

Identification of active fault outcrops of the Saigatao tectonic line in central-southern part of Yamaguchi Prefecture, Southwest Japan

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The Saigatao tectonic line in central-southern to-northern part of Yamaguchi Prefecture, Southwest Japan, has been known as a geological boundary fault, being approximately 40km in length. Characteristics and activity of the tectonic line have not yet been clarified. Its left-lateral offset of a few hundred meters is confirmed on the geological map (Nishimura et al., 2012). In this study, the characteristics and the activity of the southwestern part of the tectonic line are investigated by geological and topographical investigations to clarify the characteristics and activity of the tectonic line.

Tectonic reliefs can be interpreted with a topographic map, red relief image map and aerial photograph. NE-SW-trending lineaments are found on and around the tectonic line. The lineaments can be classified into Ranks C and D. Rank C lineament has a good continuity. On the other hand, Rank D lineament is not so good. These lineaments are characterized by right-lateral displacement of ridges. Total length of the lineament is 40 km.

Fault outcrops showing movement ages of the Saigatao tectonic line are found at two localities 1 and 2.

Loc. 1 (Nagaono outcrop): The boundary fault occurs between mudstone of the Ota formation and pelitic schist of the Suo metamorphic rock. No displacement is recognized in Lower river terrace deposits overlaying the fault.

Loc. 2 (Mana outcrop): A fault displaces Middle river terrace deposits. It is thought that the formational age of the terrace deposits is 70,000-130,000 y.BP.

The western Chugoku District suffered to the N-S compression since the Cretaceous, whereas the stress field switched into the E-W compression in the late Pliocene. The tectonic inversion caused the movement sense of the Saigatao tectonic line to change from left-lateral to right-lateral sense. Characteristics of the Nagaono and Mana outcrops indicates that the Saigatao tectonic line might move from 70,000-130,000 y.B.P. to the formational age of the Lower terrace deposit. If the E-W compression continues, the Saigatao tectonic line may move with the right-lateral sense.

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