



Taiwan Mountain Seismic Network

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A digital dense strong motion network (Taiwan Strong Motion Instrumentation Program, TSMIP) was installed and maintained by the Central Weather Bureau (CWB) since 1991. The TSMIP includes more than 600 stations in 1992 and increases to more than 800 stations in 2012. However, most of the stations are placed on plain area, only limited stations are located at mountain area. This area, with peaks up to 4000 m, covers an area of 2/3 of the entire Taiwan Island which was the region that lack of seismic data. In an attempt to obtain the mountain seismic motions generated by earthquakes, the Institute of Earth Sciences (IES) of Academia Sinica installed an accelerographic network in the mountain area and this began operating in 1993. Eleven stations of this network recorded the 1999 Chi-Chi earthquake (ML=7.3). However, there are still too few to attain a high probability of recording strong motion information in this area for earthquakes.

In 2006, the IES cooperated with the CWB to plan a mountain (MTN) seismic network in Taiwan. The IES is responsible for the site selection, housing, instrument installation, data collection and maintaining. In accordance with the plans indicated of this project, sixteen seismic stations have been installed in 2006 and increase to eighty stations in 2012. The stations provide a minimum coverage over the entire northern mountain area of Taiwan.

During the last few years, many major events occurred inland of Taiwan were recorded by the MTN seismic network. They are 2009 Nanto earthquake (M=6.0), 2010 Jiasian earthquake (M=6.4), 2012 Wutai earthquake (M=6.4), 2013 Hualien earthquake (M=5.7) and 2013 two Nanto earthquakes with M=6.2 and 6.5. These events are the most significant to occur in the MTN area. This report is to describe the installation, maintenance and data collection of the seismic network. The accelerograms from recently two Nanto earthquakes of 2013 were shown here. The seismic data from MTN and TSMIP will be integrated to study the path effects and site effects from different seismogenic zones to the metropolitan area and provide significant information to reduce seismic hazard.