

Urgent observation of seafloor crustal movement and installation of seafloor seismographs in preparation for future earthquakes off the east coast of Aomori Prefecture

*Takane Hori¹, Takeshi Iinuma¹, Fumiaki Tomita¹, Motoyuki Kido², Chie Honsho³, Ryosuke Azuma³, Chi-Hsien Tang³, Yusaku Ohta³, Ryoko Nakata³, Ryota Hino³, Masanao Shinohara⁴, Shuichi Kodaira¹

1. Research Institute for Marine Geodynamics, Japan Agency for Marine-Earth Science and Technology, 2. International Research Institute of Disaster Science, 3. Graduate School of Science, Tohoku University, 4. Earthquake Research Institute, The University of Tokyo

A series of M5-class earthquakes occurred from November 6 to 7, 2020 off the coast of Aomori Prefecture, which is also in the vicinity of the rupture initiation point and slip area of the 1968 Tokachi-oki earthquake (Mw 8.2) and that of the 1994 Sanriku far offshore earthquake (Mw 7.7), raising concerns about the possibility of foreshocks. In addition, considering the fact that the 2011 off the Pacific coast of Tohoku earthquake was observed, it is necessary to understand and evaluate the state of fault slip and interplate coupling near the source area in order to discuss whether this activity will lead to the next M8 class earthquake. Therefore, it is necessary to obtain the crustal movement including slow slip with the highest possible temporal and spatial resolution. For this reason, we deployed a wave glider for observing seafloor crustal movement to acquire data at existing observation points, and conducted emergency observations by sharing a voyage scheduled for another purpose from the end of November in order to establish a new seafloor crustal movement observation point as soon as possible. In addition, the positioning of the newly established submarine crustal deformation observation station and the installation of ocean bottom seismographs to fill the gaps in the S-net observation network were carried out in February using a chartered vessel.