

High-resolution seismic reflection and SBP surveys on the Miyako-Sone platform, Ryukyu Island Arc, northwestern Pacific

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Shallow seismic profiling using AA300 Boomer system with 24 channels digital streamer cable and parametric SBP (sub bottom profiler) surveys were conducted on the Miyako-Sone platform, northeast of Miyako-jima, Ryukyu Islands, northwestern Pacific Ocean. Study area is reported that existence of the drowned reef probably formed during the final stage of the cooler postglacial period (Arai et al., 2016). High-resolution seismic profiles show a distinct, irregularly-undulated reflector which form the topographic high surround shallowest area, but have internally chaotic reflections. In the other hand, the parallel stratified sediment of less than 20 m (25 ms two-way travel time: calculate thickness using velocity is about 1500 m/s) covers the unconformable erosional surface which is characterized by distinct flat reflector 90-120 m (120-160 ms two-way travel time) in depth. Some small mounds, which are outlined by strong reflections are found above the distinct flat reflector. The feature of this reflector suggests that it represents an erosional surface formed during last glacial maximum. We conclude that the mound shape structures are submerged coral reefs, and reefal deposits, that developed following the last glacial maximum. Such high-resolution seismic profiles may be useful and effective indicator of the detailed paleoenvironment.

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