



Canadian Meteorological  
and Oceanographic  
Society

La Société Canadienne  
de Météorologie et  
d'Océanographie

# C.M.O.S. NEWSLETTER / NOUVELLES S.C.M.O.

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1985

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## FROM THE PRESIDENT'S DESK

As the 1985 Congress approaches, preparations by the Montréal Local Arrangements Committee are in full swing and it promises to be a very interesting and rewarding meeting. We hope to welcome numerous friends from across the border as our Congress is followed (in the same location) by the American Meteorological Society which is sponsoring the Seventh Conference on Numerical Weather Prediction and the Second International Conference on the Aviation Weather System. I have recently been informed by the Acting Assistant Deputy Minister that the Atmospheric Environment Service will be providing tours of the Canadian Meteorological Centre in Dorval, including audio-visual and slide presentations of their computing facilities.

A considerable part of my efforts lately has been devoted to the revision of the CMOS Constitution and By-Laws. We have benefitted from an excellent working draft, prepared by Ed Lozowski and his "Grandfather" Committee. The intention is to review the proposed new CMOS Constitution and By-Laws at Council and subsequently by the membership. The revision will streamline CMOS operations and permit it to meet today's requirements and challenges. Much thinking has gone into it for the future of Special Interest Groups which up to now have been only established on a trial basis.

One special Interest Group has been particularly on my mind namely Operational Meteorology (SIGMET), an area where CMOS can and should do more work so as to encourage greater participation by operational meteorologists in its activities. To this end I have taken part in discussions with AES Field Service Directorate officials, and, as a result, CMOS has been asked to organize a Workshop of Operational Meteorology jointly sponsored by AES / CMOS later this year.

Another activity I have been doing my best is to encourage the re-activation of our Membership Committee and its plans for a membership campaign. The groundwork for such a campaign has now been laid by the new Chairman of the Committee, Bill Richards, and I hope that all Centres will actively support his efforts.

The recent issues of Chinook look like real winners to me and all those involved in preparing the magazine deserves high praise and best wishes in keeping the presses running.

Looking forward to seeing you at the 1985 CMOS Congress in Montréal.

Dr. N.J. Campbell

## The CMOS Archive

The CMOS Archive has now been sorted and about 25 transfer cases occupy 5 metres or so of shelf space in the Canadian Climate Centre at AES Downsview. The collection covers the entire period of existence of the Society from 1940 to 1984 but there are gaps and great differences in the amount of material available for specific years. The collection is neither catalogued nor indexed but filed chronologically by presidential regimes. In addition,

considerable material from recent editors of Atmosphere-Ocean has been filed chronologically.

The transfer cases holding the archive are labelled by periods of years. The first case, for example, covers the period 1940 to 1949. In each case are folders labelled: 1) Administration, covering correspondence regarding policy, relationship with the Royal Meteorological Society, prizes, etc., 2) By-laws and Annual Reports, 3) Meetings and, 4) Membership lists. In addition, folders containing information on specific subjects such as the 1953 Toronto Conference have been retained as separate files. Also bound files such as the minutes of the Scientific Committee from 1961 to 1977 have been retained as supplied. Personal files of Executive Committee members, such as those provided by Dr. Lozowski, have been retained in their original format.

The archive is by no means complete for the 45 years of the Societies existence. Few records are available for the first few years, 1940-1947, and gaps exist, for example, for 1956 to 1958 and for 1963 to 1966. The longest and most serious gap is from 1970 to 1976. No correspondence files are available for recent years (i.e. since 1981) \* but minutes of meetings for the past few years have been received and filed.

On the other hand excellent sets of documents have been received from such past presidents as Dr. Hay, Dr. Maybank and Dr. Lozowski. Mr. Mann, formerly editor of the Newsletter, has provided a bound set of that periodical covering the period 1972 to 1981 and Dr. Hay has supplied a set of the Canadian Branch publications from 1950 to 1958.

Although the first issue of Atmosphere-Ocean was published in 1963, no archival material is available prior to 1970 \*\*. The Atmosphere-Ocean archive includes administrative documents from 1970 to 1979 and a file of unpublished papers from 1973 to 1982.

