Development of Debris Flow Monitoring System in Taiwan.

台灣土石流觀測系統發展現況

Hsiao-Yuan YIN
Soil & Water Conservation Bureau, Taiwan
sammya@mail.swcb.gov.tw

This paper introduces the thirteen automated debris-flow monitoring stations in Taiwan established by Soil and Water Conservation Bureau（SWCB）. The automated debris-flow monitoring system consists of the sensors, the front instrument cabin, the transmission module and the back web-based real-time display system. The sensors include rain gauges, CCD cameras, wire sensors, geophones and ultrasonic airborne level meters. The operation of the system is in “normal mode” with lower sampling rate in usual times. When the rainfall exceeds specific threshold in field, the whole system will automatically switch to “event mode” with a higher sampling rate. In event mode, all the collected data will be transmitted to SWCB Debris Flow Emergency Response Center promptly as information for decision-making. Besides, specialists who are on duty in SWCB can change the operation mode and operate some on-the-spot instruments through remote control module. The system is a “half-opened” one designed to expand for the further necessities in the future in order to integrate the precious resources. The purpose of setting up these stations is to collect local field data and to help us understand the physical mechanism of debris flows. Besides, these data can be utilized as references for designing debris flow disaster prevention constructions as well as academic research.