

## Semi-Global Crustal Movements Associated with Sumatra Earthquake

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

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

There are already many studies on the crustal movements associated with Sumatra earthquake. We obtained semi-global crustal movements with it from GPS data.

The data used are PHKT (Phuket), BNKK (Bangkok), CHMI (Chiang Mai), KOGM (KogMa, near Chiang Mai), LAMB (Lambir, Borneo), KKUT (Khon Kaen), YNGN (Yangon), BAKO (near Jakarta), COCO (Cocos Island), DARW (Darwin), DGAR (Diego Garcia Is.), GUAM (Guam), HYDE (Hyderabad, India), LHAS(Lhasa), NTUS (Singapore), PERT (Perth), PIMO (Manila), USUD (Usuda, Japan), and WUHN (Wuhan) to obtain the movements. We also used the GPS data at BHR (Manama, Bahrain), BILI (Bilibino, Russia), CHAT (Waitangi, New Zealand), IRKT (Irkutsk, Russia), KERG (Kerguelen Island), KOKB (Kokee Park, Hawaii), MKEA (Mauna Kea, Hawaii), YAKT (Yakutsk, Russia) as fiducial points.

Extraordinary co-seismic movements were obtained at PHKT (westward 25cm and southward 11cm), BNKK, CHMI and KKUT which are located in north from the epicenter associated with Sumatra earthquake, but no notable movements were obtained at COCO and BAKO which are in south from the epicenter. We can see some co-seismic movement at WHUN and LHAS which are located at more than 4000km far from the epicenter.

Small co-seismic movements were obtained at PHKT, NTUS and DGAR with Nias earthquakes.

The movements in the duration between Sumatra and Nias earthquakes differ from those after Nias earthquake at BNKK and KKUT in sense. We processed the data referring to ITRF 2005 and removed plate motion by using REVEL-2000. The movement difference may be introduced by the difference of reference frame.