## [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-P13]Acoustic characterization of REY-rich mud in the Minamitorishima EEZ using high-resolution sub-bottom profiler data

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classification

In 2011, deep-sea sediments containing a high concentration of rare-earth elements and yttrium (REY) were discovered in the Pacific Ocean [1]. More recently, the presence of "extremely REY-rich mud "(maximum total REY content reaches 6800 ppm) was confirmed within the Japanese Exclusive Economic Zone (EEZ) around Minamitorishima Island [2]. The discovery of the mud in the Japanese EEZ raised expectation for future exploitation of the deep-sea REY resource.

To investigate the features and distribution of the REY-rich mud, shipboard sub-bottom profiling (SBP) has been conducted within the Minamitorishima EEZ [3]. The results of the surveys clearly indicated that deep-sea sediments in the Minamitorishima EEZ can be classified into two acoustic facies: transparent and layered. Combining with lithological and geochemical characteristics of sediment core samples, it has been demonstrated that REY-rich mud (acoustically transparent) lies at a shallow depth below the seafloor with very thin non-REY-rich sediment (acoustically layered) cover in the southern and southeastern part of the Minamitorishima EEZ. However, sub-bottom depth of the REY-rich mud as well as thickness of the non-REY-rich sediment are significantly variable, and factors controlling the sediment features have not been fully elucidated yet.

In this study, we investigated the spatial distribution of REY-rich mud, non-REY-rich sediment, and acoustic basement using the SBP data. We also compared the results of the investigation on the SBP data to petrological and geochemical results of sediment core samples. In the presentation, we will show the results of these analyses and discuss the three dimensional distribution of the REY-rich mud (including extremely REY-rich mud layer) within the Minamitorishima EEZ.