

Core quantity and quality for the IODP sciences

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Core quantity and quality are essential issues to maximize IODP sciences. Although core recovery rate has been improved since DSDP/ODP era, there are still significant problems for the specific science targets and specific lithologies, such as Cretaceous chert/shale interbeds, glacial sediments in high-latitude area, coral reef limestone, unconsolidated sand layers, basaltic oceanic crust, fault rocks etc. Core quality issues are also significant problems and are divided in to four categories: (1) core disturbance, (2) contaminations, (3) magnetic properties, and (4) core orientation. Enhanced core recovery and coring without disturbance should be considered for IODP phase II. Engineering development Panel and Scientific measurement Panel are investigating required coring technologies, including but not limited to, update of ADCB, MDCB, XCB, and RCB. Prioritization of those coring technologies should be linked to the specific scientific demands. This paper summarizes the critical scientific needs from various scientific fields and identifies the possible direction of coring technology developments.