

Introduction of the activities of the Mantle Drilling Working Group (J-DESC)

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Mantle drilling is a long-term expectation of the scientific drilling community in Japan and the world. In the current IODP Science Plan, the necessity of mantle drilling in ocean science drilling is described to clarify "what is the composition, structure, and dynamics of the Earth's upper mantle. In addition, the 2050 Science Framework, which outlines the direction of the international scientific drilling program from 2024 onward, includes "Probing the Deep Earth" as one of the items that the scientific ocean drilling community should achieve by 2050, and The Framework states the importance of human penetration of the oceanic crust and the upper mantle, as well as the importance of an integrated understanding of the Earth system through mantle drilling. In order to achieve scientific results through the mantle drilling, the initiative of Japan, which owns the deep drilling vessel "Chikyu", the only scientific drilling platform that can do so, is strongly expected. Proposals "M2M (Mohole to Mantle)" and "Drilling Mature Oceanic Crust on North Arch off Hawaii (951-Full)" have been submitted by the international scientific community. In order to realize the first mantle drilling in the history of mankind, it is essential to further develop the plan based on these proposals, to strengthen the collaboration with the international scientific community, and to collaborate with the technical study and project management of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), which will be the implementing agency.

In light of the above situation, the Mantle Drilling Working Group was established in September 2020 under the IODP Subcommittee of the J-DESC with the aim of establishing a structure to carry out specific activities for the implementation of mantle drilling and to promote mutual understanding and collaboration among researchers and engineers. This presentation will introduce the activities of the working group, including online open seminars organized by the working group.

