

## Normal faults observed in the Yonaguni-jima Island, Okinawa Prefecture, southwestern Japan

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Yonaguni-jima Island, Okinawa prefecture is an island located at the westernmost tip of Japan and belongs to the Southern part of the Ryukyu arc. In Yonaguni-jima Island, many normal faults cut the Miocene Yaeyama Group and the Quaternary Ryukyu Group to make the diamond island shape. The fault found at the Sanninudai located in the southeastern part of the Yonaguni-jima Island has all parts of the fault zone; fault gouge part, fault damage zone, wall rock zone. The fault found at the Sanninudai can be activated by the stress field similar to the one in the Okinawa Trough (active back arc basin). Our results indicate that the stress field in the Yonaguni-jima Island may be different from the one in island part of the South Ryukyu arc (e.g., Miyako-jima Island and Ishigaki-jima Island). The relationship between the width of the fault zone and the length of the fault and the relationship between the total displacement and the width of the fault core are similar to them of the typical characteristics of faults. Based on our results, we discuss the possibility that the fault found at the Sanninudai is a suitable site to understand the crustal dynamics (back arc opening) of subduction zone.

Keywords: Backarc basin, Normal fault, Okinawa Trough, Quaternary, Ryukyu Arc