海底地震儀地震訊號分析
Signals embedded within MicrOBS Array, experiment at offshore SW Taiwan

張翠玉 (國立台灣海洋大學)

Chang Tsui-Yu (IAG, National Taiwan Ocean Univ.)

tychang@mail.ntou.edu.tw

tel: (02) 24622192 ext 6506

Seismological studies on earthquake activity and lithospheric deformation are always been thinking highly in active plate boundary. However, seismographic instrumentation is largely limited by island territory, and it used to have a scarcity for seismicity detection for marine area. Recently, thanks to the successful development of Ocean Bottom Seismometer (abbr. OBS) facility, we can gain a near-field seismogram for the marine earthquake. In the late 2005, an experiment of OBS deployment were achieved at the SW offshore Taiwan to detect the tectonic earthquakes in situ. In this mission, we took advantage of 7 MicrOBS, developed by the Institut Français de Recherche pour l'Exploitation de la Mer, to collect near-field earthquake signal off SW Taiwan. This experiment was carried out in 5 days, from October 7 to October 12, 2005. After calibrating the MicrOBS rawdata with the MicrOBS recording components, the seismograms of MicrOBS can be used for earthquake location and the further processes of seismogenic study.

A preliminary examination of our MicrOBS records shows that lots of small-to-moderate earthquakes' onsets can be distinguished from the seismograms. The identified *P-S* travel time intervals are used to locate the local events at the survey area. Furthermore, the first-motion method and the near-field waveform simulation are adopted for determining the focal mechanism solution in this area.

The Pakistan earthquake (2005/10/08) and a significant seismicity swarm (around the location of 120^oE, 21.4^oN) occurred and recorded with our MicrOBS array during the survey time. With this study of the local events, we hope to derive a clear picture about the background earthquakes in the SW Taiwan. We aimed at clarifying the possible plates' interior deformation and recognizing the different geological units for the studied area.