[JJ] Evening Poster | S (Solid Earth Sciences) | S-CG Complex & General

[S-CG61]Ocean Floor Geoscience

convener:Kyoko Okino(Atmosphere and Ocean Research Institute, The University of Tokyo) Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe) Most of Earth's volcanism and much of its tectonic activity occur on and beneath the seafloor. Various phenomena on the seafloor are closely linked to plate tectonics, Earth structure and dynamics, and also related to Earth's environments through the hydrosphere and atmosphere. Seafloor rocks and sediments record Earth's evolution and heat and material fluxes on the Earth. Ocean Floor Geoscience session covers a broad range of research on seafloor such as mid-ocean ridge process, subduction dynamics, arc magmatism, hot spot and LIPs, crustal movement and structure etc. Every field of researches and every approaches are welcomed. The session aims to encourage discussion among scientists from different study fields and to integrate our understanding of ocean floor. The session is co-dhaired by K. Tadokoro (Nagoya Univ.), O. Ishizuka (AIST), T. Toki (Univ. Ryukyu), and N. Takahashi (JAMSTEC).

[SCG61-P11]Geological structure of offshore southward Ishigakijima Island estimated from seismic reflection survey

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Keywords:Ryukyu Arc, Ishigaki-jima Island, Seismic reflection survey, Multi-Beam Echo Sounder (MBES) swath bathymetry survey

National Institute of Advanced Industrial Science and Technology (AIST) conducted the marine geological survey around the Ishigaki-jima Island, Ryukyu Islands using R/V Hakurei (JOGMEC) in July 2017. This cruise deployed high-resolution Multi-Channel Seismic (MCS) reflection, parametric subbottom profiler (SBP), Multi-Beam Echo Sounder (MBES) swath bathymetry, gravity survey, seafloor magnetic survey, and submarine sampling using ROV. This presentation shows the geological structure around the Ishigaki-jima Island based on MCS profiles and MBES bathymetric data.

Two remarkable unconformities are recognized in the sedimentary layer offshore Ishigaki-jima Island. On the boundary of remarkable unconformities, the sedimentary layer is divided into three layers. In the offshore eastward Ishigaki-jima Island, southwestward-dipping normal fault is recognized at the NW-SE trending geomorphic lineament. This normal fault is considered to be the transverse fault. In the offshore southward Ishigaki-jima Island, topographic highs exist at multiple places on the forearc slope. These internal structures show an upward convex arch structure. Thus, it is thought that topographic highs are bathymetric expression of anticline structure. In addition, seaward-dipping reverse faults is identified in the northern rim of topographic highs. Therefore, it is considered that topographic highs composed of the anticline structure was formed along with the activity of the seaward-dipping reverse faults. In this presentation, we discuss the tectonics in offshore southward Ishigaki-jima Island from the distribution of topographic highs and seaward-dipping faults.