Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

AGE04-14 会場:101A 時間:5 月 20 日 14:30-14:45

Fusion of Active and Passive Hydrologic and Geophysical Tomographic Surveys: The Future of Subsurface Characterization

Fusion of Active and Passive Hydrologic and Geophysical Tomographic Surveys: The Future of Subsurface Characterization

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This presentation explains the need for high-resolution imaging techniques to characterize the subsurface, and then discusses difficulties of traditional characterization approaches, followed by a presentation of recent advances in hydrologic/geophysical characterization of the subsurface: information fusion based on active tomographic survey concepts for field scale problems. It finally concludes with examples and propositions regarding how to collect and analyze data intelligently by exploiting natural recurrent events as energy sources for basin-scale passive tomographic surveys. The development of information fusion technologies that integrate traditional point measurements and active/passive hydrogeophysical tomographic surveys, as well as advances in sensor, computing, and information technologies may ultimately advance our capability of characterizing groundwater basins to achieve resolution far beyond the feat of current science and technology.

キーワード: tomographic survey, information fusion, hydrogeophysical, geophysical
Keywords: tomographic survey, information fusion, hydrogeophysical, geophysical