

**SCOR WORKING GROUP 57
COASTAL AND ESTUARINE REGIMES**

Report of Chairman: J.B. Matthews

Because this is the first official report to the SCOR Executive a brief description of the group and its goals will be given before reporting on its activities.

1. History and terms of reference

Working Group 57, Coastal and Estuarine Regimes was originally sponsored by IAPSO and is now co-sponsored by IAPSO, SCOR, ECOR and UNESCO. A sub-Working Group on Numerical Models of Estuaries and Coastal Seas has been formed and is considered part of the full Working Group.

The terms of reference of the Group are:—

To promote the co-ordination of the physical aspects of research on estuaries, coastal areas and shelf seas. In particular, special efforts should be made:

- a) to encourage liaison between physical oceanographers and those studying sediment transport phenomenon, and
- b) to relate numerical models with observational programmes.

2. Membership

The members of the Working Group are:—

Chairman, Dr J.B. Matthews, USA; Professor Ain Aitsam, USSR; Professor Herman G. Gade, Norway; Dr Christopher N.K. Mooers, USA; Dr Jorg Imberger, USA; Ir H.A. Ferguson, Netherlands (ECOR representative); Professor H. Postma, Netherlands, (UNESCO representative); Dr N.S. Heaps, UK (Chairman of the Sub-Working Group on Numerical Models).

SCOR Executive Committee Reporter, Professor H. Postma.

The members of the sub-Working Group on Numerical Models on coastal seas and estuaries are:—

Dr N.S. Heaps, Chairman; Dr J.B. Matthews; Dr J.J. Voogt, Netherlands; Dr Taivo Laevastu, USA; Professor W. Hansen, FRG; Dr B.J. Noye, Australia.

3. Overall Programme

The Working Group has met only once at the organizational meeting at the IUGG General Assembly in Grenoble in September 1975. Chairman Heaps reports that his sub-Working Group has been unsuccessful in attempting to hold a meeting in conjunction with the 1976 Joint Oceanographic Assembly in Edinburgh but has conducted business by correspondence. The full Working Group and the sub group have not yet met together. All members of both groups have expressed the need to meet together and this report includes a formal request for funds to support the first full meeting of the group.

Activities of the group have been conducted by correspondence and during chance meetings of two or more group members. It has been decided that the best way to achieve our objectives is via the sponsorship or co-sponsorship of conferences on topics related to our goals. To date three conferences or sessions at conferences have been proposed. These are:—

- (i) Co-sponsorship of the Sixteenth Coastal Engineering Conference in Hamburg, Germany, 28 August – 1 September 1978.
- (ii) Sessions at the IUGG General Assembly in Canberra, Australia, December 1979.
- (iii) Co-sponsorship of a multi-disciplinary conference on estuaries and coastal seas in 1982, possibly as part of the proposed Joint Oceanographic Assembly.

4. Coastal Engineering Conference, Hamburg 1978

Planning for the co-sponsorship of the Coastal Engineering Conference is in the advanced stages. Co-sponsorship of the conference is believed to satisfy both major goals listed in our terms of reference. The major organization of the sessions is being undertaken by the German Organising Committee. Our role is to suggest names of chairmen for sessions on subjects identified as being of special interest to our group, to review the abstracts of papers submitted to these sessions, and to run the sessions.

Topics of particular interest to the CER Working Group have been identified as follows:

- (i) Three dimensional modeling in estuaries and seas
- (ii) Sediment transport processes
- (iii) Exchange processes in estuaries and seas
- (iv) Transient circulation over variable topography in density stratified waters
- (v) Role of fronts
- (vi) Instrumentation
- (vii) Air-sea interaction
- (viii) Wave-current interaction
- (ix) Estuarine and shelf interaction
- (x) Ecological modelling

Abstracts of papers for presentation at the conference, submitted by 15 October 1977, will be reviewed by our reviewers and selected papers will be printed in the proceedings of the conference. An announcement has been accepted for publication in the June issue of EOS, Transactions of the American Geophysical Union in which our co-sponsorship is announced and a call for papers issued. It is believed that EOS reaches a large audience world-wide. Final details of the meeting sessions will be worked out with the German Organizing Committee at the proposed meeting of the Working Group.

