

HDS024-P04

Room: Convention Hall

Time: May 25 17:15-18:45

Offshore active fault survey "Unzen fault group"(4) Result of piston-core sampling

Tomoo Echigo^{1*}, Naoko Kitada¹, Naoto Inoue¹, Hiroko ITO¹, Reiji Tanaka¹, Akira Hayashida², Yuichi Sugiyama³, Izumi Sakamoto⁴, Tanio Ito⁵, Ken Niimi⁶, Toshihiko Ichihara⁶

¹Geo-Research Institute, ²Doshisha University, ³Active Fault and Earthquake Researc,AIST, ⁴Tokai University, ⁵Chiba University, ⁶Fukken Co.,LTD.

The Unzen Fault Group, traversing the Shimabara Peninsula in the E-W direction, extends into Shimabara Bay to the east and Tachibana Bay to the west. The northern and southeastern zones of the fault group, containing the major Chijiwa and Futsu faults, respectively, lack reliable information on fault-trace distribution, termination, activity and faulting history. Under the circumstances, we have carried out a paleoseismological piston coring for both the northern and southeastern fault zones of the Unzen Fault Group, as a part of the 2009 offshore active fault survey project funded by MEXT. The purpose of the investigation is to clarify the faulting history and activity (average slip rate) of each fault zone.

We decided the following nine sites for piston coring, based on the results of deep seismic reflection profiling, high-resolution multichannel and ultra-high-resolution single-channel sonic surveys. The detailed data on respective coring sites are as follows:

[site name, a Latitude, a Longitude, core length, an extraction day, extraction time, depth of water]

SN-1, N 32 deg. 47.8643 min., E 130 deg. 29.3380 min., 7.24 m, 2009.09.27,9:25,25.2 m
SN-2, N 32 deg. 47.7602 min., E 130 deg. 29.2977 min., 9.15 m, 2009.09.27,11:56,27.6 m
SS-1, N 32 deg. 42.7920 min., E 130 deg. 29.7168 min., 8.10 m, 2009.09.27,14:38,30.7 m
SS-2, N 32 deg. 42.4632 min., E 130 deg. 29.8035 min., 4.35 m, 2009.09.27,16:08,30.8 m
TN-1, N 32 deg. 47.0029 min., E 130 deg. 6.3437 min.,11.09 m, 2009.09.29,08:20,32.0 m
TN-2, N 32 deg. 46.9028 min., E 130 deg. 6.3993 min.,10.52 m, 2009.09.29,09:23,33.5 m
TS-1, N 32 deg. 44.2606 min., E 130 deg. 3.6974 min.,10.51 m, 2009.09.29,11:50,37.3 m
TS-2, N 32 deg. 44.2089 min., E 130 deg. 3.7237 min., 9.65 m, 2009.09.29,14:31,35.6 m
TS-3, N 32 deg. 44.1359 min., E 130 deg. 3.6912 min.,10.34 m, 2009.09.29,13:29,38.2 m

As a result of the investigation, in the northern part (SN) and southern part (SS) of Shimabara Bay, and northern part of Tachibana Bay (TN, TS), we got the core on both sides of the faults. 3 cores, 7 to 9 m long, were obtained in Shimabara Bay, and 5 cores, 10 to 11 m long, were extracted in Tachibana Bay.

We are now carrying out various kinds of analyses and measurements, including facies, grain size, bulk density, magnetic susceptibility, tephra and 14C dating. We intend to clarify faulting history and slip per event of each target fault.

Acknowledgement

We are thankful to the local government officers involved in Nagasaki Prefecture and Kumamoto Prefecture, and the staffs of a fishermen's cooperative association.

Keywords: Offshore active fault survey, Unzen fault group, Shimabara Bay, Tachibana Bay, Piston-core