterministic to Bayesian and deep generative models** Jiajia Sun*1 and Xiaolong Wei1,2 1Department of Earth and Atmospheric Sciences, University of Houston, United States 2Departmen of Earth and Planetary Sciences, Stanford University, United States
15:40 - 16:00	**Development of Overhauser magnetometers for UAV's magnetic survey applications** Vladimir Ignatev*1, Dmitrii Dumler2, Arsenii Obysov2, Dmitry Lalomov2 and Anna Gouirand3 1GEODEVICE Inc, Canada 2GEODEVICE KAZAKHSTAN LLC, Kazakhstan 3GEODEVICE SAS, France	**Forward Constrained 3D Gravity Density Inversion Based on EdU-Net with Well Constraints** Siyuan Dong1, Shuai Zhou*1, Jian Jiao1, Zhaofa Zeng1, Pengyu Lu1, Ping Yu1, Yue Wei1, Jianwei Zhao1 1 College of Geoexploration Science and Technology, Jilin University, Changchun, China

16:00 - 16:10	**Afternoon Tea** *Location: TBD*

16:10 - 17:10	**Oral Session M: Instrumentation** *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	**Oral Session N: Machine Learning - Electromagnetics** *Chairs: TBD* *Location: Conference Hall-2, 2nd Floor of Convention Center, SUSTech*

Time		
16:10 - 16:30	**Progress in the study and application of Cold Atom Interference Gravimeter** Zong-yu Zhang1, Zhong-kun Qiao1,2*, Peng Yuan1, Jia-jun Zhang1, Li-yan Zhu1, Qiang Lin1,2 1Zhejiang Provincial Key Laboratory of Quantum Precision Measurement, College of Science,Zhejiang University of Technology 2Institute for Frontiers and Interdisciplinary Sciences，Zhejiang University of Technology	**Denoising of semi-airborne transient electromagnetic data based on Transformer network** Minghao Xian1, Zhengwei Xu*1, Ming Guo1, Juntao Lu1, Yu Zhang1, and Rui Wang2 1Chengdu University of Technology, China 2Changchun University of Science and Technology, China
16:30 - 16:50	**New Advances in High-Precision Strapdown Gravimetry** Cao Juliang1, Cai Shaokun*1,6, ZhouXihua2, Zhang Kaidong3, Wang Chao4, Yuan Yuan5, Yu Ruihang1, and Xiong zhiming1 1College of Intelligence Science and Technology, National University of Defense Technology, China 2China Aero Geophysical Survey & Remote Sensing Center, China 3Hunan INS Technology Co. Ltd., China 4Aerospace rainbow UAV Co., Ltd., China 5College of Surveying and Mapping Science and Technology, Sun Yat-sen University, China 6State Key Laboratory of Geodesy and Geodynamics, Chinese Academy of Sciences, China	**High resolution MT data inversion with the seismic texture constraint** Hongyu Zhou1, Rui Guo1, Zuzhi Hu2, Maokun Li1, Fan Yang1 and Shenheng Xu1 1Department of Electronic Engineering, Tsinghua University, China 2Bureau of Geophysical Prospecting (BGP) Inc., China National Petroleum Cooperation (CNPC), China
16:50 - 17:10	**Sparse magnetization vector inversion with magnitude and direction constraints in Cartesian coordinates** Yang Ou*1,2, Jie Zhang2, Dingyu Jia2, Yang Li2, Yi Yang2 1School of Geophysics and Information Technology, China University of Geosciences (Beijing), Beijing, China 2Institute of Geophysical and Geochemical Exploration, Chinese Academy of Geological Sciences, Hebei, China	Deep joint inversion of electromagnetic, seismic, and gravity data Rui Guo1,2, Hongyu Zhou1, Xiaolong Wei3, Zhichao Lin1, Maokun Li1, Yonina Eldar2, Fan Yang1, Shenheng Xu1, and Aria Abubakar2 1Department of Electronic Engineering, Tsinghua University, Beijing, China 2Department of Mathematics and Computer Science, Weizmann Institute of Science, Rehovot, Israel 3Department of Earth and Planetary Sciences, Stanford University, San Francisco, CA, USA 4SLB, Houston, TX, USA
