Report from Dr. David Buchs Université de Lausanne (currently at Australia National University)
Shipboard Sedimentologist on Chikyu Riser Drilling Vessel IODP
Nankai Trough Seismogenic Zone (NanTroSEIZE)

Experiment Stage 2: Expedition 319 "Riser/Riserless Observatory 1"

Expedition 319 ended and the Chikyu docked at Yokkaishi (Japan) a few days ago. Two sites in the Japanese forearc basin and trench slope were successfully drilled. Despite delays due to typhoons and oceanic currents, drilling operations were completed ahead of schedule. Spare time was used to collect logging data at a contingency site in the Nankai trench, which is currently being cored by Expedition 322. Participating in Expedition 319 was a great experience! The expedition was at the cutting edge of drilling techniques and, using words of Harold Tobin (co-chief project scientist), "that was the first IODP riser drilling (1607 m BSF in water 2054 m BSL), the longest expedition ever in scientific ocean drilling (114 days), the first time cutting analyses has been a part of IODP science and the first time multiple science teams and co-Chiefs have rotated on a single expedition". Rotation of different groups was quite a challenge. Fortunately, it worked smoothly even though most of us were unprepared to deal with cuttings. A vertical seismic profile was also made and observatory tools installed in the second hole close to a major fault in the accretionary prism. Experience obtained during Expedition 319 will hopefully allow drilling to reach the décollement at the seismogenic depth in the near future.

The Chikyu is a huge drilling vessel (100 crew members) and her laboratories are amazingly well equipped. A wide range of analytical techniques are available on-board (e.g. XRD, XRF, XRF core logger and CT-scanner), which can be run 24/7 with assistance of the technical staff. Serving as a sedimentologist is therefore not restricted to visual descriptions of retrieved material. It is also possible to carry out more detailed investigations while sailing. For example, we had some fun with the XRF core logger that provides XRF profiles of the cores, with 1 semi-quantitative measure every cm!

Life onboard is as remarkable as work conditions. Everyone has its own private cabin. Furthermore, a gym room, sauna and Jacuzzi are available. The supply boat provided fresh food once a week. A DVD library is located beyond the bridge, with an extended collection of movies (many in Japanese, OK). Some were displayed in the Theatre during "official movie nights" organized by the Science Group. Finally, the vessel is sufficiently long to limit heave effects and, thus, conditions are almost ideal to organize Ping Pong tournaments. However it has been hard to really enjoy divertissement facilities since results have kept us very busy!

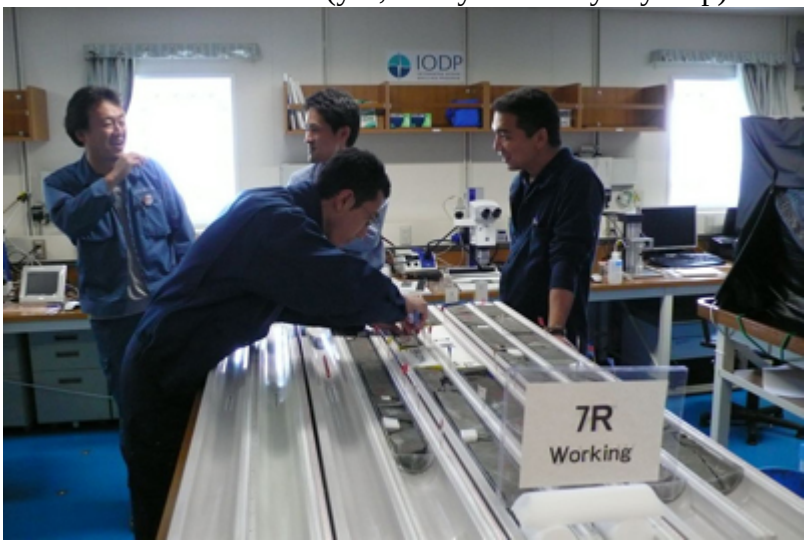
I highly appreciated my stay on the Chikyu. I had the pleasure to learn new techniques, exchange ideas with experienced people and make new friendships. I feel particularly lucky to have been granted the opportunity to participate in an innovative IODP expedition. If you want to know more about results of the Expedition, note the Science Party will be represented at forthcoming INVEST meeting (Bremen) and AGU fall meeting. Natalia Efimenko (Université de Lausanne), who was a member of the first group onboard Chikyu during Exp. 319, plans to present a poster at the Swiss Geoscience Meeting.

