

Horizontal deformation vectors along the Nankai Trough derived from sea-bottom crustal deformation measurements

Keiichi Tadokoro[1]; Tsuyoshi Watanabe[1]; Daisuke Muto[2]; Shingo Sugimoto[2]; Takashi OKUDA[3]; Akinori Kimoto[2]; Ryoya Ikuta[4]; Keizo Sayanagi[5]; Masahiro Kuno[6]

[1] RCSVDM, Nagoya Univ.; [2] Grad. Sch. Env. Studies, Nagoya Univ.; [3] RCSVDM Center, Nagoya Univ.; [4] ERI, Univ. Tokyo / JSPS; [5] IORD, Tokai Univ; [6] Fisheries Div., Mie Pref. Sci. and Tech. Center

We have developed a system for observing seafloor crustal deformation using kinematic GPS observation technique and acoustic ranging. We started long-term monitoring of seafloor crustal deformation at two stations in the Kumano basin (KMN and KMS stations) and also two stations in the Suruga bay (SNW and SNE stations), along the Nankai Trough, in 2004.

We have performed the repeated observations 10, 15, 5, and 11 times at KMN, KMS, SNW, and SNE stations, respectively, from 2004 to 2007. The long time repeatability of this system is 2-3 cm in the both horizontal components at all the stations. We derived horizontal deformation vectors with relative to the Amurian plate from the results of the repeated observations. The components of the vectors are: (-68±20, 15±35) mm/yr at KMN, (-58±32, 19±34) mm/yr at KMS, (-53±31, 1±22) mm/yr at SNE. These vectors are consistent with that from the GEONET observation, taking the errors into account. We plan to install a new station in the Enshu-nada region, south to Shizuoka Prefecture, Japan, which is the next step of routine observation in the whole source area of the anticipated Tokai-Nankai earthquakes.