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### **Structural Evolution and Its Influence on Sedimentation of the Domi (Fukue) Basin, Offshore Korea**

The Domi basin (130 km long, 70 km wide) is a sub-basin located at the northern end of the Jeju (East China Sea Shelf) basin. The basin is divided into three depressions having a half-graben geometry in Korean waters. Each depression is filled with 4 ~ 5 km thick Tertiary clastic sediments and some volcanics. About 5000 km<sup>2</sup>-D-seismic data set and two well data were used for this study.

During the Paleogene, rifting occurred on the extensional regime and half-grabens were developed that provided the sites for thick succession (~2 km) of clastic sediments forming alluvial fan or lacustrine fan delta. In the Early to Mid Miocene, as extension was taken over by transtension, the rate of basin extension reduced and thermal subsidence followed. On the other hand, movement on the basin forming faults continued at the northern depression. Sediments were deposited extensively and lacustrine environments gradually turned into fluvial. After the Mid Miocene, extension ceased but subsidence continued. In this phase, sedimentation is not related to the preceding evolution of the basin but related to the eastward tilting of the Eurasian plate. Sediments are composed of channel sandstones, overbank mudstones and coals deposited in floodplains. The end of Late Miocene is characterized by strong inversion caused widespread uplift and erosion. In the Plio-Pleistocene to Recent, the basin lies under the stable shelf settings.

Until the Mid Miocene, sedimentation in the Domi basin was mainly controlled by local tectonics, and the basin filling has continued with regional subsidence since Late Miocene.