

Slope failure observed off the eastern coast of Amami-Oshima Island, Central Ryukyu Islands

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Amami-Oshima Island is located along the Ryukyu Arc around 28.5N. Unlike the islands south Tokunoshima Island, no active across-arc faults are identified on and around this island. However, a large-scale (about 600km²) slope failure towards the Ryukyu (Nanseishoto) Trench is identified according to the topographic map based on the 500m-gridded topographic data by Japan Coast Guard. Precise topography and shallow sub-surface structure were observed by 3.5kHz sub-bottom profiler (SBP) through the two cruises by the Training Ship NAGASAKI-MARU owned by Nagasaki University in 2013 and 2014. Since this area is characterised by a potential methane hydrate reservoir, the relationship between the potential hydrate and the slope failure is also to be discussed. The slope failure was surveyed by total 6 SBP lines with the distance of 30 nm. Another slope failure is also identified along the northern slope of the deep sea valley NE offing of Amami-Oshima. This failure was surveyed by 4 SBP lines with the distance of 15 nm. The former site was characterised by rough topography consisting of many mounds with 200-300m in relative height and 2-4km in radius, whereas the latter site by smaller-scale blocks.

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