

CALL FOR APPLICATIONS

for scientists based in ECORD Member Countries to participate in

IODP EXPEDITIONS:

372: Creeping Gas Hydrate Slides and Hikurangi Slow Slip LWD

26 November 2017 – 4 January 2018

AND

375: Hikurangi Subduction Margin

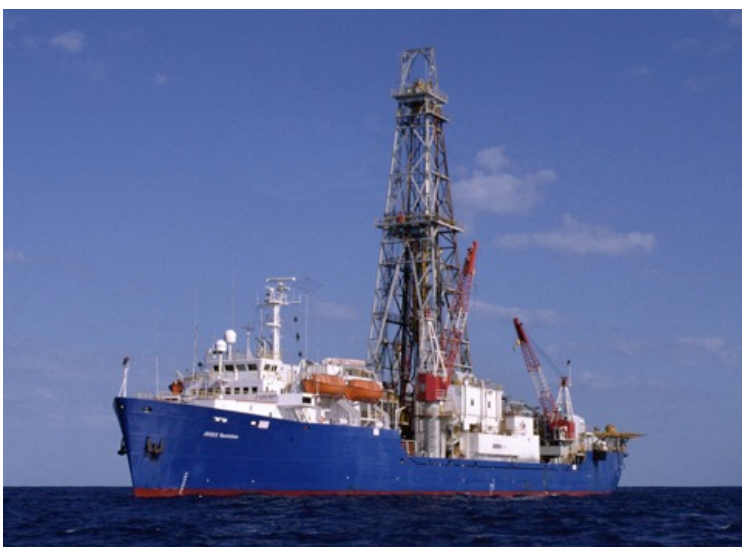
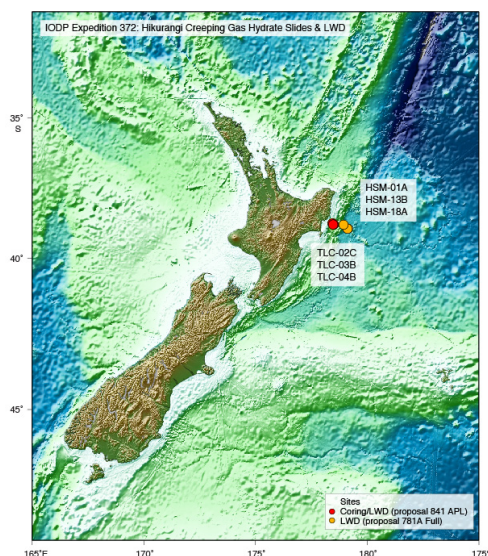
8 March – 5 May 2018

on board the *JOIDES Resolution*

DEADLINE to apply for Exp. 372 or Exp. 375: 1 October 2016

The European Consortium for Ocean Research Drilling (ECORD) offers you the unique opportunity to sail on Expedition 374 onboard the *JOIDES Resolution* in the framework of the International Ocean Discovery Program (IODP), an international research program for drilling at sea.

IODP Expedition 372: Creeping Gas Hydrate Slides and Hikurangi Slow Slip LWD



IODP Expedition 372 has two primary objectives. These are (1) to investigate the relationship between gas hydrate and underwater landslides (IODP proposals 841-APL2 & 841-Add); and (2) to characterize sediment and fault zone structures and physical properties associated with recurring shallow slow slip events along the Hikurangi subduction interface (IODP proposals 781A-Full & 781A-Add).

Call Expedition 372&375 – 7/2015

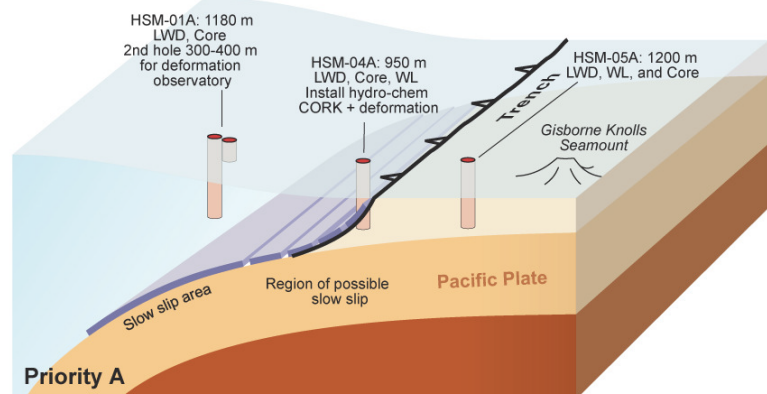
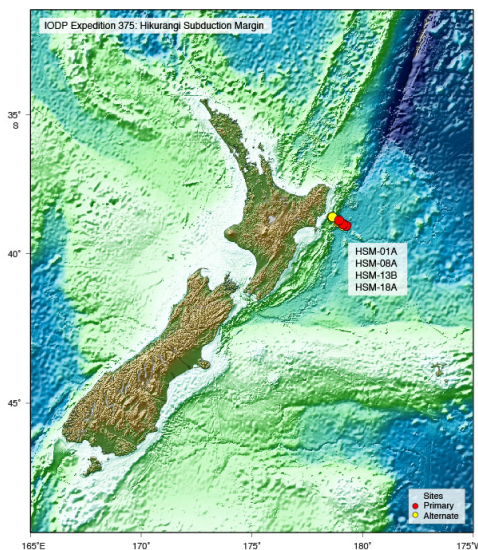