Much credit is due to those officers and former officers of the Society who have provided the archivist with their files. It is hoped that this brief report may spark others to unearth and provide additional material to make the archive as complete as possible. The Society must be grateful to AES for providing space to house the archive. Further, during the summer of 1984, AES provided assistance in organizing the archive in the person of Miss Karen Yarmol, a summer student assistant employed for the History of Canadian Meteorology Project.

Members of the Society who might wish to use the CMOS Archive should contact the writer at (416) 667-4889 or David Phillips at (416) 667-4612.

M.K. Thomas  
CMOS Archivist

## Notes by the Executive Director

\* A CMOS central filing system was started during 1982. Current files are kept by the Executive Director, and, when no longer current, will be transferred to the CMOS Archive.

\*\* Back issues of most issues of Atmosphere-Ocean, Climatological Bulletin and Chinook are available at the CMOS office, although often in limited numbers only. Arrangements will be made with the CMOS Archivist to ensure that his archive is being made as complete as possible in this respect.

## NOTICE TO ALL MEMBERS

In accordance with By-Law 10, Meetings, of the Canadian Meteorological and Oceanographic Society, I am giving notice that the Annual General Meeting will be held on Wednesday, June 12, 1985 at 7:30 P.M. at the Université du Québec à Montréal (UQAM), Alfred Laliberté Hall, 405 east, St-Catherine Street, Montréal. This meeting will include those items listed under By-Law 10(d) which reads:

"A General Meeting, to be called the Annual General Meeting, shall be held each year, on a day and at an hour to be determined by Council, to receive the reports of Council, the auditor or auditors, and the ballot counters, to establish the fees for the next calendar year, to discuss and determine such questions as may be proposed relative to the affairs of the Society, to appoint an auditor or auditors for the ensuing year, and to install the Council elected for the ensuing year."

The agenda for the Annual General Meeting will be published in the Annual Review which will be mailed to all members before the AGM.

## AVIS A TOUS LES MEMBRES

Conformément au Règlement 10 de la Société de météorologie et d'océanographie, je donne l'avis que l'Assemblée générale annuelle aura lieu mercredi, le 12 juin 1985 à l'Université du Québec à Montréal (UQAM) dans la salle Alfred Laliberté, 405, rue Ste-Catherine est, Montréal (Québec), à 19h30. Cette assemblée examinera les points contenus dans l'Article 10(d) qui se lit:

"Une Assemblée générale, appelée l'Assemblée générale annuelle, est tenue chaque année, au jour et à l'heure déterminés par le Conseil d'administration, afin d'approuver le procès verbal de l'Assemblée générale annuelle précédente, de prendre connaissance des rapports du Conseil d'administration, du (des) vérificateur(s) et des scrutateurs, de fixer les montants des cotisations pour la prochaine année civile, de discuter et de prendre des décisions sur les questions concernant les affaires de la Société, de choisir un (des) vérificateur(s) pour l'année suivante, et de procéder à l'investiture des administrateurs élus pour l'année suivante."

L'ordre du jour pour l'Assemblée générale annuelle sera publié dans la Revue générale qui sera posté à tous les membres avant l'AGA.

## NOTICE TO ALL MEMBERS / AVIS A TOUS LES MEMBRES

In accordance with By-Law 4(c) of the Canadian Meteorological and Oceanographic Society, I am providing you with:

- A) The list of members of the current Council;
- B) The list of nominations for 1985/86 made by the Nominating Committee;
- C) A copy of By-Law 4(d).

The Council of the Canadian Meteorological and Oceanographic Society for 1984/85 consists of:

President  
Vice-President  
Treasurer  
Corresponding Secretary  
Recording Secretary  
Councillors-at-large

Local Centre Chairmen

Auditor

Dr. Neil J. Campbell  
Dr. Stuart D. Smith  
Mr. Ken B. Yuen  
Mr. Robert Jones  
Mr. Rick G. Lawford  
Mr. J.G. Cantin  
Dr. Barry Goodison  
Dr. Steve Calvert  
Elected locally /  
Elus localement  
Hodgson, Morrissey, Maheu  
et Noiseux Chartered  
Accountants

Selon les termes de l'Article 4(c) des Règlements de la Société canadienne de météorologie et d'océanographie, je vous fais parvenir:

- A) La liste des membres du Conseil en cours;
- B) La liste des mises en candidature pour 1985-1986 telle que rédigée par le Comité des mises en candidature;
- C) Une copie de l'Article 4(d).

