

---

[EJ] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-IS Intersection

## [M-IS08]Drilling Earth Science

convener:Yasuhiro Yamada(Japan Agency for Marine-Earth Science and Technology (JAMSTEC), R&D Center for Ocean Drilling Science (ODS)), Junichiro Kuroda(Department of Ocean Floor Geoscience, Atmosphere and Ocean Research Institute, the University of Tokyo), Kohtaro Ujiie(筑波大学生命環境系, 共同), Yusuke Suganuma(National institute of Polar Research)

Tue. May 22, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

"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 scientific drillings as well as future projects of any types of scientific drilling will be reported.

---

## [MIS08-P07]Structural and petrological study of ultramafic rocks in Celestial seamount in Mariana Trench

\*Morii Daisuke<sup>1,2</sup>, Katsuyoshi Michibayashi<sup>1,2</sup>, IODP EXP366 Scientist Party (1.Institute of Geosciences, Shizuoka University, 2.Department of Earth and Planetary Sciences, Nagoya University)

Keywords:Mariana Trench, serpentinite seamount, peridotite

Celestial serpentinite seamount is one of seamounts in Mariana Trench and is located to the central part of Mariana Trench extending N-S direction at the depth of about 2,000~4,000m below sea level. IODP Expedition 366 cruise from December 8th, 2016 to February 7th, 2017 has obtained serpentinitized peridotite cores in Celestial serpentinite seamount. We have analyzed chemical compositions of minerals and crystallographic fabrics of olivine grains in fourteen serpentinitized peridotites obtained from Celestial seamounts. As a result, thirteen samples have coarse granular textures with olivine grain sizes between 1 and 5mm, with one sample showing a fine-grained texture with olivine grain sizes between 0.1 and 1mm. Chemical compositions of both olivine and spinel are in the range of Olivine-Spinel Mantle Array (OSMA) of Arai (1994), where Cr# in spinel is no more than 0.6, indicating little influence of water. With respect to olivine crystallographic fabrics, serpentinitized peridotites show three fabric types: [100] (010) type (A-type), [010] fiber type (AG-type) and [100] {0kl} type (D-type). Among them, D-type is developed under high stress and low water contents environment. D-type peridotites have coarse granular textures, indicating that the mantle below Celestial seamount could have been intensely deformed under low water contents environment. These features are quite compatible with those found in peridotites obtained by South Chamorro seamount.