Special Issue

Electromagnetic Inversion for Deep Ore Explorations

Message from the Guest Editors

Geophysical electromagnetic (EM) methods have emerged as a powerful tool for subsurface exploration due to their sensitivity to variations in electrical conductivity, which is often associated with mineralization. However, the interpretation of EM data in deep and geologically complex environments remains a significant challenge, requiring robust and innovative inversion techniques to extract meaningful subsurface information. This special issue focuses on the latest advancements in electromagnetic inversion methods tailored for deep ore exploration. The aim is to bring together cutting-edge research and practical applications that address the challenges of imaging deep and heterogeneous geological structures. Topics of interest include, but are not limited to, novel inversion algorithms, improvements in computational efficiency, joint inversion of EM data with other geophysical methods, and case studies demonstrating the application of EM inversion in real-world ore exploration scenarios. Contributions exploring the integration of machine learning and artificial intelligence in EM inversion are also encouraged.

Guest Editors

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Minerals welcomes submissions that report basic and applied research in mineralogy. Research areas of traditional interest are mineral deposits, mining, mineral processing and environmental mineralogy. The journal footprint also includes novel uses of elemental and isotopic analyses of minerals for petrology, geochronology and thermochronology, thermobarometry, ore genesis and sedimentary provenance. Contributions are encouraged in emerging research areas such as applications of quantitative mineralogy to the oil and gas, manufacturing, forensic science, climate change, geohazard and health sectors.

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