Submarine slides are thought to occur as catastrophic events, and as such pose a significant geohazard potentially causing tsunamis and damaging seafloor installations. Dissociation of gas hydrate has been proposed as a driver of seafloor destabilization, but there is evidence that gas hydrate itself may lead to seafloor weakening through creeping seafloor deformation. We will test the hypothesis that interstitial gas hydrate, like ice, may exhibit viscous behavior leading to slow deformation as observed in terrestrial rock glaciers. Alternatively, permeability reduction from gas hydrates may lead to overpressure, hydrofracturing, and seafloor weakening. To elucidate how gas hydrates promote creeping behavior, we will collect logging-while-drilling (LWD) data at three sites as well as APC cores, pressurized cores, and penetrometer data at one of the LWD sites.

As described for Expedition 375 below, shallow slow slip events (SSE) along the Hikurangi margin provide the opportunity to investigate the physical processes and in situ conditions that govern the spectrum of fault slip modes through a combination of LWD, coring, and continuous monitoring. On Expedition 372, we will acquire LWD data at a series of sites that will be cored and instrumented during the subsequent IODP Hikurangi Subduction Margin Expedition 375 (see below).

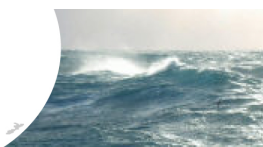
http://iodp.tamu.edu/scienceops/expeditions/hikurangi_gas_hydrate_slides.html

IODP Expedition 375: Hikurangi Subduction Margin



Expedition 375 will investigate slow slip events (SSE) along the northern Hikurangi subduction margin (IODP proposals 781A-Full and 781A-Add). Hikurangi SSE recur every ~ 2 years so we can monitor changes in deformation rate and associated chemical and physical properties surrounding the SSE source area throughout an entire slow slip cycle. Sampling material from the sedimentary section and oceanic basement of the subducting plate and from primary active thrusts in the outer accretionary wedge, in combination with LWD data, will reveal the rock properties, composition, and lithological and structural character of the active faults involved in the SSE, as well as material that is transported downdip to the SSE source region. Coring and downhole measurements from four sites will be integrated with the LWD data collected during Expedition 372 (see above). In addition, borehole observatories will be installed at the thrust fault site and a site in the upper plate to monitor hydrologic, chemical, and physical processes during the SSE cycle.

http://iodp.tamu.edu/scienceops/expeditions/hikurangi_subduction_margin.html



For more information about the **JOIDES RESOLUTION Expedition Schedule and the expedition science objectives** see <http://iodp.tamu.edu/scienceops/> - this includes links to the individual expedition web pages that provide the original IODP proposal and expedition planning information.

Who should apply: Opportunities exist for researchers (including graduate students) in all specialties – including but not limited to sedimentologists, petrologists, structural geologists, paleontologists, biostratigraphers, paleomagnetists, petrophysicists, borehole geophysicists, microbiologists, and inorganic/organic geochemists.

The Application Process is open to scientists in all ECORD member countries. Please download the *Apply to Sail* general application forms from the ESSAC webpage:

- Form Expedition 372: http://www.essac.ecord.org/flyer/Apply_to_sail_webform_372.docx
- Form Expedition 375: http://www.essac.ecord.org/flyer/Apply_to_sail_webform_375.docx

Please, fill out all applicable fields and send it to the ESSAC office by email (essac@geomar.de) with the following additional documents until **1 October 2016**:

1. **A letter of interest** outlining your specific expertise, previous involvement in DSDP/ ODP/ IODP expeditions, research interests, primary research goals of your proposed participation.
2. **CV and publication list.**
3. **Young researchers** must additionally provide a **letter of support** from their host institution, including information on post-cruise science support.

All applications should state how you intend to achieve the proposed scientific objectives, with information on the funding scheme and support from your institution or national funding agencies. More information can be found under: http://www.essac.ecord.org/flyer/Guidelines_for_Applying_to_sail.pdf

In addition to the ESSAC application, all applicants must inform their national office or national delegate and send a copy of the application documents. The national offices or national delegates can also provide information regarding travel support, post-cruise funding opportunities, etc.

See <http://www.essac.ecord.org/index.php?mod=about&page=ESSAC> for a list of the national contact persons.

For further information or questions, please contact the ESSAC Office:

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