Le Conseil de la Société canadienne de météorologie et d'océanographie pour 1984-1985 se compose comme suit:

Président  
Vice-Président  
Trésorier  
Secrétaire correspondant  
Secrétaire d'Assemblée  
Conseillers

Présidents régionaux

Vérificateur

### Nominations For Council for 1985/86:

President  
Vice-President  
Treasurer  
Corresponding Secretary  
Recording Secretary  
Councillors-at-large

Local Centre Chairman

Auditor

Dr. Stuart D. Smith  
Mr. William S. Appleby  
Mr. J.M. Raymond St. Pierre  
Dr. John W. Loder  
Mr. C. Fraser McNeil  
Mr. Ronald F. Hopkinson  
Mr. Robert Jones  
Dr. Edward P. Lozowski  
Elected locally /  
Elus localement  
Touche Ross & Co.

Président  
Vice-Président  
Trésorier  
Secrétaire correspondant  
Secrétaire d'Assemblée  
Conseillers

Présidents Régionaux

Vérificateur

### Mises en Candidature pour le Conseil pour 1985-1986:

### By-Law 4(d)

Nominations (in addition to those made by the Nominating Committee) will be accepted by the Recording Secretary up to the last day of March, provided -

- I) That the nominee is eligible for the office for which he is nominated,
- II) That the nominee acknowledges his willingness to accept office if elected by signing the nomination, and

### Article 4(d)

Les mises en candidature (en plus de celles proposées par le Comité des mises en candidature) seront acceptées par le Secrétaire d'Assemblée jusqu'au dernier jour de mars, pourvu -

- I) Que le candidat soit éligible au poste pour lequel il est présenté,
- II) Que le candidat confirme son intention d'accepter le poste advenant son élection en signant l'acte de mise en candidature, et

III) That the nomination is signed by four members.

Nominations should be sent to the Recording Secretary at the following address:

Canadian Meteorological and Oceanographic Society  
Attn: Recording Secretary  
151 Slater, suite 805  
Ottawa, Ontario.  
K1P 5H3

If the deadline is unlikely to be met by mail, please contact the Corresponding Secretary by telephone.

Robert Jones  
Corresponding Secretary / Secrétaire correspondant  
(613) 994-5406

III) Que l'acte de mise en candidature soit signé.

Les mises en candidature devraient être envoyées au Secrétaire d'Assemblée à l'adresse suivante:

Si vous craignez que le courrier ne puisse nous atteindre avant la date de l'échéance, veuillez contacter le le Secrétaire correspondant par téléphone.

#### NEWS FROM HEADQUARTERS

##### EDITORIAL POLICY

The CMOS NEWSLETTER is the principal medium by which Society members may exchange items of CMOS news and interest. It is a bi-monthly publication mailed to all members and, except for advertising revenue, is funded through Society membership fees. Articles are accepted in either official language, and responsibility for content rests with their respective authors. Although views expressed are not necessarily those of CMOS, the editorial staff shall endeavour to maintain a level of integrity deserving of the Society.

##### Mailing Address

Dave Mudry  
Ice Climatology  
Atmospheric Environment  
Service  
Third Floor  
365 Laurier Avenue West  
Ottawa, Ontario  
K1A 0H3

##### Editorial Board

Editor: André Bolduc  
  
Associate Editors:  
Dave Mudry  
Micheline Gilbert

##### LA POLITIQUE EDITORIALE

Le BULLETIN DE NOUVELLES de la SCMO est la voie principale par laquelle ses membres peuvent échanger des articles d'information et d'intérêt. C'est une publication bimestrielle qui est expédiée à tous les membres et qui, sauf pour les revenus de la publicité, est financée par les frais d'adhésion. Les articles sont acceptés dans l'une ou l'autre des langues officielles et le contenu demeure la responsabilité de l'auteur. Même si les idées exprimées ne sont pas nécessairement celles de la SCMO, la rédaction tentera de maintenir un niveau d'intégrité digne de la société.