18:00 - 20:00	**Dinner** *Location: TBD*	

	Wednesday, 22 May 2024	
08:30 - 09:40	**Plenary Session** *(Session Chairs: TBD)* *Location: Conference Hall, 2nd Floor of Convention Center, SUSTech*	
08:30 - 09:05	Invited Keynote: **Embedding high-resolution volcanic and geothermal investigations within the footprint of the continental scale US Magnetotelluric Array** by **Adam Schultz** from Oregon State University	
09:05 - 09:40	Invited Keynote: **Magnetic Resonance Sounding and Electromagnetic Exploration Technique Based on Air-ground Platform for Water-source Geological Structure** by **Tingting Lin** from Jilin University	
09:40 - 09:50	**Break**	
09:50 - 10:50	**Oral Session O: Integration and Joint Inversion: Methdology Development** *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	**Oral Session Q: Environmental and Engineering** *Chairs: TBD* *Location: Conference Hall-2, 2nd Floor of Convention Center, SUSTech*
09:50 - 10:10	**Falsification of magmatic intrusion models using outcrops, drillholes, and geophysics** Xiaolong Wei1, Zhen Yin1, and Jef Caers1 1Department of Earth and Planetary Sciences, Stanford University, United States	**Study on the relationship between herbaceous slope resistivity and soil physical and mechanical properties in loess areas** Yingxiao Zhao1 and Changyi LIU1* 1Department of Geological Engineering, Qinghai University, Xining.
10:10 - 10:30	**Research and Application of Joint Inversion of 2D Audio Magnetotelluric and Magnetic Data** Liu Jiacheng1 and Zhang Zhiyong*1,2 1 School of Geophysics and Measurement-control Technology, East China University of Technology, China 2 State Key Laboratory of Nuclear Resources and Environment, China	**Detailed exploration of complex caves - Take Zunyi City Geology and Mining Huixinyuan Community as an example** Xueyi Zhou1, Junli Nie2 1College of Resources and Environmental Engineering, Guizhou University, Guiyang, Guizhou Province (550025) 2Key Laboratory of Karst Environment and Geological Hazards, Ministry of Land and Resources, Guizhou University, Guiyang City, Guizhou Province (550025)
10:30 - 10:50	**Multi-physics Imaging of Salt Structures at Nordkapp Basin, Barents Sea** Xiaolei Tu*, Oregon State University; Changmin Fu, Institute of Geology and Geophysics, CAS	**Research on Geomagnetically Induced Currents of North China Power Grid Based on Different Calculation Methods of Geoelectric Field** Xuejian Zhang1 and Nian Yu*1 1Department of Electrical Engineering, Chongqing University, Chongqing, China

10:50 - 11:00	**Break**	
11:00 - 12:00	**Oral Session R: Integration and Joint Inversion: Deep Structures** *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	**Oral Session S: CCS** *Chairs: TBD* Location: Conference Hall-2, 2nd Floor of Convention Center, SUSTech
11:00 - 11:20	**Study on the Deep Structure of the Northeastern Margin of the Qinghai-Tibet Plateau Based on Gravity, Magnetic, and Electrical Methods** Yang Haining1, Peng Wuxu2, Liu Huilong2 and Fan Junjie2 1Department of Exploration and Geophysics, China University of Geosciences 2Geophysical Survey Center of China Geological Survey	**Advancing Reservoir Monitoring: A Multiphysics Framework for Reservoir Monitoring Using Surface-to-Borehole Electromagnetic and Borehole Vector Gravity** Taqi Alyousuf, Daniele Colombo, and Ersan Turkoglu Geophysics Technology, EXPEC Advanced Research Center, Saudi Aramco
