

2008 Fall Meeting
Search Results

Cite abstracts as **Author(s) (2008), Title, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract xxxxx-xx**

Your query was:
carbotte

HR: 14:25h
AN: B23F-03
TI: **Characteristics of the crustal magma body in the 2005-06 eruption area at 9°50'N on the East Pacific Rise from a 3D multi-channel seismic investigation**
AU: * **Carton, H**
EM: hcarton@deo.columbia.edu
AF: *Lamont-Doherty Earth Observatory of Columbia University, 61 Route 9W, Palisades, NY 10964, United States*
AU: **Carbotte, S M**
EM: carbotte@deo.columbia.edu
AF: *Lamont-Doherty Earth Observatory of Columbia University, 61 Route 9W, Palisades, NY 10964, United States*
AU: **Mutter, J C**
EM: jcm@deo.columbia.edu
AF: *Lamont-Doherty Earth Observatory of Columbia University, 61 Route 9W, Palisades, NY 10964, United States*
AU: **Canales, J P**
EM: jcanales@whoi.edu
AF: *Woods Hole Oceanographic Institution, 360 Woods Hole Rd, Woods Hole, MA 02543, United States*
AU: **Nedimovic, M R**
EM: mliaden@dal.ca
AF: *Department of Earth Sciences Dalhousie University, Edzell Castle Circle, Halifax, NS B3H4J1, Canada*
AU: **Nedimovic, M R**
EM: mliaden@dal.ca
AF: *Lamont-Doherty Earth Observatory of Columbia University, 61 Route 9W, Palisades, NY 10964, United States*
AU: **Newman, K R**
EM: knewman@deo.columbia.edu
AF: *Lamont-Doherty Earth Observatory of Columbia University, 61 Route 9W, Palisades, NY 10964, United States*
AU: **Marjanovic, M**
EM: milena@deo.columbia.edu
AF: *Lamont-Doherty Earth Observatory of Columbia University, 61 Route 9W, Palisades, NY 10964, United States*
AU: **Xu, M**
EM: minxu@mit.edu
AF: *Woods Hole Oceanographic Institution, 360 Woods Hole Rd, Woods Hole, MA 02543, United States*
AU: **Aghaei, O**
EM: Omid.Aghaei@dal.ca
AF: *Department of Earth Sciences Dalhousie University, Edzell Castle Circle, Halifax, NS B3H4J1, Canada*
AU: **Stowe, L**
EM: ics2123@columbia.edu
AF: *Columbia University, 2960 Broadway, New York, NY 10027, United States*
AB: In July-August 2008 the first 3D academic multi-streamer seismic survey was carried out aboard R/V Langseth, focusing on the 9°50'N Integrated Study Site (ISS) at the East Pacific Rise. Preliminary results from 2D processing of along-axis and across-axis grid lines provide insight into the architecture of the magmatic system at the ISS and its relationship with hydrothermal activity and volcanic/dyking events associated with the 2005-06 eruption. Segmentation at length scales of about 5-10km of the axial magmatic system of the 9°50'N area can be mapped based on variations in two-way travel time, reflection strength and along-axis dip of the axial magma chamber (AMC) reflector on the stack sections, as well as the presence of edge diffractions. The main hydrothermal vents around 9°50'N are located over the region of shallowest AMC, which can be divided into two sub-regions, between 9°45.2'N - 9°48.7'N and 9°48.7'N - 9°51.9'N, respectively, separated by a discontinuity that has been interpreted as a potential hydrothermal downflow zone based on microseismicity studies. The northern lens event is rather flat-lying, while the southern one is more complex, dips south and shows pronounced edge diffractions. Both of these shallow lenses display distinctly weaker amplitudes than AMC reflections located immediately to the north and south. Lava flows from the most recent eruption overlie these two 'dim' lenses, and also extend over part of the north-dipping, brighter AMC to the north. Though detailed quantification is required, such along-axis variations in reflection strength are suggestive of a lower present-day melt percentage between 9°45.2'N - 9°51.9'N, an observation consistent with melt being drained by the 1991 and 2005-06 eruptions.
DE: 3025 Marine seismics (0935, 7294)
DE: 8135 Hydrothermal systems (0450, 1034, 3017, 3616, 4832, 8424)
DE: 8416 Mid-oceanic ridge processes (1032, 3614)
SC: Biogeosciences [B]
MN: 2008 Fall Meeting

[New Search](#)

