Distribution pattern of surface sediments around Okinoerabu-jima and Tokuno-shima Islands

*Atsuko Amano[1]

1. National institute of Advanced Industrial Science and Technology

The distribution pattern of surface sediment around Okinoerabu-jima and Tokuno-shima was compiled based on 155 surface sediment samples and sub-bottom profiler (SBP) records. Surface sediments around islands above water depth 600 m show gravel and very coarser sand and are characterized by high contents of calcium carbonate deposition mainly originated from coral, shells and briozoans. These results indicate that depositional environment in this area is affected by strong hydrodynamics effects. Spatial variation in grain size of surface sediments west off the Okinoerabu-jima and Tokuno-shima (eastern edge of Okinawa Trough) shows to become a finer toward increasing in water depth, and silt sediments including planktonic foraminifera are deposited in the Yoron and Okinoerabu basins below the water depth of 800 m. Stratified reflectors with the penetration depth of 60-80 m in the SBP profile are observed in these basins. These results indicate that hydrodynamics effects to sedimentary process decrease toward the increasing water depth and hemipelagic sediments are deposited in the basin. On the other hand, sand sediments are distributed at the seafloor to water depth of 1200 m in the eastern area of the Okinoerabu-jima and Tokuno-shima. Discontinuous stratified reflectors of the SBP profile are widely observed in this area. Compering with grain size and SBP records in the western area of the Okinoerabu-jima and Tokuno-shima, sedimentary process in the eastern area of these islands is affected by strongly hydrodynamics effect caused by open topographic.

Keywords: sediment, grain size, Okinoerabu-jima, Tokuno-shima

