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Estimation of Specific Yield of Aquifer in MinZhu Basin Based on combination of Gravity and ERT Observations

Kuan-Chih Tseng, Yu-Shen Hsiao, Chih-Ching Hsu, and Yu-sin Jheng
Department of Soil and Water Conservation, National Chung Hsing University, Taichung Taiwan

We combine gravity, electrical resistivity tomography (ERT) data to estimate the specific yield of Aquifer in Minzhu Basin, and assess the feasibility of underground reservoir development in this area. Several joint surveying missions combing gravimetry and ERT have been implemented in Minzhu Basin from September 2016 to September 2017. For gravity mission, we used an absolute gravimeter FG-5 to collect gravity values which are subsequently corrected by effects of soil moisture, Earth tide, polar motion, and atmospheric pressure; For ERT mission, we laid couples of surveying profiles on northern side of Zhuoshui River to collect the ERT observations. Gravity and ERT observations are used for determining the changes of groundwater mass and level, respectively. An additional pumping test in the study area was also carried out in June 2017 for assisting in supporting research. The objective of this study is to estimate the groundwater resources in Minzhu Basin according to results of the specific yield of aquifer. We expect the results can provide important references for constructing an underground reservoir in this area.

Keywords: Gravity, ERT, Specific yield of aquifer