

# Tectonic relief and Erosion Topography in Suruga Bay ; Geographical feature decipherment using slope amount

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It is well known that the geological features and geographical features of Suruga Bay are very different between the west and east of the trough axis. The western part of the bay is composed of a sedimentary rock geological zone, and the erosion and sedimentary topography affected by river inflow are conspicuous. And, the eastern part of the bay is composed of igneous geological zone, and its tectonic relief formed by volcanic activity and plate motion is conspicuous. In this study, landform interpretation of Suruga Bay was carried out using a gradient map and a gradient quantity - hillshading three-dimensional map (Hereinafter referred to as S-S map), and formation factors were examined.

In the landform interpretation using the gradient map and S-S map, tilt conversion line (gradient variation) like "MOYA" which was not clear in multiple places was confirmed. Incidentally, the definition of tilt conversion line (gradient variation) like "MOYA" is not particularly clear among the tilt conversion lines and is a blurred line. Representative regions and characteristics are as follows.

- ① submarine fan in the inner part of the bay : the tilt conversion line (gradient variation) like "MOYA" extending east-west
- ② The west slope of the North Senoumi-bank : the tilt conversion line (gradient variation) like "MOYA"
- ③ Izu-side slope : 4 knick lines (the tilt conversion line) extending north-south (Average water depth: -50 m, -204 m, -426 m, -689 m)

It is well known that the inner part of the bay, where the gradient variation like "MOYA" is observed, is a sedimentation site of the Fuji River, a class A river. The submarine slides formed by the Ansei earthquake has been confirmed on the west slope of the North Senoumi-bank where the similar variation is observed. In this region, the existence of creep has been clarified by the past investigation and research in the northwest slope, and this is considered to be a pioneer phenomenon of submarine slides (Nemoto, 1991). The common feature of these areas is that they are the sites of sediment transport. Therefore, it is considered that tilt conversion line like "MOYA" shows not only past and present mass transfer but also large-scale mass transfer (ex. submarine slides) which may occur in future.

It was possible to confirm the correspondence of the four knick lines (the tilt conversion line) existing in the Izu side slope with the ridge state landform in the inner part of the bay and the western part of the bay, and the water depth zone of the beginning and the end of the valley shape. These are considered to have been formed after the Izu Peninsula was formed (About 0.6 Ma).

It is inferred that the knick lines at the upper part of the slope is caused by the current sea level eroded by waves, or by past glacio eustatic sea level changes (Ulm ice age), indicating the current continental shelf edge. However, there are many contradictions to explain that the two knick lines in the lower part of the slope are caused by glacial sea level change or crustal movement, and it is difficult to clarify the formation factors at this stage.

Though the formation factor is uncertain, four knick lines on the Izu side slope of Suruga Bay are characteristic landforms observed only in the eastern part of the bay, and it is highly possible that they show past reference planes. For the elucidation of the formation factor, it is necessary to carry out collection and research of the sample which shows the age and comparison examination with the east side of Izu Peninsula (Sagami Bay).

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