1- Arrival at Chikyu

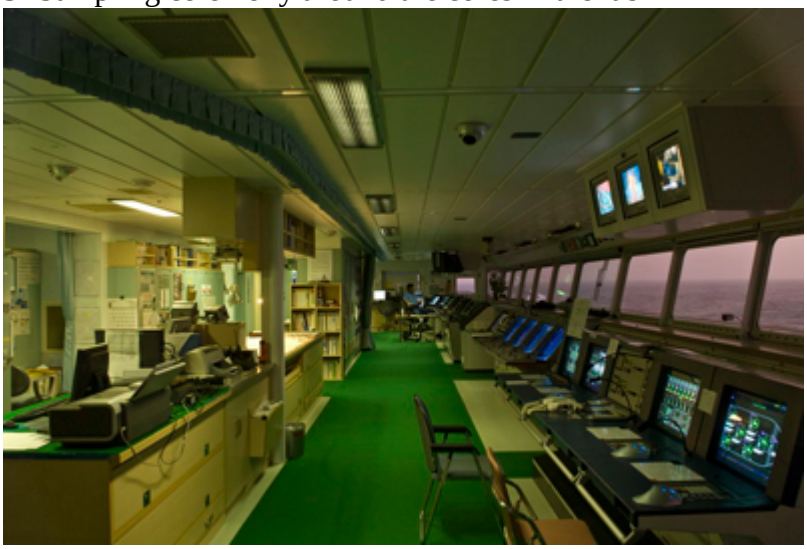
2- Disassembling riser pipes (view from the “dog house”)

3- Supply boat providing fresh food

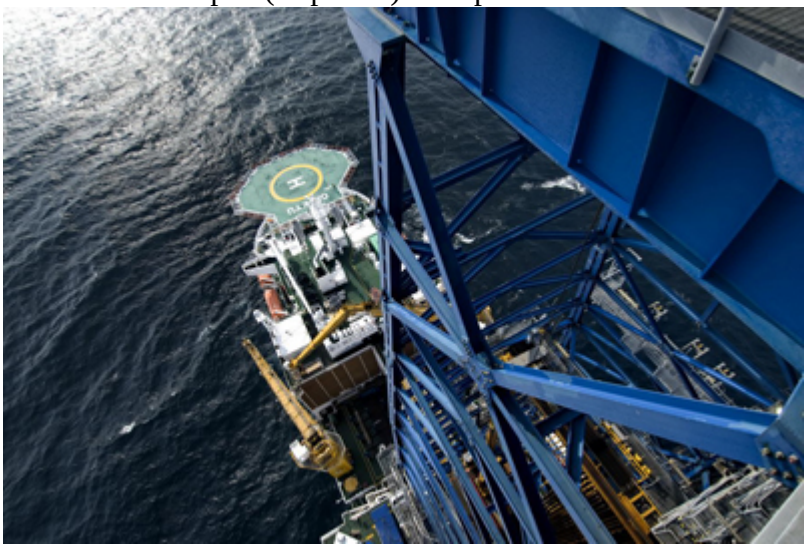
4- Sunset at the helideck (yes, Chikyu is a very dry ship)



5- Sampling ceremony around the cores in the lab


6- Bridge

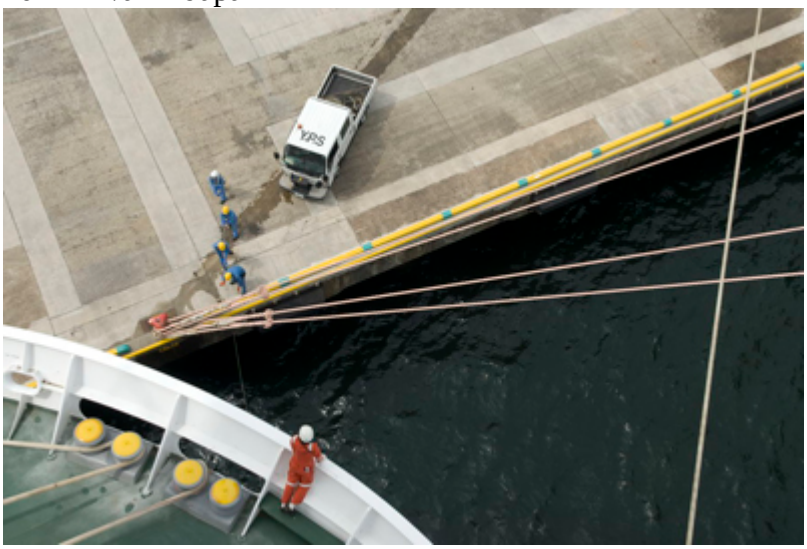
7- Science Group B (Exp. 319) on top of the derrick



8- View from the derrick (note walking man on the helideck, kindly making the scale)

9- View inside the derrick

10- Arrival in Japan



11- Arrival in Yokkaichi

12- Chikyu tied up at Yokkaichi