
Oral | Symbol M (Multidisciplinary and Interdisciplinary) | M-IS Intersection

[M-IS32_30PM1]Drilling Earth Science

Convener:*Saneatsu Saito(Japan Agency for Marine-Earth Science and Technology), Ken Ikehara(Institute of Geology and Geoinformation, National Institute of Advanced Industrial Science and Technology), Tetsuro Hirono(Department of Earth and Space Science, Graduate School of Science, Osaka University), Keita Umetsu(Japan Agency for Marine-Earth Science and Technology), Chair:Ken Ikehara(Institute of Geology and Geoinformation, National Institute of Advanced Industrial Science and Technology), Natsue Abe(Institute for Research on Earth Evolution Independent Administrative Institution Japan Agency for Marine-Earth Science and Technology)

Wed. Apr 30, 2014 2:15 PM - 4:00 PM 416 (4F)

"Earth Drilling Science" session aims to exchange the latest information and scientific achievements in Ocean/Continental drilling projects and to promote the interdisciplinary science. The session covers a wide range of drilling sciences, earth dynamics, environments, and the drilling-related technologies. The overview of the recent IODP cruises will be reported.

3:45 PM - 4:00 PM

[MIS32-P01_PG]Hydraulic properties and pore structure of the sedimentary rocks at Site C0020, IODP Expedition 337 in Sanriku-oki basin

3-min talk in an oral session

*Wataru TANIKAWA¹, Osamu TADAI², Fumio INAGAKI¹, Hinrichs KAI-UWE³, Yusuke KUBO⁴, Yoko OHTOMO¹ (1.JAMSTEC/Kochi Kore Center, 2.Marine Works Japan Ltd., 3.University of Bremen, 4.JAMSTEC)

Keywords:permeability, water potential, water activity, off-Sanriku basin, IODP expedition 337, biomass

Microbial biomass in the ocean sediments is controlled by physical, chemical and biological factor and conditions. The biomass in sediments reduces with increasing depth, and the limit of life and the reduction rate of biomass is partly controlled by physical conditions because lithification and diagenesis of oceanic sediments induce reduction of porosity, permeability and pore size. However the relationship between biomass and physical property for deep oceanic sediments is not well known. Therefore, in this study, a series of physical property measurements (Water potential, permeability and porosity) were conducted on the sediment cores at site C0020 from IODP expedition 337 and at site 902 from the Chikyu shakedown cruise (CY06-06) in Sanriku-oki basin. We measured water potential under atmospheric condition and permeability under confining pressure up to 40 MPa. Then we estimated the correlation between water potential and microbial biomass in the sediments.