Distribution and evolution process of E-W strike fault system in Shimane Peninsula, western Japan

*Taiki Imamura[1], Hideki Mukoyoshi[1]

1. Department of Geoscience Interdisciplinary Graduate School of Science and Engineering, Shimane University

The Shinji fault developed in the Shimane Peninsula is an E-W strike fault system which extends from Etomo to Miho Bay in Shimane Prefecture. Nakata and Goto (1998) named in part of the Shinji Fault as the Kashima Fault which is an active fault. In the recent research reported that the Kashima Fault extend about 25km with right-lateral offsets (Chugoku Electric Power Co. Ltd., 2016), and the average horizontal slip rate is about 0.4-0.6m / 1000 year, and the latest fault' s activity is after the Nara Period (710-794) and before the Kamakura Period (1185-1333) (Earthquake Research Promotion, 2016).
Although clear lineament and fault topography are observed in western side of Kashima Fault (Minamikobu area), poorly observed in eastern side. Previous surface peels survey, trench survey and boring survey are conducted at the eastern side of the Kashima Fault and it is pointed out that the fault activity is not recognized in the Quaternary bed. However, we can confirm the weak lineament in eastern side of the Kashima fault. In addition, many fault branched from the Shinji Fault is reported in the Shimane Peninsula (Kano and Yoshida, 1996). There are various opinions about the location of the eastern end of the Kashima Fault system, and not well understood about the detailed distribution and evolution processes of these faults.
The purpose of this study is to understand the fault distribution and clarify their features in eastern part of the Shimane Peninsula by field survey and detailed description of the fault rocks.
In this study area, early Miocene to middle Miocene Koura Formation and Josoji Formation are widely distributed in the eastern part of the Shimane Peninsula. The survey was mainly conducted on the area where the weak lineament was confirmed. In this study area, a large scale fault outcrop corresponding to the Shinji fault was observed. The fault divides the rhyolitic sandstone of the Koura Formation and the rhyolitic lava of the Josoji Formation. Some small faults developed around the Shinji fault. The strike and dip of fault is N80°E74°N. A fault gouge of thickness about 5cm was recognized in the fault. Rhyoliteic dyke along the fault was also observed.
In this study, we report the distribution and the structure of fault rocks.

Keywords: Shinji Fault, Kashima Fault

