



## **6 years of borehole pore-pressure monitoring at the toe of Nankai accretionary prism using two ACORK observatories**

M. Kinoshita (1), T. Kasaya (1), E. E. Davis (2), R. D. Meldrum (2) and K. Becker (3)  
(1) JAMSTEC-IFREE, Yokosuka, Japan (masa @jamstec.go.jp), (2) Pacific Geoscience Center, Geological Survey of Canada, BC, Canada, (3) RSMAS, University of Miami, MI, USA

Two Advanced CORKs (ACORKs) were installed in the frontal thrust and on the trough floor of the Nankai Trough off Muroto during the ODP Leg196 in 2001. Since then, data was retrieved basically once per year by ROV KAIKO or HOV Shinkai 6500 (both from JAMSTEC). We found that the downhole pressure data have been continuously recorded since the installation of ACORK in 2001 at Hole 808I (frontal thrust site) and at Hole 1173B (trough floor). Davis et al. (2006) reported a transient pressure increase in July-2003, and interpreted that it was caused by a series of very-low-frequency (VLF) events in the accretionary prism. Localized heat flow anomalies were identified at the second frontal thrust near ODP Site 808. We believe that the uplift of interstitial fluid along the frontal thrust causes this heat flow anomaly. The fluid flow may be related either to VLF events or to more diffuse, post-seismic stress relaxation.

During the KR07-18 cruise by JAMSTEC R/V KAIREI and ROV KAIKO 7000II, two ACORK sites were revisited and four dives were carried out successfully. Both of ACORKs, one at ODP Hole 808I (frontal thrust) and the other at ODP Hole 1173B (trough floor), were found in operation and data were downloaded successfully. We obtained more than 6 years of continuous formation pressure records in the toe of accretionary prism and below the trough floor. Furthermore, we had a long-standing operation that has not been completed due to many reasons: Installation of

the bridge plug into the mouth of ACORK head. This has been a very important operation, because it can isolate the lowermost section at 808I, approximately containing the decollement section. For this operation we spent three dives in order to remove mud and clean up using a small rake and a hydraulic suction pump, and to insert the bridge plug. Although the data is not yet retrieved after installing the bridge plug, we believe we successfully set the plug in place.