

Getting the most out of Hydrogeophysics: Examples from Electrical Resistivity Tomography (ERT)



Dr. Michael TSO
(曹澤厚博士)

UK Centre for Ecology and Hydrology

The past 25 years has seen the use of geophysical methods for hydrological investigations developed rapidly from a reconnaissance tool to an integral part of many analysis, so much so that the sub-field hydrogeophysics emerged. Geophysics provides a suite of tools that transforms the way we observe the subsurface environment. The ever-increasing need for better subsurface observation techniques and improved process understanding drive these developments, which lead to a growing need to extract more information, especially quantitative characterization. This talk will discuss a framework to enhance the value and information content of geophysical data for subsurface characterization, focusing on electrical resistance tomography (ERT), one of the most commonly used near-surface geophysical tools. Several examples within the framework will be discussed, including a method for improved characterization of data errors, an uncertainty assessment for ERT-estimated soil moisture content, a data assimilation framework to link geophysical data to a hydrological model and infer leak parameters, and a new method for ERT inversion. These examples showcase the potential ways to make geophysical data more informative for hydrogeological investigations. The lessons learnt contribute to the continuing effort to maximize the value of earth and environmental science data.

3 June 2021



3:30 p.m.



Zoom Link: [Here](#)



Meeting ID: 992 4969 9833

Passcode: 983837



Enquires: 3943 9624 essc@cuhk.edu.hk