

## **6. Final Remarks**

**Won Soh, Yusuf S. Djajadihardja, Safri Burhanuddin**

Geological and geophysical data acquisitions, preliminary on board data set processing and interpretation of NT05-2 Natsushima cruise have been done during the survey. On site selections of geophysical methodologies including multi beam, single channel seismic, deployments of Ocean Bottom Seismographs (OBS), and direct observations utilized ROV Hyper Dolphin were based on previous available information such as Sumenta II expedition (1992), Baruna Jaya Expedition Aceh 2005, International Tsunami Survey Team 2005, and Harvard CMT Solutions (1977 – 2005), SCOTT data (2005), the rupture zone model presented by Hirata et al., 2005 (inpress).

The bathymetry survey utilized multi beam echo sounder covered a area of approximately 4000 km<sup>2</sup> and it results in alternations of narrow ridges and troughs of 5 to 10 km wide in parallel to the trench in the southwest part of survey area closed to the trench; while to the northeast the ridge with valleys were bounded by a forearc basin (the Aceh Basin). Single channel seismic profiles of an approximately 950 km line distance recorded seafloor and subsurface structures of trench, accretionary wedge and forearc basin as parts of the Sunda Arc. 17 short-term OBS array system recorded aftershocks following the December 26<sup>th</sup> 9.3 M earthquake preliminarily resulted in concentration of earthquakes of 30-40 km in depth. 2 long term OBS's are still going to monitor the aftershock. Direct observations applied ROV Hyper Dolphin found out many seafloor features including ruptures, landsliding surfaces, blocky mass wasting, debris of mixed grain sizes and jointed seafloor.

Preliminary results especially from ROV direct observations suggests that sea bottom was shattered in the last Sumatran earthquake as revealed from features mentioned. The deformation at seafloor surface occurred immediately, possibly exceeding gravity acceleration during shaking of the catastrophic earthquake. Strain prior to the great earthquake was concentrated on a specific place above a blind fault that might trigger the event. Monitoring of aftershocks by OBS obtained high resolution data.

This cruise report will soon published on the web site and will be progressively updated. Another publication that will soon published in the International journal or news contained short message and fantastic pictures of our results.