##### Adresse postale

Dave Mudry  
Climatologie des glaces  
Service de l'environnement  
atmosphérique  
3<sup>e</sup> étage  
365, avenue Laurier ouest  
Ottawa (Ontario)  
K1A 0H3

##### Conseil de rédaction

Rédacteur en chef:  
André Bolduc  
  
Rédacteurs adjoints:  
Dave Mudry  
Micheline Gilbert

##### Acquisition of CHINOOK

With the process of incorporation having been completed, the Society was able to take steps towards the formal acquisition of the magazine Chinook. As most members will have noticed, the magazine has been re-activated under the leadership of Hans VanLeeuwen and his Editorial Board. Several interesting editions have been already issued. Members are encouraged to submit articles of interest and to acquaint likely subscribers for this attractive magazine.

##### Membership Renewals

Renewals for 1985 are coming in at a good rate, and it appears that members are having no difficulties with the redesigned renewal form. A reminder to those who have not yet completed their form: do it quickly so as not to interrupt subscriptions, etc.

##### Tax Deductible Status of Donations

Revenue Canada has confirmed that all donations to CMOS are tax-deductible. In order to help CMOS to expand its services, including the enlargement of the contents of Chinook and similar activities, members are urged to send their donations for the CMOS Development Fund or any other purpose they may wish to specify.

##### Exhibition of the CMOS Publications

At the invitation of the American Meteorological Society, we sent examples of Atmosphere-Ocean, Climatological Bulletin and Chinook to Los Angeles, where they were included in an exhibition of meteorological literature. This exhibition took place during the 65<sup>th</sup> Annual Meeting of the AMS, held in conjunction with the International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography and Hydrology and also in conjunction with the Third Conference on Climate Variations: Contemporary Climate 1850-2100 (Los Angeles, January 7-11 1985).

##### Canadian Commission for UNESCO

CMOS has been accepted as a member organization of the Canadian Commission for UNESCO. As such, CMOS will be able to reflect its views at the Commission's annual meetings and between those meetings on UNESCO programmes (particularly in the oceanographic field) which the Commission uses to brief Canadian delegates to UNESCO meeting, etc.





#### XIXe CONGRES SCMO 1985

Université du Québec à Montréal

12-14 juin, 1985

Bienvenue au dix-neuvième congrès de la Société Canadienne de Météorologie et d'Océanographie qui aura lieu à Montréal en juin 1985. L'Université du Québec à Montréal (UQAM) est située en plein cœur de Montréal et est reliée au Holiday Inn Place Dupuis par un couloir souterrain. Le pavillon Judith-Jasmin de l'UQAM sera le lieu de rencontre pour la majorité des activités; il est situé à l'adresse suivante: 405 rue Ste-Catherine est.

A la suite du Congrès de la SCMO, l'American Meteorological Society tiendra deux congrès à l'UQAM: le septième congrès sur la prévision numérique du 17 au 20 juin et le deuxième congrès international sur le service météorologique à l'aviation du 19 au 21 juin.

#### PROGRAMME SCIENTIFIQUE

Le Congrès de la SCMO a pour thème "La modélisation en météorologie et en océanographie", qui sera aussi le titre de la session plénière au commencement du congrès. Cette session comprendra deux communications par des conférenciers invités: André Robert nous parlera de "l'évolution des modèles de la prévision numérique du temps", tandis que James Price donnera sa conférence sur "la modélisation des effets des tempêtes sur la partie supérieure des océans". Environ 140 communications sont incluses dans les autres sessions thématiques et régulières qui considèrent de nombreux sujets en météorologie et en océanographie. Une liste des conférenciers invités et des titres des sessions, ainsi qu'un horaire se trouvent plus loin dans cette annonce. Le temps alloué pour les communications (incluant la période de questions et de discussion) sera de 20 minutes pour les communications soumises par les participants et de 40 minutes pour les communications présentées par des conférenciers invités.

#### EXPOSITION COMMERCIALE

Pendant les trois congrès, il y aura une exposition commerciale. Comme le nombre d'exhibits est limité, nous demandons aux intéressés de bien vouloir communiquer avec le responsable, Richard Moffet, afin de réserver le plutôt possible.

