International research team to bore into tectonic plates off Japan

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An international research team will use the deep-sea drilling vessel Chikyu to bore into an area where two tectonic plates meet to study the movements of the plates that caused the Great East Japan Earthquake, according to sources.

The vessel will drill about 1,000 meters (1,093 yards) through the seabed in waters off Miyagi Prefecture in an area where there was the greatest tectonic movement at the time of the March 11 earthquake, and bedrock samples will be examined. The seabed is from 6,000 to 7,000 meters (3.72 to 4.35 miles) below sea level.

The research, the first of its kind, will be conducted next spring at the earliest. The team hopes the study will be the first step in revealing the mechanics of the magnitude-9 earthquake.

The Japan Agency for Marine-Earth Science and Technology, the owner of the Chikyu, will participate in the research representing Japan.

The research will be one of the projects conducted by the Integrated Ocean Drilling Program, which comprises Japan, the United States and 22 other countries.

According to scientists, the tectonic plates are believed to have moved more than 20 meters (21.87 yards) near the Japan Trench. However, it is unknown why they moved so much.

Some scientists pointed to the possibility that faults branching off from the boundary of the plates also moved, intensifying the tsunami.

The research team believes frictional heat remains at the boundary of the plates and the faults for one or two years after the plates move. The research team will measure the temperature of the rock and study any deformity caused by heat to learn which faults moved at the time of the earthquake. The team will also study how far the boundary and faults moved, and the speed of the movement.

It will also analyze how stable the plates were before the March 11 earthquake.

According to Hans Larsen, vice president of the Integrated Ocean Drilling Program, various data have been accumulated since the earthquake, such as earthquake waves and crustal movements.

Larsen said it is important to study the faults and the boundary of the plates soon after the earthquake. If the study determines why the boundary moved so much, it would contribute to discovering how giant earthquakes unfold, he said.