

Extraction and visualization of submarine geo-information in Mid-Okinawa Trough using underwater video records

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In recent years, many exploration data such as seabed topography images, biological, geochemical and geophysical data, and drilling survey data have been acquired for marine mineral resources exploration. For more effective use of these data in practical applications to exploration and exploitation, we have started to extract and compile geo-information using video image data obtained by diving surveys with the Shinkai 6500, the Hyper Dolphin and the Deep-Toe in and around Mid-Okinawa Trough. The extracted data from the video records includes geo-information on the location of the survey vessel (latitude, longitude, depth, altitude, submarine heading), seabed geological features (rock/ lava, sulfide zone, sand/ mud, ripple mark, gravel), seabed structural features (faults/ cracking, chimney, hot water/ spring water), and biological features (biomat, biological communities). These data are summarized in the event log along the vessel route for each dive. The compiled data are imported into the GIS software so as to easily search and visualize seabed geo-information for making future survey and research plans. By adding drilling data and geophysical survey data obtained by many other research institutes to the database, the GIS database newly created is expected to be used to extract detailed three-dimensional geo-information of the exploration target sea area in future.