11:20 - 11:40	**A novel method for simultaneous joint inversion of surface-wave and gravity data** Xiang Wang1,2٭, Lianghui Guo1,2,Yang Chen1,2 1Key Laboratory of Intraplate Volcanoes and Earthquakes (China University of Geosciences, Beijing), Ministry of Education, Beijing 100083, China. 2School of Geophysics and Information Technology, China University of Geosciences (Beijing), Beijing, China	**Application prospects of Geophysical Exploration in the field of CCUS** Chen Juan*1, Song Xilin1, Liu Xuejun1, Yu Gang1,2, Shi Yanling1, 1BGP, CNPC, Zhuozhou, Hebei, China 2Optical Science and Technology (Chengdu) Ltd., Chengdu, Sichuan, China
11:40 - 12:00	**Three-dimensional joint inversion of magnetotelluric and surface wave data based on the variation of information** Yuqi Huang1, Haijiang Zhang1,Ji Gao1, Max Moorkamp2 and Yan Zhan3 1University of Science andTechnology of China, Hefei, China 2Ludwig-Maximilians University of Munich, Munich, Germany 3State Key Laboratory of Earthquake Dynamics, Institute of Geology, China Earthquake Administration, Beijing 100029, China	**Sensitivity of marine controlled source electromagnetic monitoring of plume transport in offshore CO2 storage** Qiu Ning*1,2,3, Pan Chunwu1,3, Liu Bin1,3, Li Pengchun1,2, Sun Zhen1,2 1Key Laboratory of Ocean and Marginal Sea Geology, South China Sea Institute of Oceanology, Innovation Academy of South China Sea Ecology and Environmental Engineering, Sanya Institute of Ocean Eco-Environmental Engineering, Chinese Academy of Sciences, Guangzhou/ Sanya 511458/570206, China; 2Southern Marine Science and Engineering Guangdong Laboratory (Guangzhou), Guangzhou 511458, China; 3University of Chinese Academy of Sciences, Beijing 100049, China
12:00 - 13:30	**Lunch** *Location: TBD*	
13:30 - 14:50	**Poster Session P5: Advances in Methodologies and Applications** *Chairs: TBD* Location: Conference Hall-3, 2nd Floor of Convention Center, SUSTech	**Poster Session P6: Multi-physics and Integration** *Chairs: TBD* Location: Conference Hall-3, 2nd Floor of Convention Center, SUSTech
	A method of gravity and magnetic data correlation without the influence of remanence and its application to recognition of magmatic rocks, Guangxi Jiahao Wang1, Xinting Liang1, Qing Liang*1,2 and Fuqiang Yang3 1School of Geophysics and Geomatics, China University of Geosciences (Wuhan), China 2Hubei Subsurface Multi-scale Imaging Key Laboratory, China University of Geosciences (Wuhan), China 3Geophysical Survey Institute of Guangxi Zhuang Autonomous Region, China	**Application of combined modeling and inversion of well-electric-seismic in complex structural belt of Sichuan Basin** Pan Li1 ,Chen Kang 1 ,Liang Han 1 ,Liu Jinhui2 ,Tan Zhangkun2 ,He Qinglin1,Tang Cong1,Wang Zeyu1,Di Guidong1 1Exploration and Development Research Institute ,PetroChina Southwest Oil&Gas field Company 2Sichuan Resources Group Geophysical Exploration Institute
	The estimation of ice sheet thickness based on 3D density interface inversion considering terrain and undulating observation surface Yandong Liu*1, Xiaohong Meng1, Jun Wang1 1School of Geophysics and Information Technology, China University of Geosciences (Beijing), Beijing, China	**Multi-parameter inversion using radio-magnetotelluric and direct current resistivity data** Yi Ke1, Zhang Zhiyong*1,2, Li Man1, Zhou Feng1 1 School of Geophysics and Measurement-control Technology, East China University of Technology, China 2 State Key Laboratory of Nuclear Resources and Environment, China
