

## 摘 要

河道測量可包含水深測量、河床底質採樣分析、洪汛期觀測分析、枯水期觀測分析、航空攝影測量、衛星測地觀測等。精確的量測方法將利於後續水利工程的規劃、設計及執行。本研發新移動式量測機組，係與河道斷面量測裝置相關，其可以簡單方便之量測方法，而藉以機動快速地取得量測數值，且其量測數值亦可達到精確度，此外，其量測數值之比對應用方式，亦可便捷地提供各種安全性評估及診斷之用。

本移動式機組之特色為：(1)可機動快速地取得量測數值，供繪製河相沖淤斷面及歷線圖，(2)藉與水工結構物(橋樑、墩柱、沉箱等)之原設計高程比對，可作為該結構物之風險管理參考，(3)研究使用設備不但具有堅實耐用、抗雜訊干擾、節省人力等之優點，(4)可機動地適應於任何天候、地點作業，更適用於颱風期間污濁河床沖刷之河相量測裝置。

更詳而言之，特別係指一種具有機動性、可快速取得數據之移動式量測機組及其量測方法，研發成果應用於具有沖刷潛勢之河川河道斷面量測，初期以烏溪流域中下游河段為試區，實施沖刷災害發生前、後之河相斷面淘刷與回淤量測試驗調查，俾提供日後各橋基保護、河川治理及相關工程技術、管理實務之預測與應變中，進一步研究之參考依據。

關鍵詞：水利工程、移動式機組、預測與應變。

## Abstract

Proper evaluation of characteristics of rivers and creeks is an essential first step for planning hydraulic engineering structures.

This study developed a new mobile system for measuring scouring changes of creeks with high erosion potential. This system can be used to do on site determination of channel profile scouring and deposifior before, during and after disastrous storm peak flow events.

This method has advantage features:

- (a) Mobile system for fast acquirement of relevant data.
- (b) Solid and sturdy instrumentation.
- (c) Minimum requirement of manpower and heights with nearly structures.
- (d) Fast provision of data for disaster danger forecasting and rapid response.

Using the lower and middle sections of Wu creek in central Taiwan as study sites, the proposed test methods, procedures and instrumentations were demonstrated in the field. Preliminary test results at the study sites showed good results and potential for wider application. However, more field tests at more sites are important.

KeyWords : hydraulic enginnering, mobile system, forecasting and response.