

Performance evaluation of new seafloor geodetic observation system based on AUV technology

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Institute of Industrial Science, University of Tokyo has started a project to develop the fundamental technologies for constructing new-generation seafloor geodetic observation system in cooperation with Hydrographic and Oceanographic Department, Japan Coast Guard.

The current observational method using research vessel cannot help being subjected to annual cruise schedule of research vessels. It has been difficult for us to change the cruise schedule as appropriate according to weather and sea condition, GPS satellite distribution and so on.

The new system, which we are developing, based on AUV technology will give us opportunities for observation with choosing favorable conditions of sea and GPS satellite distribution, much more frequent observations and flexible planning of observation in response to sudden geodetic events. Trial models of the sea surface and seafloor units were finished. We conducted several performance evaluation experiments in the sea and dam site, in order to bring the observation system to completion.

There was no trial that we had fully satisfactory data, in quality and quantity, which could be compared with data derived from the current observation using research vessel, because of the troubles on the system or the bad sea conditions, though we had sea and dam-site trials six times. Then it is difficult for us to discuss the positioning accuracy, which the new system has, in detail. We have derived the information from the observed data under our hands in order to improve the constituent elements of the system.

We will report the current performance of new seafloor geodetic observation system and the current status of the development in this talk.