	The estimation of ice sheet thickness based on 3D density interface inversion considering terrain and undulating observation surface Yandong Liu*1, Xiaohong Meng1, Jun Wang1 1School of Geophysics and Information Technology, China University of Geosciences (Beijing), Beijing, China	**Gravity-magnetic joint inversion based on multiple depth weighting** Zhe Qu1, Zhengwei Xu1*, Bin Liu1 1Chengdu University of Technology, Chengdu, China
	A quadrotor UAV-based survey of magnetic anomaly tensor field of an iron ship Yangyi Sui*1,2, Hongsong Miao1,2, Ruiqi Cheng1,2, Anran Huang1,2, Yuqi Pang1,2, Qiang Fu1,2 and Hongyi Li1,2 1College of Instrumentation and Electrical Engineering, Jilin University, China 2Key Laboratory of Geo-exploration Instruments, Ministry of Education of China, China	**Application of aero geophysical and remote sensing techniques in geological survey of West Kunlun** Ming Wang*1, Haiqing Wang*1, Yanyan Wei*1 and Xiaoxing Lin*1 1China Aero Geophysical Survey and Remote Sensing Center for Natural Resources, Beijing, PRC
	Research on 2D controlled-source EM forward modeling using a global weakly meshfree method based on unstructured background grids Hualiang Zhao, Huaifeng Sun*, Shangbin Liu, Xushan Lu 1 Geotechnical and Structural Engineering Research Center, Shandong University, Jinan, Shandong, China	**Spread spectrum induced polarization survey for Qiushuwan porphyry copper-molybdenum deposit in south of Henan Province, China** Jawad Ahmad 1 2, Chen Rujun 1 2*, Ijaz Ahmed1 2, Shah Fahad1 2, Osama Abdul Rahim1 2, Farid Ullah1 2, Shahid Ali Shah1 2, Li Rui 1 2 1School of Geosciences and Info-Physics, Central South University, China 2AIoT Innovation and Entrepreneurship Education Center for Geology and Geophysics, Central South University, China.

	Large-scale 3D geophysical electromagnetic field simulation using survey decomposition and blockchain-coordinated massive parallel computing Yuchao Zhang* and Dikun Yang Department of Earth and Space Sciences, Southern University of Science and Technology	**Application of heavy magneto-electric method to mineral searching in the covered area of the northeastern edge of the Qinghai-Tibetan Plateau** Zhang Zhejie1,Peng Wuxu2,Liu Huilong2 and Fan Junjie2 1Departamento of Exploration and Geophysics,China University of Geosciences 2Geophysical Survery Center of China Geological Survey
	Stability analyses of non-uniform time -step and grid -size schemes for Finite -Difference Time-Domain method Qi zhao* Huaifeng Sun, Shangbin Liu, and Xushan Liu Geotechnical engineering research center, Shandong University, China Laboratory of Earth Electromagnetic Exploration, Shandong University, China	**Analysis of earthquake ionospheric anomalies based on seismic electromagnetic satellite data** Wu Bateer*1,2 and Ye Wentao1 1School of Geosciences, Institute of Disaster Prevention, China 2Hebei Key Laboratory of Earthquake Dynamics, Sanhe, China
	Three-Dimensional Inversion of Magnetotelluric Data Using Gauss-Newton Method Minghong Liu1,2 and Huaifeng sun*1, 2 1Geotechnical and Structural Engineering Research Center, Shandong University, Jinan 250061, China 2Laboratory of Earth Electromagnetic Exploration, Shandong University, Jinan 250061, China	**Application of marine magnetometry and ultra-high resolution marine seismic combined data for geological mapping** Vladimir Ignatev1, Dmitry Korshunov2, Arsenii Obysov2 and Dmitry Lalomov*2 1GEODEVICE Inc, Canada 2GEODEVICE KAZAKHSTAN LLC, Kazakhstan
