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The shore platform development of basalt coast in Penghu Islands, Western Pacific

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Penghu islands, in the southern Taiwan Strait, is a remnant of a middle-late Miocene basaltic shield volcano. According to the previous studies, the extraordinarily wide shore platforms which could reach 3 to 5 km in width, developed along the northeastern coast and facing the open sea are strongly affected by the mesa-like initial landform. However, the development of narrow shore platforms are still unknown.
Based on 57 numbers of the survey of the shore platform, two major lithological composition of cliff base could be identified : interface and non-interface .The interface type is the contact of two rock formations or two basalt lava flows. The non-interface type of cliff base is composed of single resistant basalt formation. The interface type on the development of shore platform with the characteristic erosional features are wider and lower. However, the maximum width is about 70-90 meter. This width of shore platform seems reaching to the limit of development. Otherwise, the shore platform characteristic of non-interface type are narrower and lower. The width is often less than 10 meters, even without the development of shore platform and to be a plunging cliff. The higher shore platform have been formed above the high tide, inferred that the better efficacy of wetting and drying at high tide help to reduce the rock strength because of longer periods of exposure. Therefore, the variety of lithological composition is the primary control factor for the morphology of narrow shore platforms in Penghu Islands.
Keyword: shore platform; rock strengths; Penghu Islands