

Downhole Logging Data Acquisition and Integration: Changing Tactics in the IODP and Its Future Direction

MOE, Kyaw¹ ; KIDO, Yukari^{1*} ; SANADA, Yoshinori¹
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¹CDEX-JAMSTEC

¹CDEX-JAMSTEC

Since the initiation of IODP in 2003, three drilling platforms, Chikyu, JOIDES Resolution (JR) and Mission Specific Platform (MSP), operated at various environments of global locations using varieties of new techniques. Overcoming many difficulties, longest serving ship JR reached the maximum time in operations with 32 expeditions even ship was modified in dock for 38 months, new riser ship Chikyu with 13 expeditions, and MSP with 5 expeditions. Varying in their capabilities, JR expeditions covered most global areas and research themes where MSP and Chikyu expeditions were targeted to the most challenging and extreme environments. Further addition of riser technology and very shallow locations for MSP brought wider choice of new logging and coring tools, rigfloor parameter, and very high-resolution slim-hole logging tools.

In the downhole logging data acquisition, JR continued her standard set of basic wireline logging with best cost and performance factor but MSP and Chikyu were used expedition/project specific measurements with higher cost and better technology. For the new challenges in the various IODP expeditions, things changed from the previous program were new tools and better measurements, data integration applications and facilities, increased staffing for science support.

Those new techniques covering laboratory and downhole measurements, extended widely in measurement types and improved their capability and efficiency in data integration and onsite decision making. All these large volume of data with wider choice of software further enhanced the integrated studies like cuttings/core-log-seismic integration for the very deep-riser holes.

In this talk, downhole measurements data acquisition and wider data integration in the IODP will be summarized, operational-technical-scientific highlights and lessons will be reviewed, and future direction will be discussed.

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