5. IUGG General Assembly, Canberra, Australia, December 1979

The group has had considerable discussion as to the overlap of the IUGG meeting with the Hamburg meeting. It is generally agreed that the two meetings serve different purposes and are linked by our overall strategy. The Hamburg meeting is designed to bring physical oceanographers into the coastal engineering community and is a step toward the IUGG General Assembly. It is unfortunate that details of the sessions for the General Assembly need to be finalized before the Hamburg meeting is completed but IAPSO have informed us that details of the proposed symposia, the number of sessions and the names of the convenor must be submitted to IUGG by 1 June 1977.

We have identified the programme for IUGG as follows:—

Symposium on Estuaries, coastal areas and shelf areas

Session 1. Numerical models relating to observational programmes.

Session 2. Current structure: space and time variability, sediment transport phenomena.

Poster Session Topics included in sessions 1. and 2.

Convenors for these suggested sessions have not been finalized at this time but will probably be provided from within the Working Group.

6. Estuarine and Coastal Conference 1982

It has been proposed that the SCOR Executive be approached to consider the merits and feasibility of holding a multi-disciplinary assembly on estuaries and coastal seas. This has been proposed because the group, being well aware of the interdisciplinary nature of estuarine and coastal processes, has perceived the tendency for estuarine and coastal problems to be considered as ecological entities. It is believed that by 1982 it will be opportune to bring together in one assembly the physical oceanographers, aquatic biologists, coastal engineers, sedimentologists, chemical oceanographers, meteorologists and numerical modellers who are working on estuarine and coastal problems.

This type of multi-disciplinary meeting will need very careful planning and the cooperation of the international bodies which represent the various disciplines. To be successful in such a venture will be largely dependent upon getting the experts involved. Our group recognizes that this is not a trivial problem. It will also be necessary to limit the range of topics to be discussed so that, while stressing the interdisciplinary nature of the work, one will avoid diluting the specialist contributions.

Our group will be willing to provide the physical oceanographic (including numerical modelling) expertise. We would also expect to share in the responsibility for organizing the meeting and in editing contributions if it is decided to publish proceedings. It is hoped that through SCOR and UNESCO enquiries can be made of the appropriate international bodies.

Because of the extensive amount of expertise resident there in all aspects of coastal and estuarine topics, it is tentatively suggested that the proposed conference be held in the Netherlands. However, it has also been suggested that such a symposium be held in conjunction with the next Joint Oceanographic Assembly. We do not at this time know the proposed venue for the Assembly but our group would be very happy to contribute to the next JOA. This matter is respectfully submitted for consideration by the SCOR Executive.

7. Funding for the Working Group Meeting

It is proposed to call a full meeting of the Working Group and subgroup in the fall of 1977. We have been looking for conferences which some of our group members were planning to attend so that we might append our meeting and thereby reduce costs. We have had no success in finding a meeting to which more than one of our members are planning to contribute. Consequently the request for funds must cover almost the total anticipated travel and subsistence cost for our Working Group.

The following meetings have been considered as possible vehicles for our group meeting:—

- (i) The Ninth International Liege Colloquium on Ocean Hydrodynamics 'Estuaries', 2 – 6 May 1977.
- (ii) The Port and Ocean Engineering under Arctic Conditions Conference, St Johns, Newfoundland, Canada, 26 - 30 September 1977.
- (iii) The 17th International Congress of the International Association for Hydraulics Research, Baden Baden, Germany, 15-19 August 1977.

The Liege Conference is too early for us and only one group member indicated planned attendance.

The POAC Conference would only be attractive to North American group members and only one member has indicated possible attendance. However in a poll of the group the weeks around the POAC Conference 19 – 22 September or 3 – 7 October are generally agreeable for a meeting in Hamburg with the German Organizing Committee. A small preference for the later date was indicated.

The Baden Baden Conference is attractive because the German Organizing Committee plans to meet there and because the conference will be attended by many ocean engineers. Only one of our group has indicated planned attendance. This Conference has only just been brought to our attention and there has been no time to poll the group for opinions. It is known that at least two group members have field programmes which might be in conflict with this meeting.