

## Postseismic Displacements following the Sumatra-Andaman Earthquake Detected by Continuous GPS Observations.

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We have been conducting continuous GPS observations in SE Asia for the purpose of several geophysical studies including crustal deformations, ionosphere and troposphere. Analyzing these data with data from IGS and other continuous networks, we have obtained postseismic displacements following the 2004 Sumatra-Andaman earthquake. We have finished the analysis for several sites up to July 29, 2006, and will report these results.

We used continuous GPS data from 6 sites operated by Chulalongkorn Univ. and Kyoto Univ. or JAMSTEC, 2 sites by Shizuoka Univ. and JAMSTEC, 3 sites by NICT in Thailand and Myanmar, 1 site by STE-Lab, Nagoya Univ. and IGS and other continuous networks in East Asia and countries surrounding the Indian Ocean. Bernese 5.0 was used for the processing of 30 sec. sampling data to obtain static solutions.

An about 25cm SW-ward motion was detected at Phuket, southern Thailand, since right after the mainshock, which is as large as the coseismic displacement there. Bangkok also experienced about 9cm SW-ward displacement, which is somewhat larger than its coseismic displacement. In 2006, displacements at sites in Thailand were rotated clockwise and became more westward. There is a possibility that heavy rain in northern Thailand in summer of 2005 may have affected coordinate solutions. It is noteworthy that Yangong in Myanmar and Padang in Sumatra do not show any significant postseismic displacements, although they are much closer than sites in Indochina peninsula such as Chiangmai. It is also interesting that transient displacement can be recognized at Padang after the March 28, 2005, Nias earthquake, though its coseismic displacement was not detected.

We adopted the Yabuki and Matsu'ura's(1992) method for the inversion of observed postseismic displacements to reveal temporal and spatial afterslip distribution on the plate interface. Afterslip beneath the Andaman Islands seems to have continued till 2006, while that in the Nias region quickly decayed. Total moment released by afterslip is estimated to  $1.58 \times 10^{22}$  Nm (Mw8.73).