Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

MIS27-05 会場:101B 時間:5 月 24 日 10:45-11:00

コスタリカ沈み込み帯掘削（Exp. 334）における応力・歪解析
Stress and strain analyses in the Costa Rica subduction margin, IODP Expedition 334

山本 由弦[1*], 林 為人[1], 臼井 洋一[1], 金松 敏也[1], 斎藤 実篤[1], Xixi Zhao[2], 橋本 善孝[3], Michael Stipp[4], 氏家 恒太郎[5], Paola Vannucchi[6]
YAMAMOTO, Yuzuru[1*], LIN, Weiren[1], USUI, Yoichi[1], KANAMATSU, Toshiya[1], SAITO, Saneatsu[1], Xixi Zhao[2], HASHIMOTO, Yoshitaka[3], Michael Stipp[4], UJIIE, Kohtaro[5], Paola Vannucchi[6]

[1] 海洋研究開発機構, [2]University of California, Santa Cruz, [3] 高知大学, [4]IFM-GEOMAR, [5] 筑波大学, [6]University of Florence
[1]IFREE, JAMSTEC, [2]University of California, Santa Cruz, [3]Kochi University, [4]IFM-GEOMAR, [5]University of Tsukuba, [6]University of Florence

The Costa Rica Seismogenesis Project (CRISP) is designed to understand the processes that control nucleation and seismic rupture of large earthquakes at erosional subduction zones. Integrated Ocean Drilling Program (IODP) Expedition 334 drilled and cored at the middle slope (Sites U1378 and U1380), upper slope (Site U1379), and input site (Site U1381).

Stress and strain analyses using anelastic strain recovery (ASR), fault kinematics, and anisotropy of magnetic susceptibility (AMS) have been conducted in the middle and the upper slope. Based on ASR analyses, clear difference in present-days stress state between the slope sediments and the basement was identified in the Site U1379: A normal-fault stress regime characterizes the slope sediments, whereas a strike-slip regime corresponds to the basement. On the other hand, the stress-states in the slope sediments in the Sites U1378 and U1380 are characterized by a strike-slip regime that Sigma 2 has oriented vertically. The Sigma 1 direction oriented NNW-SSE, which is corresponding to the Sigma Hmax direction identified in the LWD, parallel to the present GPS direction. In contrast to the present-day stress state, the ancient stress and strain based on kinematics of faults and AMS were controlled by direction of plate subduction. The spatial and time variations in stress state along the CRISP transect is a key to examining the onset of subduction erosion along the subduction channel.

キーワード: 浸食型沈み込み帯, ASR, AMS, CRISP, Expedition 334, IODP
Keywords: Subduction erosion, ASR, AMS, CRISP, Expedition 334, IODP