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Survey by Interview Method for Gathering of Fishes
around Natural and Man-made Reefs (1)

Hearings from Fishermen on the Northern Coast of Kyushu Island

By Susum INOUE

In order to arrive at a comprehensive understanding for gathering of fishes around natural and man-made reefs (fishing banks), a survey by oral method (*question-and-answer*) was carried out with 28 interviews for total of 57 fishermen on the northern coast of Kyushu Island, with a view to collecting practical informations and empirical knowledges of the problem. The whole process of these conversations was recorded in tapes, and through reproducing the sound of all tapes in series, we could pick up by the inductive method some relevant points existing in the nature of gathering fishes.

Above all, the fact that fishes gather on the upstream side of the tidal current around a reef, which had been pointed out by some authors previously, was established unanimously out of these hearings.

In Appendices 1 and 2, are shown, respectively, the *scenario* (questionnaire) for the interviews and the classified bibliography related to fishing banks.

Low Frequency Oscillation of Turbulent Shear Layers

By Sadatoshi TANEDA, Hajime AMAMOTO and Koji ISHII

Turbulent boundary layers and turbulent wakes are studied by means of flow visualization methods. It is found that a large scale periodic structure exists in turbulent shear layers and the length scale of the periodic structure is governed by the mean velocity profile.

Observations of the Kuroshio by Means of Mooring Buoy Systems

By Fukuzo TASAI, Toshiro SUHARA, Hisashi MITSUYASU,
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We, the ocean research group of Research Institute for Applied Mechanics, Kyushu University, have been involved since 1978 in the development of buoy systems for the objectives of studying the current and the waves in the Kuroshio as a strong current, under a grant from the Ministry of Education and Culture, Japan. This paper gives a full account of the buoy systems and the results of the oceanographical measurements of the Kuroshio done up to the present with making use of those systems. The measurements for the study of the currents and the waves in the Kuroshio are scheduled to be continued until 1982 by the same group.

Chapters 1 and 2 contain a presentation of the academic and technical objectives of the research work reported in this paper, the developing sequences of the buoy systems, and the contributions of the individual members of the ocean research group as well as a summary of several long-range research projects as a background of this work, which have been conducted for years by the Research Institute.

Chapters 3 and 4 concern the design of a subsurface mooring buoy system for the collection of data on the vertical distributions of the current velocity, the current direction and the temperature of the seawater as well as the design of a surface buoy system for the acquisition of the meteorological data and the wave data in the Kuroshio. In both chapters we outline the design requirements for those buoy systems, various research works done to provide the systems meeting those requirements, in situ tests, the study of the more efficient installation and retrieval, and the instrumentations of the systems.

Those two buoy systems were installed in the Kuroshio at the location to the south of the Tanegashima island to collect the oceanographical and the meteorological data.

In Chapter 5 we summarize the results of those in situ measurements.

Chapter 6 is a summary of the measurements of turbidity in waters at the same location as the buoy systems were installed.

In conclusion several remarks are presented in Chapter 7 of the design of mooring buoy systems for the acquisition of the oceanographical and the

meteorological data in a strong current. The in situ measurements of the current velocity and the current direction were successfully conducted all through a month. It may be concluded we can acquire with our subsurface mooring buoy systems the data sufficient for the determination of the vertical profile of the current velocity in the Kuroshio. However a surface buoy of our surface buoy system was drifted and lost while it was installed and we could collect neither the meteorological data nor the wave data with it.

As a result of a systematic developing process carried out in this work we are now able to design the better buoy systems to be used for the oceanographical researches of the Kuroshio with a few improvements in, for example, the connection of Kevlar cable and the mooring line of a surface buoy system to avoid the cutting off by ships passing the installation site.