

MIS007-18

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Overview of Chikyu Lab Data Management - utilizing the onboard lab data management and the shore data distribution site

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Through our participation to NanTroSEIZE stage 1 & 2 activities D/V Chikyu carried out five IODP expeditions so far. We drilled and recovered more than 500 cores underneath seafloor of Kumano Basin. The research data acquired as a result of the core observation and analysis work flow achieved in Chikyu onboard lab were sorted by the expedition number and the measurement type and group and then stored in the shore data management system in CDEX. Although the total volume of the digital data captured in the land system now exceeded 5T byte after those expeditions we managed to make most of them on-line accessible and downloadable with the applicable protection and conditions based on JAMSTEC and IODP policies.

Under the process of the core work flow in Chikyu lab we normally obtain the data for more than 15 different items measured by the instruments and we load them immediately to J-CORES (Chikyu lab science data base system). Additionally we have to the other systems to preserve the raw data generated by X-ray CT scanner and Wireline logging. This report will explain how the data management of different kinds of science data was achieved in terms of data capture and utilization took place in the actual core workflow applied in Chikyu lab for the expeditions of NanTroSEIZE stage 1 & 2. Expedition 319 was the first scientific ocean drilling cruise ever in which riser drilling was successfully conducted. A work flow of analyzing the cuttings was introduced to Chikyu lab analytical process. In order to deal with new data by the cuttings work flow we had made the following two modifications of J-CORES, adding cuttings as new miscellaneous sample material and implementation of Mud Depth Scale. I will explain how J-CORES handled the cuttings data by using the examples of Expedition 319.

One can access to the expedition science data acquired by Chikyu so far at Chikyu Laboratory Data Center (<http://sio7.jamstec.go.jp/>) via Internet. It is divided into 6 groups as follows; 1) Core (and cuttings) analytical instrument measurement data, 2) Xray CT scan Axial Image data 3) Split Section Image data 4) Cutting Image data 5) Downhole Measurement data 6) Well logging data. The data in each group can be obtained directly through Internet. The data for the group (1) is provided by the land J-CORES data distribution system and posted in Public J-CORES Data Center (<http://sio7.jamstec.go.jp/j-cores.data/>) that covers not only Chikyu expedition science data but also updated curation and sample data for the legacy cores transferred to Kochi Core Center as well as Metadata files in ISO019139 XML for SEDIS Phase I implementation.

There are still many area of improvement in our system. For example we do not have data search function either in J-CORES aboard Chikyu or Public J-CORES Data Center for on-line data distribution. CompositeLogViewer (data graphical visualization tool) is only available when the researches are aboard Chikyu but not after they get off D/V Chikyu. It may not be possible to download raw data of X-ray CT scan Axial image file in dicom format unless you have very fast Internet access and Tbytes HDD and enough time. We are now working on the following three subjects.

- 1.Compliance with SEDIS III
- 2.Providing Web J-CORES
- 3.Establish Virtual Core Library

We believe in that putting them in practice is useful to overcome the issues and improve the system. I am going to explain the detail of each subject and its status instead of my conclusion.

Keywords: Chikyu, J-CORES, XCT, core measurements, IODP, SEDIS