

Research team finds undersea earthquake 'mountains'

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Undersea mountains several thousand meters high have been discovered subducted under a tectonic plate that constitutes the sea bottom off the Boso Peninsula in the southeastern part of the Kanto region, according to a survey by the Japan Agency for Marine-Earth Science and Technology.

The agency expects the result of the survey will provide important insights into the mechanism that creates the type of massive earthquakes that it is feared will hit the Tokyo metropolitan area and the south Kanto region in the future.

Tectonic plates colliding under the sea bottom off the Boso Peninsula can cause massive earthquakes in the Kanto region.

From April to May, the agency conducted research on the bedrock under the sea bottom in a 150-kilometer area off the Boso Peninsula stretching from southwest to northeast with the Kairei, a deep sea research ship.

Technology aboard the ship uses sonic waves to measure the sea bottom.

The agency found mounds measuring several thousand meters in height on sea floor in areas on the Philippine Sea plate, which subducts under the North American plate off the Boso Peninsula.

At least two large mounds were found. The agency believes they once were undersea mountains or islands that appeared in the aftermath of volcanic activity that created the Ogasawara islets in Izu, Shizuoka

Prefecture.

Such mountains or other obstructions on the surface of plates can cause violent friction when they subduct under another plate, and have the potential to cause massive earthquakes.

It is believed that undersea mountain ranges have subducted under plates many times throughout Earth's history. However, conditions after these subductions have not been observed until recently.

The area where the undersea mountains were discovered is close to the focus of the largest aftershock that occurred off Katsuura, Chiba Prefecture, the day after the Great Kanto Earthquake on Sept. 1, 1923. Similar phenomena have been observed off Shizuoka Prefecture, south of the presumed focus of a major earthquake expected to strike the Tokai region in the future.

The agency plans to use the results to help unravel the mechanism of a potential major inland earthquake expected to hit Tokyo. It plans to use Chikyu, another research ship, to conduct drilling research in the same area the agency's previous research was conducted.

"We'll try to dissect how the structure of plate interfaces is related to massive earthquakes in the Kanto region and utilize the results for future disaster prevention measures," said Seiichi Miura, head of the agency's research on the phenomenon.

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