

Study of the ocean physical data acquisition before and after the earthquake using the Argo float

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Tohoku region Pacific Ocean earthquake that occurred on March 11, 2011, resulted in extensive damage to vast areas ranging from the Tohoku to Kanto. However, at the time of an earthquake occurrence, the research vessel which was researching about marine in earthquake hypocenter area adjacent seas is not confirmed, and ocean physical data like water temperature or salinity including ocean sound speed data required for echo sounder etc. cannot be acquired. Therefore, paying attention to the ocean automatic profiling system (Argo system) in this study. Currently, Argo float has deployed about 3600 units in all the world ocean. Thus, it does not require large-scale observation system by research ship or tethered buoy. And we became able to grasp the marine structure of the scale of the earth immediately and easily.

In this study, tried the acquisition of ocean physical data from the Argo data (water temperature, salinity, pressure) which unfolded before and after an earthquake near the focal area. As a result, In this earthquakes associated with the huge tsunami, rapid water temperature change has been confirmed in the vicinity of the sea after the earthquake.

In addition, we analyzed about Sumatra offing earthquake accompanied by a similar huge Tsunami. Data was acquired from two Argo floats which was observation in the seismic center area of ocean in 2005. As a result, a few days after the tsunami occurrence, the thing by which the ocean physical data indicates a profile different from usual was suggested. Thus, to variations in sudden marine environment, Argo system has been shown to be one of the effective database.

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