

SSS032-10

Room:302

Time:May 24 16:45-17:00

Fault distribution and activity in the offshore extension of the eastern margin fault zone of the Fukui plain

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We carried out active fault investigation by the request from Ministry of Education, Culture, Sports, Science and Technology in the offshore extension of the eastern margin fault zone of the Fukui Plain. We want to clarify the five following matters about the active fault based on this results. (1)Fault continuity of the land and the sea. (2) The length of the active fault. (3) The division of the segment. (4) Activity characteristics.

The eastern margin fault zone of the Fukui Plain consists of the main part fault and the west part fault including sea area. Based on an existing fault evaluation, main part length is 45km, and the west part length is 33 km. In this area, the Fukui earthquake occurred in 1948. Kaga-shi offshore fault and Mikuni-cho offshore fault have been described in existing material concerning sea area fault. The length of the fault is 7km and 5km respectively based on the map.

In this investigation, 12 lines of high-resolution multichannel seismic reflection survey were carried out to recognize the detailed structure of a shallow stratum. In addition, we carried out standard type of multichannel seismic reflection survey for deep geological structure. The high accuracy topography survey was executed in the coast region where the rock was exposed. Furthermore, the sampling with the vibrocoring to get information of the sedimentation age was carried out.

The reflection profiles of the active faults were extremely clear. The fault displacement of sea floor and the deformation of Holocene epoch layer were recognized in the offshore extension of the fault zone though the displacement of sea floor was not identified in the coast area where rock was exposed. And another faults were recognized to the southwest side of the main part fault. It is interpreted that northern terminal of main part fault has diverged.

Because the displacement of sea floor or the deformation of the layer of Holocene epoch were confirmed, it is thought that they are active faults on which it acted at the latter term of Quaternary Era in both the main part and the west part.

Keywords: Fukui earthquake, Fukui plain, sea area, active fault, seismic reflection survey, lateral fault