Deep seismic profiling off-line recorder, Miura Peninsula, Japan.

Tomonori Kawamura[1]; Naoshi Hirata[2]; Hiroshi Sato[2]; Masazumi Onishi[3]; Katsuya Noda[4]

[1] ERI; [2] ERI, Univ. Tokyo; [3] JGI; [4] GEOSYS,Inc.

The deep seismic profiling around Metropolitan Tokyo (Kanto area) began from 2002 under the project named (Regional Characterization of the Crust in Metropolitan Areas for Prediction of Strong Ground Motion). The deep seismic profiling was performed along the Tokyo Bay (Tokyo Bay 2003) from July to August in 2003, to obtain an image of the source fault of the Kanto earthquake of 1923 (M7.9), and deeper extension of inland active faults in Miura Peninsula. In the Tokyo Bay 2003, seismic reflection data were acquired along a 71-km-long seismic line from the Miura Peninsula to Tokyo Bay, using digital-telemetry cable system, including ocean bottom cables. However, this seismic line at Miura Peninsula passes through the densely populated area and due to the cultural noise the low S/N ratio was expected. Keeping away from the noise along the cable-type receiver line, 51 off-line recorders with a 4.5 Hz and 3-compornent geophone were deployed at carefully selected, quiet receiver points. During 90 days continuous recording, seismic signals produced by four vibroseis trucks at 195 locations and air-guns (1500 cu. inch) at 4280 locations were recorded including ca. 150 of earthquakes. Judging from the preliminary receiver gathers, two later phases (A and B) are recognized. The later phase A, located at TWT (Two-way travel time) 4 to 5.5 sec., is interpreted as a reflection from the top of the Philippine Sea Plate. The later phase B at TWT 7 to 8 sec. corresponds to the deeper reflection under the Philippine Sea Plate, respectively.