

Drilling into the Seismogenic Zone of Faults: Sampling and monitoring faults in major earthquake zones

Tuesday 17 April, 16:00-17:00

Nobody ever drilled into an active fault generating great earthquakes. Yet, this is exactly what two ambitious projects of the Integrated Ocean Drilling Program (IODP) aim to do. Their goal is to understand what are the processes governing the ruptures that causes major earthquakes, several kilometres below the seafloor.

The December 2004 Sumatra earthquake and Indian Ocean tsunami dreadfully demonstrated that earthquakes are possibly the greatest natural hazard on Earth. Earthquakes of subduction zones – like the Sumatra quake – account for ~90% of global seismicity, causing devastating effects on populated coastal areas from both ground shaking and tsunamis. In particular, subduction zone earthquakes represent impending natural hazards to people and property for many major cities (for example: Tokyo, Lisbon, Mexico City, Seattle, Valparaiso). However, earthquakes are surprisingly the only major natural hazard for which no short term prediction method has been developed to date. Advances in the understanding of when, where, and how earthquakes and related tsunamis occur is one the most pressing challenges of earth scientists.

Apparently simple questions like why faults slip in either stable or unstable – earthquake generating – manners are yet a matter of much speculation, preventing proper evaluation of related hazards. A leading aim in earthquake research is the direct sampling and instrumentation of an active plate boundary fault by drilling into the earthquake-generating seismogenic zone.

This press conference presents two international projects of the Integrated Ocean Drilling Program (IODP), which aim at drilling the seismogenic zone offshore Japan and Costa Rica. The success of the projects will be possible thanks to the state-of-the-art technology of the new Japanese drilling ship Chikyu.

Session: TS3.2 Seismogenic coupling zones - state and processes | [>>programme](#)
Monday, 16 April 2007, 13:30 – 17:00

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