

SCOR WORKING GROUP 34
INTERNAL DYNAMICS OF THE OCEAN

Report from Chairman - A. Robinson

I should like to report to the Chairman and members of the SCOR Executive Committee on WG 34 - Internal Dynamics of the Ocean, (recently renamed) with the expanded terms of reference

- a) "To identify the critical scientific problems of the internal dynamics of the ocean and to suggest the most appropriate ways to study them;"
- b) "to advise on the design of mid ocean dynamics experiments."

a) Critical Problems of Internal Dynamics

Some clarification of this aspect of the terms of reference may be desirable for the Chairman from the Executive Committee, if the EC wishes immediate initiation of activity here. Otherwise WG 34 stands ready to consult with SCOR and others as necessary, but plans to discuss this aspect in general, no later than at a meeting, which I hope to arrange in Grenoble in late summer at the time of the IAMAP/IAPSO Symposium.

b) Mid Ocean Dynamics Experiments

The next major field experiment, POLYMODE, which was endorsed by SCOR at the recent Melbourne meeting (Proceeding Vol. 10 p. 11) will take place during 1976-1977. Agreement on overall scientific objectives and on the pooling of resources was reached between US and USSR Scientists meeting in Massachusetts in late August (Report dated 30 August 1974) under the auspices of the US-USSR bilateral agreement on Cooperative Studies of the World Ocean. The main scientific objectives are:

- i) A kinematical and descriptive study of the eddy field including eddy-eddy interactions, on significantly longer time and larger space scales than now available;
- ii) The determination of local dynamical balances in a typical mid-oceanic region;
- iii) The determination of contributions to the eddy transports of momentum, heat, and energy and their meridional distribution, and of the interaction of eddies with the mean circulation;
- iv) The exploration of mechanisms of production, transformation, and dissipation of eddy energy;
- v) The development and testing of numerical models of oceanic mesoscale and of the general ocean circulation including (explicitly and implicitly) the mesoscale eddies for the purposes of forecasting, process investigation, and coupling to atmospheric models.

Planning and Coordination of the fully international POLYMODE Experiment should take place within WG 34. To accomplish this effectively will require some additional membership of WG 34, such additional members to be nominated by participating national POLYMODE organizing groups and endorsed by the SCOR Executive. It may be essential to hold an International POLYMODE scientific planning meeting of WG 34 in the spring or early summer to meet scheduling deadlines.