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Offshore active fault survey ”Kurehayama Fault Zone” (2) -Results of the faulting history by arrayed borehole survey

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The Kurehayama Fault Zone, traversing the Toyama Plain in the NE-SW direction, from Kurehayama Hills to Toyama Bay. The north part of Kurehayama Fault Zone, respectively, lack reliable information on fault-trace distribution, activity and faulting history. Under the circumstances, we decided the following two sites (Higashi Toyama, Higatae) for paleoseismological arrayed borehole survey, based on the results of analysis data from using aerial laser survey. This project is as a part of the 2010 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.

The result is as follow.
<Higashi Toyama site>
This site is located that isolated from the main flow of the Jintsu River and Joganji River. We have carried out borehole survey at 6 points. Each depth are BHT-1:10m, BHT-1.5:6m, BHT-2:10m, BHT-3:10m, BHT-4:12m, BHT-5:12m (from west to east). We confirmed three kinds of units. The stratigraphy of each points are almost same. We interpreted to pass by the active fault between BHT-2 and BHT-3. All units are thought to have deformed by the active fault, however, we could not confirm the sediments which deposited after the latest event.
<Higatae site>
This site has been located in the backmarsh near Toyama Bay. We have carried out borehole survey at 3 points. Each depth are BHG-2:7m,BHG-1:7m,BHG-3:6m (from west to east).
In cross section, it was confirmed that the basal gravel layer is tilted to the east.
From the BHG-2 and BHG-1, have accumulated thick deposits of back marsh sediments. However, we could not confirm the sediments which deposited after the latest event.

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

Keywords: Offshore active fault survey, Kurehayama Fault Zone, Aerial laser survey, Arrayed borehole survey, Activity