

Estimating reservoir sedimentation by gravimetry technique: A case study in Tseng-Wen reservoir

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The study proposes a new method for estimating variation in reservoir sediment by gravimetry technique. The study area is located in Tseng-wen reservoir, which is the largest reservoir in Taiwan. Several field gravity surveys with FG-5 gravimeter have been carried out at three gravity stations surrounding the reservoir (shown in figure) during 2014~2016. The observed gravity values caused by the effects of ocean tide, polar motion, atmospheric pressure, and underground water will be well predicted and removed. The variation of Tseng-wen reservoir sedimentation derived from gravimetry technique will be compared to those derived from bathymetric Lidar. The purpose of the research is to develop a more efficient and economic method to measure the sediment variations in reservoirs, and subsequently bring contributions to soil and water conservation.

Keywords: gravimetry, reservoir sediment, FG-5 gravimeter

