Subsurface imaging to estimate water storage conditions using ERI
- Observation of small paired forest and grassland catchments –

Keishi Kudo[1], Kota Morikawa[2], Jun Shimada[2] and Nobuhiro Tanaka[3]
1 Kokusai Kogyou Co., Ltd, Japan
2 Graduate School of Science and Technology, Kumamoto University, Japan
3 Life and Environment Department of Kumamoto Prefectural Government, Japan
E-mail: keishi_kudo@kk-grp.jp

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Abstract

Catchment water storage is expected to be affected by many factors such as climate, geological conditions, and surface land use (including vegetation cover). Electrical resistivity imaging (ERI) was applied in two small adjacent forest and grassland catchments to elucidate subsurface water storage conditions and behaviors deeper than the root zone, which is mostly affected by surface vegetation. Results obtained using ERI in forest and the grassland catchments demonstrated the characteristics of horizontally averaged subsurface depth profile information along the representative ERI survey line. Results also show that the amount of stored water in the forest was about 45% greater than that of the grassland, mainly because of differences in surface vegetation. Results of this study show that the proposed ER survey method can provide effective information for assessing water storage characteristics underground.