

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

\*Yi Chang<sup>1</sup>, YuShen Hsiao<sup>1</sup>, Wei Chang<sup>1</sup>, YaoChun Kuo<sup>1</sup>, JungChieh Chang<sup>1</sup>

1.National Chung Hsing University

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

