

## Analysis of post-seismic movements associated with Sumatra earthquake

Yuko Ebihara[1]; Mikio Satomura[2]; # Koya SHIMAMURA[3]; Ryoya Ikuta[4]; Seiichi Shimada[5]; Manabu Hashimoto[6]; Michio Hashizume[7]; Peiming Wu[8]; Teruyuki Kato[9]

[1] Earthscience, Shizuoka Univ.; [2] Fac. of Science, Shizuoka Univ.; [3] Geosciences, Shizuoka Univ.; [4] Faculty. Sci. Shizuoka Univ.; [5] NIED; [6] DPRI, Kyoto Univ.; [7] Chulalongkorn Univ.; [8] IORGC, JAMSTEC; [9] Earthq. Res. Inst., Univ. Tokyo

We have processed GPS data to obtain the post-seismic displacements by using GAMIT ver. 10.34 software. We obtained the displacement at PHKT (Phuket), BNKK (Bangkok), CHMI (Chiang Mai), KOGM (near Chiang Mai), YNGN (Yangon), BAKO (Jawa), COCO (Cocos), DARW (Darwin), LHAS (Lhasa), NYUS (Singapore) and PIMO (near Manila). We also use other station data at BAHR, CHAT, DGAR, GUAM, HRAO, IRKT, KERG, KIT3, KOKB, MKEA, PERT, PETP, TIDB, URUM, USUD and WUHN for the reference stations. We used the GPS data until October 2008 and ITRF2005 coordinate for this processing.

In order to obtain the post-seismic movements, we need the plate motion model referring to ITRF2005. We also processed the GPS data from July 2001 to December 2004 before Sumatera-Andaman earthquake, and obtained the motion at each station by USING GLOBK software. We thought that this motion is not influenced by the earthquake. This motion has some difference comparing the Sunda block motion obtained by Bock et al.(2004), that is 8 mm/y at PHKT and 15 mm/y at SAMP.

We can see great post-seismic movements at PHKT and SAMP which are bigger than co-seismic ones. We have tried to fit the movements by using logarithmic function which is thought to be reflected by after-seismic slip and exponential one which is by visco-elastic relaxation. The movements between Sumatra-Andaman earthquake and Nias one are better fitting by exponential function at BNKK and PHKT, but they are better by logarithmic function at CHMI, KOBM and SAMP after Nias earthquake. They show the different tendency between NS component and EW one at PHKT and BNKK, and we cannot say which function is better to fit the movements.