	Impact and Remediation of Misalignment between Shipborne Triaxial Geomagnetic Measurements and Attitudinal Changes Xinzhi Fan-1*1,2 and Jinyao Gao-21,2,3 1Second Institute Of Oceanography, Ministry of Natural Resources,Hangzhou 310012, China 2Key Laboratory of Submarine Geosciences, Ministry of Natural Resources,Hangzhou 310012, China 3Key Laboratory of Marine Environmental Survey Technology and Application, Ministry of Natural Resources, Guangzhou 510300, China	**Two-dimensional joint inversion of DC resistivity and seismic refraction traveltime data constrained by Gaussian mixture clustering** WANG LiHui1 and PENG Miao1,2 * 1School of Geophysics and Information Technology, China University of Geosciences, Beijing 100083, China 2State Key Laboratory of Geological Processes and Mineral Resources, China University of Geosciences, Beijing 100083, China
	Fast Forward Modeling for Stepped Frequency Ground Penetrating Radar Signal Wuji Wang1, Nian Yu1,2 and Tianyang Li*2 1School of Electrical Engineering, Chongqing University, China 2State Key Laboratory of Coal Mine Disaster Dynamics and Control, Chongqing University, China	**Joint inversion of seismic and gravity data using Gramian constraints and Gauss-Newton optimization** Hao Zhu1, Xiangyun Hu1,2, Song Jin1, Hongzhu Cai*1,2 1Institute of Geophysics and Geomatics, China University of Geoscience, Wuhan 2State Key Laboratory of Geological Processes and Mineral Resources, China University of Geoscience, Wuhan
	Fast 3-D Magnetotelluric Modelling using Yee's Scheme and Extrapolation Multigrid Solver Jinxuan Wang*1 and Kejia Pan1 1School of Statistics and Mathematics, Central South University, Changsha, 410083 China	**Material state and tectonic dynamics in the vicinity of the Dinggye region, central part of the Tethys- Himalaya terrane: insights from the Magnetotelluric method** Yue Shenga; *Sheng Jina,b; *Zengqian Houc; Letian Zhanga,b; Wenbo Weia,b; Gaofeng Yea,b; Hao Donga,b; Chengliang Xie a,b a.School of Geophysics and Information Technology, China University of Geosciences, Beijing 100083, China b.Key Laboratory of Geo-detection of Ministry of Education, Beijing 100083, China c.Key Lab of Continental Tectonics and Dynamics, Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, P.R. China
	Research on the received signal correction technique of ground-airborne frequency-domain electromagnetic Yang Su and Changsheng Liu* College of Instrumentation and Electrical Engineering, Jilin University, China	
14:50 - 15:00	**Break**	
15:00 - 16:00	**Oral Session T: Integration and Joint Inversion: Oil & Gas Applications** *Chairs: TBD* Location: Conference Hall-1, 2nd Floor of Convention Center, SUSTech	
15:00 - 15:20	**The application of gravity and electromagnetic method in ultra-deep oil and gas exploration** Sun Weibin*1, Wang Tengyu2, Bian Baoli3, Wang Yaohui1, Cao Ligang1and Xu Shichao1 1BGP CNPC 2The Research Institute of Petroleum Exploration and Development of Tarim Oilfield Company, China 3The Research Institute of Petroleum Exploration and Development of Xin Jiang Oilfield Company, China	
15:20 - 15:40	**Multiphysics applications across scales: integration of gravity, magnetic and electromagnetic data for solving exploration challenges** Lucy MacGregor, Ahmad Shahir B. Saleh, Joanna H.W. Kho & Arvin B. Karpiah Exploration Geoscience Solutions, PETRONAS Carigali, Kuala Lumpur, Malaysia	
15:40 - 16:00	**Seismic-EM projection (SEMP) attribute: application in hydrocarbon prospecting in deepwater offshore northwest Borneo** Ahmad Shahir bin Saleh*1 and Max Meju2 1Exploration, Geoscience Solutions, PETRONAS Carigali, Kuala Lumpur, Malaysia 2GeoMaxo Ltd, Lancaster LA1 5BL, UK.	
18:00 - 20:00	**Dinner** *Location: TBD*	