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Direct Measurements of the Kuroshio in the East Cchina Sea(III) ——A Study of System for Measuring Heat and Momentum Fluxes of the Ocean (1st Report)——

By

Shinjiro MIZUNO, Kazuo KAWATATE, Arata KANEKO and Tomoki NAGAHAMA

This report describes the results of an array of 3 current-meter moorings made in the East China Sea for 8 months. We have first succeeded in acquiring current data measured by an acoustic Doppler current profiler (ADCP). Using the data of the 3 current-meter moorings the volume transport of the Kuroshio is estimated as follows:

$$T = (23 \pm 3) \times 10^6 (\mathrm{m}^3/\mathrm{s}),$$

where the width of the Kuroshio is taken to be 88 km.

Rotary power spectral analysis of the current data was made to examine the position of the Kuroshio on the seasonal time scale using 2.5 year's current data measured in the East China Sea. The spectral analysis showed that the Kuroshio axis in the East China Sea tends to detach from the continental slope eastward in the spring season when the Kuroshio axis is likely to be unstable near the continental slope. In spring 1988, when the instability of the Kuroshio axis occurred, the transport of the Kuroshio decreased by about 10% of the average transport.

Motion Analysis of Articulated Tower in Regular Waves and Current

By Hiroyuki ARAKAWA

In order to estimate the motion of the articulated tower with cylindrical float in regular waves and current, an approximate calculation method considering thce constant angle of inclinatin was worked out.