

Urgent joint observation of the 2005 west off Fukuoka earthquake (M7.0)

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On March 20, 2005, a large earthquake with $M=7.0$ (JMA) occurred at west off-Fukuoka City. Many houses had damaged in Genkai-jima island located near the earthquake fault. We carried out the urgent joint observation by several universities in Japan in order to investigate the aftershock activity and post-seismic deformation. In this observation, we installed six online telemetered and 17 offline recorded seismic stations around the aftershock area of the earthquake just after the occurrence of the main shock. The acquisition and processing of seismic data from online stations are performed at the Institute of Seismology and Volcanology, Kyushu University, and the provisional results are open in HP (<http://www.sevo.kyushu-u.ac.jp/2005-GENKAI/>). In addition to the on-land seismic observation, we installed 11 ocean bottom seismometers (OBSs) just above the aftershock region and its vicinity in order to obtain the accurate hypocenter distribution, because the aftershock area was mainly located under the sea. The OBS observation was carried out from March 27 to April 13. Furthermore we conducted temporary GPS observation in the urgent joint observation. We installed six GPS receivers around the aftershock region in order to reveal the post-seismic deformation.

The feature of the seismic activity of the 2005 west off Fukuoka earthquake is as follows: The mainshock and aftershocks are distributed roughly in line in the NW-SE direction, and the NW tip of the hypocenter region has a slightly different strike; nearly NNW-SSE direction. The horizontal extent of the aftershock area is about 25km, and the depth range is from about 2km to 18km. The fault plane inferred from aftershock distribution is almost vertical. The upper boundary of the focal depth distribution becomes deeper in the NW direction, and shallower than 5km near Genkai-jima island. Another feature of the hypocenter distribution is the existence of aftershocks which branch off from the main strike of the distribution. It is also noticed that some earthquake clusters are distributed in the SE extension of the aftershock area.