Integrated Research for Quaternary Sedimentary Basin in Southwest Japan from the viewpoint of Deep drilling data and Seismic interpretation

*Keiji Takemura[1]

1.Beppu Geothermal Researh Laboratory, Institute for Geothermal Sciences, Graduate School of Science, Kyoto University

Research on Quaternary Sedimentary basins in southwest Japan have been developed with accordance of research on paleogeography and tectonic development. Most of distribution area of Quaternary sedimentary basins such as Osaka Bay and Lake Biwa etc. is covered by aquatic or alluvial area, and it is difficult to make clear the stratigraphy and structure of sequence by using the usual geological technique at outcrops. Most adequate methods are drilling and geophysical prospecting such as seismic reflection surveys. I introduce the Quaternary basin formation history in Southwest Japan using the drilling data and geophysical data from Osaka sedimentary basin, Lake Biwa basin, Kyoto basin and Beppu bay basin during 40 years.Osaka sedimentary basin was constructed by the combination of activity of right lateral strike slip movement of Median Tectonic Line and Arima-Takatsuki Tectonic Line, and reverse faults of North-South direction, and has precise subsurface structure in the basin revealed by the distribution of Marine clays deposited under transgression of about 100,000 years cycles. Lake Biwa basin had been influenced by reversed fault activity located at western part of basin and northward migration activity. Kyoto basin was constructed by the activity of two reverse fault activity. Beppu Bay had been influenced by the transcurrent movement of Median Tectonic Line and normal fault activity at the termination of strong strike slip movement.In conclusion, time series of movement of Philippine Sea Plate subduction and activity of Median Tectonic Line at forarc region have played an important role for formation of Quaternary basins in southwest Japan.

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