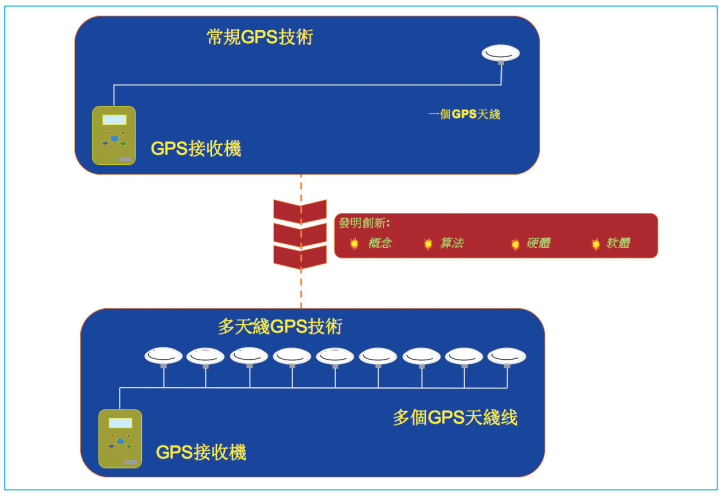
THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

全球衛星定位(多天線)結構監測系統
Multi-Antenna GPS Structure Monitoring System

測檢地表沉降，結構性變形的高效技術
Monitoring and Detection of Structural Deformation

一機多天綫全球衛星定位系统(GPS)是為監測及預警山泥傾瀉，以及大型結構物（如高樓、水壩及橋樑）變形而發展的新的GPS技術。

該技術採用特殊的數據處理方法、軟體和硬體，可以使用一台GPS接收機設備帶動多個GPS天綫（如20個），從而能夠使用一台GPS接收機設備準確地監測多個點位的移動，大幅度地降低了GPS硬體成本，因而提高了GPS技術應用於山泥傾瀉及結構物變形監測的效能。



一機多天線技術
Key Concept

專利申請編號及國家: 002-19891.6 (中國)

特色與優點

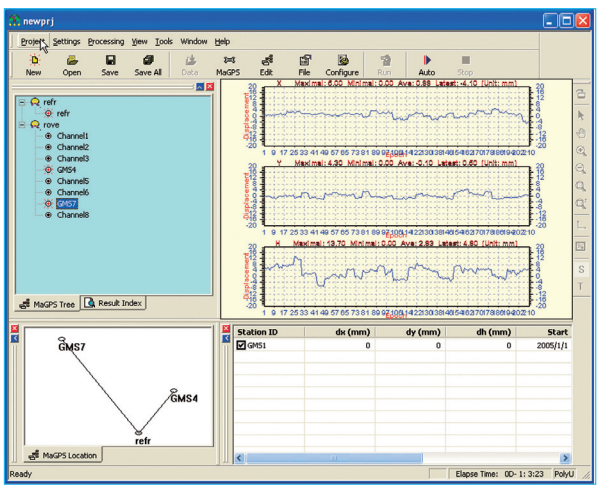
- 系統成本低廉
- 全自動化運行
- 實時監測
- 高精準度

應　用

- 監測及預警山泥傾瀉
- 監測河堤及水壩變形
- 監測樓宇、橋樑及其它結構物穩定性
- 測量地表沉降

獎　項

2009布魯塞爾世界創新科技博覽會銀獎(2009年11月)



系統軟體與硬體
System Hardware and Software

工程應用
Application Examples

Patent No: 002-19891.6 (PRC)

Special Features and Advantages

- Very low cost
- Fully automated system
- Real time measurements
- Highly accurate

Applications

- Land slide monitoring and warning
- Study of dam deformation
- Study of stability of buildings, bridges and other structures
- Measurement of ground subsidence

Award

Silver Award, Brussels Innova 2009 (Nov 2009)

The multi-antenna GPS technology is developed for applications such as landslide monitoring and warning, measurement of deformations of structures such as dams and bridges.

The technology uses special GPS data management and processing algorithms, hardware and software to enable one GPS receiver to work with a large number of antennas (e.g., 20) so that the deformations of the points equipped with the antennas can be monitored. The capacity of GPS for monitoring deformations is therefore greatly extended.

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