

## **Physical Properties of the MohoTZ: Implications from recent drilling projects**

NATSUE ABE<sup>1</sup>, KEISHI OKAZAKI<sup>1</sup>, IKUO KATAYAMA<sup>2</sup>,  
KOHEI HATAKEYAMA<sup>3</sup>, YUYA AKAMATSU<sup>3</sup>,  
KATSUYOSHI MICHIBAYASHI<sup>1</sup>, EIICHI TAKAZAWA<sup>4</sup>,  
DAMON TEAGLE<sup>5</sup>, PETER KELEMEN<sup>6</sup>, MARGUERITE  
GODARD<sup>7</sup>, JURG MATTER<sup>8</sup>, JUDE COGGON<sup>9</sup> AND THE  
OMAN DRILLING PROJECT PHASE II SCIENCE PARTY

- <sup>1</sup> Japan Agency for Marine-Earth Science and Technology (JAMSTEC), 2-15 Natsushima-cho, Yokosuka 237-0061, Japan (abenatsu@jamstec.go.jp)
- <sup>2</sup> Hiroshima University, , Hiroshima 739-8511, Japan
- <sup>3</sup> Nagoya University, Nagoya, 464-8602, JAPAN
- <sup>4</sup> Niigata University, 8050 Ikarashi 2-no-cho, Nishi-ku, Niigata, 950-2181, Japan
- <sup>5</sup> NOCS, University of Southampton, European Way, Southampton, SO14 3ZH, UK
- <sup>6</sup> LDEO, Columbia University, Palisades, NY, USA.
- <sup>7</sup> Géosciences Montpellier, Université de Montpellier & CNRS, UMR5243, 34095 Montpellier cedex5, France

We report physical property measurements of core samples from the Samail ophiolite in Oman, drilled by the ICDP Oman Drilling Project. Onboard core logging was conducted on D/V Chikyu for 2 months in the summers of 2018. The CM holes (Holes CM1A and CM2B) were drilled through the crust-mantle transition in the ophiolite, from gabbroic lower crust, through dunite with minor gabbros, and in to residual mantle harzburgite. Generally, gabbroic rock types have higher density, P-wave velocity, and electrical resistivity, and lower porosity than ultramafic lithologies. Serpentinized dunite have lower density, P-wave velocity and electrical resistivity, and higher porosity than serpentinized harzburgite, and these physical properties are correlated with magnetic susceptibility, probably due to crystallization of magnetite during alteration. Average X-ray CT values are also correlated with many other physical properties in most lithologies. Those physical property data and the lithological characteristics of the Moho transition zone in the Oman ophiolite revealed apparent difference and similarities with the oceanic data, especially in the seismic profiles from the oceanic plate. In this paper, we would like to compare the data from ocean drilling, Oman Drilling and seismic profiles.