

Introduction to the special session 'Seismogenic Zone Drilling'

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'Seismogenic Zone Drilling' is one of the most important missions of IODP (Integrate Ocean Drilling Program) starting from 2003. 'Chikyu', a new riser-drilling ship now being built, has enough capability to penetrate to the shallowmost part of the seismogenic plate interfaces. Analyses of the core and fluid samples and data provided by the borehole logging and long-term monitoring obtained at the source region of interplate earthquakes will greatly improve our understandings about earthquake physics and fault dynamics. In order to accomplish the seismogenic drilling successfully, we have to make both science and actual drilling plans very carefully and deliberately. We think the best strategy is to build a 'master-model' of a subduction seismogenic plate boundary by integrating all the products of extensive researches in every field related to the earthquake seismology, seismotectonics of subduction zones, science of fault materials and so on. The synthesized model will be tested using the drilling results element by element, and also employing modeling studies on the whole. Since the seismogenic zone drilling needs a lot of developments in the technologies of drilling and instrumentation of borehole observatories, the master model also helps these challenges in technologies. In this special session, we expect stimulating presentations and active discussion to derive the master model.