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## GEM 2024 Shenzhen

**International Workshop on *G*ravity, *E*lectrical & *M*agnetic**

##### Methods and Their Applications

##### Shenzhen, China

##### May 19 – 22, 2024

##### Co-Organized by

The Society of Exploration Geophysicists

The Chinese Geophysical Society

##### Supported by

Southern University of Science and Technology

###### First Announcement

**General Co-Chairs**

Xiong Li, Xcalibur Multiphysics

Yaoguo Li, Colorado School of Mines

Jiajia Sun, University of Houston

Chairs of THE Local Organizing Committee

Chair: Zhanxiang He, Southern University of Science and Technology

Co-Chair: Dikun Yang, Southern University of Science and Technology

**CHAIRs of THE TECHNICAL COMMITTEE**

Chair: Mengli Zhang, Colorado School of Mines

Co-Chair: Zhengyong Ren, Central South University

Technical Committee

Taqi Alyousuf, Saudi Aramco

Marco Antonio Braga, Universidade Federal do Rio de Janeiro

Benchi Chen, Sinopec

Tianyou Chen, Micro-g LaCoste

Jörg Ebbing, Kiel University

Meixia Geng, Technology Innovation Institute (Abu Dhabi)

Xiangyun Hu, China University of Geosciences (Wuhan)

Alan Yusen Ley-Cooper, Geoscience Australia

Shuling Li, China University of Geosciences (Beijing)

Tingting Lin, Jilin University

Xuejun Liu, BGP

Qingtian Lv, Chinese Academy of Geological Sciences

Lucy MacGregor, Petronas

Changchun Yin, Jilin University

KEYNOTE SPEAKERS (CURRENTLY CONFIRMED)

John Bradford, Colorado School of Mines

Marco Antonio Braga, Universidade Federal do Rio de Janeiro

Xiangyun Hu, China University of Geosciences (Wuhan)

Tingting Lin, Jilin University

Keke Zhang, Macau University of Science and Technology

WORKSHOP GoalS

Since GEM 2019 Chengdu, the world has undergone unprecedented and fundamental changes. Among them, energy transition and the development of sustainable communities and infrastructure have emerged as the key priorities for the geophysical community. GEM 2024 Shenzhen aims to provide a timely international platform that unites geophysicists and other professionals in the broad Earth science community, facilitating discussions on the crucial role that geophysics can and should play in the energy transition and the mitigation of climate change consequences.

Geoscientists have been taking proactive measures to explore various energy transition strategies, including carbon capture and storage (CCS), geothermal energy, geological hydrogen and more. Meanwhile, the projected rise in the adoption of solar and wind energy, as well as electrical vehicles, is expected to dramatically increase the demand for critical minerals. In addition, due to climate change, securing a reliable supply of clean water and power becomes paramount for both human well-being and the economy both locally and globally.

GEM 2024 Shenzhen will be a platform for industry professionals, government agencies, and academics to showcase the latest technological and methodological advancements in potential field and electromagnetic geophysics, and their applications to addressing the grand challenges posed by energy transition and climate change. Additionally, it will foster discussions on the challenges and opportunities that lie ahead for geophysicists.

At GEM 2024 Shenzhen, we believe that the collaboration and knowledge sharing among geophysicists and geoscientists will enable us to think beyond the conventional boundaries and pave the way for innovative solutions to the complex energy and environmental challenges we face. Join us at GEM 2024 Shenzhen where we will inspire, learn, and shape the future of applied geophysics together!

WORKSHOP TOPICS

• CO2 Storage Monitoring

CO2 injection monitoring

CO2 storage monitoring

Time-lapse geophysics application

• Hydrogen Exploration & Storage

Hydrogen storage

Geologic hydrogen exploration

• Geothermal Energy

Geothermal exploration and production

Geothermal monitoring

• Mineral exploration

Reconnaissance and regional structure mapping

Lithology and geology differentiation and characterization

Exploration under cover and at depth

Deposit delineation and characterization

• Groundwater Resources

Groundwater mapping and exploration

Aquifer system characterization and management

Aquifer storage and recovery

• Environmental & Engineering

Geotechnical applications

Archaeology studies

Geohazard imaging and monitoring

• Oil & Gas Exploration and Production

Hydrocarbon prospect generation

Structural studies

Exploration in difficult areas

Time-lapse reservoir monitoring

Unconventional oil and gas

• Petrophysics

Constraining geophysical inversions

Integration of geophysical models

Geology differentiation

• Efficient Geophysical Data Acquisition

Efficient Geophysical equipment

Efficient Geophysical survey design

• Data analytics, Machine Learning, and Artificial Intelligence

Integrating multiple sources of information

Automating and accelerating data processing and modeling

Pattern recognition in geophysical data and models

Solving inverse problems

Characterizing uncertainty

• Drone & Robotic Geophysics

Drone & robotic magnetics

Drone & robotic electromagnetics

Various applications of drone & robotic geophysics

• Methodologies and Technologies

Gravity, electrical, electromagnetic, magnetic, and magnetic resonance methods

Instrumentation (land, marine, airborne, and borehole) and field data acquisition

Processing, modeling, inversion, and interpretation algorithms

Integrated interpretation and joint inversion of multiple data sets

Abstract Submission

The workshop will consist of oral, poster, and invited presentations. Abstracts in English and in Microsoft Word should be three or four pages in length (including the list of references) and written in the format of the SEG expanded abstract for the annual meeting. An abstract template in Microsoft Word and an example abstract in PDF can be downloaded here. An online abstract submission system will be open here on 1 October 2023. The deadline for abstract submissions will be 7 January 2024.

SPONSORSHIP

There will be opportunities for companies and organizations to sponsor the workshop.

EXHIBITION

The Workshop will provide spaces for showcasing your businesses and services.

CONTACT INFORMATION

For more information and inquiries, please contact organizers at: GEM2024@seg.org.

**ABOUT SHENZHEN**

Shenzhen, a megacity in southern China, has witnessed a boom in the Chinese economy in the past 40 years. It is now one of the global high technology centers hosting the headquarters of many top IT companies. Being one of the pivotal cities in the Guangdong-Hong Kong- Macau Great Bay Area, Shenzhen is well connected to other places in China, East Asia, and the world since Shenzhen, Guangzhou, and Hong Kong airports are all within a 2-hour driving distance. Shenzhen is characterized by its subtropical climate by the sea, and May is the best season to visit when millions of Lychee trees start to fruit. In Shenzhen, travelers can enjoy a stylish modern city with diverse cultures, authentic Cantonese cuisine, scenic ocean and mountain views, and the spirit of “reform and open” that brought China to what it is today.