

## New approach to maximize CHIKYU capability

Hodaka Kawahata

Graduate School of Frontier Sciences, The University of Tokyo

03-5351-6443, kawahata@ori.u-tokyo.ac.jp

### Abstract

Since IODP is an integrated ocean program, three different types of drilling platform are available. In order to develop riser operations, we must make an effort to increase the number of riser proposals. 3D and/or large 2D seismic site survey may be too heavy to single group of researchers /potential proponents. IO will be anticipated in order to have a collaboration to foster riser –proposals.

### 1. Introduction

The previous deep-sea projects such as DSDP and ODP had conducted using one drilling platform of JR-type non-riser ship, and many deep-sea cores were taken from deep-sea oceans in each two-month operation. In IODP, three different types of drilling platform are available, and we can explore much wider region/place under ocean sea floor.

However, it does not seem that all capabilities are utilized to maximum level, especially CHIKYU riser drilling. There are a few obvious reasons, related current proposal handling system. So, I would like to make some suggestions and/or discussion points related the issues for next period of ocean drilling program.

### 2. Issues in the current IODP

In the current IODP, the proposal handling system has been inherited by DSDP/ODP ones, which is very fair and historically well proven system. And it is suitable for JR type riserless operations. On the contrary, the system creates high hurdle to riser drilling expedition proponents. Addition on the hurdle, there are some other reasons which prevent increasing the number of riser proposals. I think the reasons can be consolidated to three groups;

- It is difficult for individual potential proponents/researchers to conduct site survey, such as 3D and/or large 2D seismic survey to characterize the target site and support the science hypothesis.
- CHIKYU/riser-drilling feature has not been clear among the researchers

/potential proponents. Therefore, there is no new type of drilling target proposals, such as under salt dome, hydrocarbon containing formation, etc.

- At the current situation, CHIKYU riser operation has water depth limit, such as 2,500m. It limits most of potential drilling sites inside territory water or within EEZ. Getting drilling permit/clearance becomes much more complicated and quite often, is not allowed.

### 3. Suggestions and Discussion points

To increase number of riser expeditions and utilize CHIKYU capability, I suggest/throw a few points.

- Introduce different proposal handling pass/procedure for riser project;  
[This is important to promote the project-oriented approach to new big science themes using riser drilling. In addition, planning process of the riser drilling needs more time than non-riser case and very complicated. The next program would need an improved proposal track for riser drilling to maximize its capability.](#)
- Early commitment; new program includes scientific site survey;  
[The program support for site survey leads also significant advantage to shorten preparation time for riser implementation. This may be conducted as a part of new procedure in evaluation-nurturing process for the riser proposal. The IO will handle the riser project management under interaction with SAS.](#)
- Educate researchers/potential proponents CHIKYU riser-drilling feature and potential target;  
[The IO prepares predigested specifications/guidebook of CHIKYU so that researchers/proponents can be easy to understand the capability and current limitation of CHIKYU. Shipboard data from state of the art logging tools, cutting analysis and gas monitoring on CHIKYU would shed light on some scientific targets even though from the non-cored or unrecovered intervals.](#)
- Encourage IO to develop further riser related technology to extend riser water depth limit, and widen the operable conditions;  
[Upgrade riser technology enables the ultra-deep drilling in deep ocean floor for example. Improved drilling tools/technique also provide increase in both core recovery and its quality. I believe an attractive coordination between scientific requests and technology innovation generates cutting-edge science in scientific ocean drilling.](#)