



## **Paleoceanography/climate and taphonomy at intermediate water depth in the Subtropical Western North Pacific Ocean over the last 1 Ma from IODP Exp 350 Sites U1436C and U1437B, Izu arc area.**

Maryline Vautravers and the Team IODP EXP350 Team

Cambridge University, Earth Science Department, Godwin Laboratory, CB2 3EQ Cambridge, United Kingdom  
(mv217@cam.ac.uk)

IODP Expedition 350 Site U1436C lies in the western part of the Izu fore arc basin, ~60 km east of the arc front volcano Aogashima, at 1776 m water depth. This site is a technical hole (only a 150 m long record) for a potential future deep drilling by Chikyu. Site U1437 is located in the Izu rear arc, ~90 km west of the arc front volcanoes Myojinsho and Myojin Knoll, at 2117 m water depth. At this site in order to study the evolution of the IZU rear arc crust we recovered a 1800 meter long sequence of mud and volcanoclastic sediments. These sites provide a rich and well-preserved record of volcanic eruptions within the area of the Izu Bonin-Arc. However, the material recovered, mostly mud with ash containing generally abundant planktonic foraminifera, can support additional paleoceanographic goals in an area affected by the Kuroshio Current. Also, the hydrographic divide created by the Izu rise provides a rare opportunity to gain some insight into the operation of the global intermediate circulation. The Antarctic Intermediate Water Mass is more influential at the depth of U1437B in the West and the North Pacific Intermediate Water at Site U1436C to the East. We analyzed 460 samples recovered at Sites U1436C and U1437B for a quantitative planktonic foraminifer study, and also for carbonate preservation indices, including: shell weight, percent planktonic foraminifera fragments planktonic foraminifer concentrations, various faunal proxies, and benthic/planktonic ratio. We measured the stable isotopes for a similar number of samples using the thermocline dwelling *Neogloboquadrina dutertrei*.

The dataset presented here covers the last 1 Ma at Site U1437B and 0.9 Ma at Site U1436C. The age models for the two sites are largely established through stable isotope stratigraphy (this study). On their respective age models we evidence based on polar/subpolar versus subtropical faunal assemblages changes qualitative surface water temperature variations recording the changing influences in the Kuroshio/Oyashio currents at orbital time scales over the last 1 Ma. However, the 2 main findings are i.) that of the intense and pervasive carbonate dissolution at such an intermediate water depth, especially during interglacials, and in particular at site U1436C, and ii.) the good and improving carbonate preservation at Site U1437B during glacials, particularly in the upper part of the record.