#### VISITE AU CENTRE METEOROLOGIQUE CANADIEN

Dans l'après-midi du 14 juin, il y aura probablement quelques visites organisées dans les sections d'exploitation et du centre de calcul (ordinateur CRAY).

#### EXPOSITION RAMSES II A MONTREAL

De juin à septembre 1985, il y aura une exposition sur le grand pharaon RAMSES II et son temps. Les trésors du grand pharaon qui vécut il y a 3000 ans seront dévoilés à Montréal. Pour cette exposition, le comité d'organisation a acheté un nombre limité de billets à 4,50\$ CAN chacun qui pourront être utilisés seulement à certaines heures le vendredi après-midi, le 14 juin. Sur la formule d'inscription, vous pouvez indiquer votre intérêt et ajouter le montant aux frais d'inscription. Pour ceux et celles qui désirent visiter l'exposition en d'autres temps, vous n'avez qu'à le mentionner sur le formulaire d'inscription ou communiquer avec le responsable, René Servranckx.

#### LOGEMENT

200 chambres ont été réservées au Holiday Inn Place Dupuis, dont 25 seront disponibles à partir du 10 juin et le reste à partir du 11 juin 1985. L'hôtel est relié à l'UQAM par un couloir souterrain et est situé à proximité du Vieux Montréal, du Village St-Denis et du terminus d'autobus Voyageur. La station de métro Berri-de-Montigny est adjacente à l'hôtel et facilite l'accès aux attractions du Stade Olympique, de Terre des Hommes et à plusieurs centres commerciaux.

Le prix d'une chambre simple ou double est de 65\$ CAN incluant un espace de stationnement par chambre. Chaque réservation doit être faite avant le 15 mai 1985 en utilisant la formule ci-jointe.

De préférence pour les membres à la retraite et pour les étudiants(es), 30 chambres ont été réservées à la résidence de l'Université McGill. Les prix ainsi que d'autres informations sont indiqués plus loin. Il faut réserver avant le 1er mai 1985. De l'Université McGill à l'UQAM, le trajet à pied se fait en 35 minutes, tandis qu'en métro, on peut compter 15 minutes incluant le temps pour y accéder et en sortir.

Les réservations pour l'hôtel Holiday Inn Place Dupuis ou la résidence de l'Université McGill doivent être faites directement avec l'hôtel ou l'université.

#### TRANSPORT

Les voyageurs arrivant à l'aéroport de Dorval peuvent utiliser l'autobus de Murray Hill au coût d'environ 5,50\$ CAN pour se rendre au centre-ville. L'autobus de Murray Hill s'arrête à l'hôtel Reine Elizabeth et de là, pour quelques dollars, vous prenez un taxi pour le Holiday Inn Place Dupuis.

Un taxi ou une limousine de l'aéroport de Dorval jusqu'à l'hôtel Holiday Inn Place Dupuis peut vous coûter jusqu'à 25.00\$ CAN, ou plus.

#### ACTIVITE SOCIALES

Une réception d'accueil, pour tous ceux qui seront inscrits, aura lieu au Holiday Inn Place Dupuis de 19h à 21h le 11 juin 1985 sous le patronage d'AIR CANADA.

Un vin et fromage sera servi à l'UQAM de 18h à 19h30 précédant l'assemblée générale annuelle de la SCMO le 12 juin. Le banquet annuel se tiendra également au Holiday Inn Place Dupuis à partir de 19h et il sera précédé d'un bar payant de 18h à 19h le 13 juin. Les billets du banquet et du vin et fromage seront compris dans les frais

d'inscription, sauf pour les membres à la retraite et pour les étudiants(es). Des billets additionnels (en quantité limitée pour le banquet) seront disponibles à la table d'inscription.

Lors de l'inscription, nous fournirons des informations pour les gens intéressés à visiter les sites historiques et culturels de la ville.

#### INSCRIPTION

On demande que toute inscription à l'avance soit faite avant le 15 mai 1985. Aucun excédent ne sera exigé pour un retard, mais le respect de cette date va alléger le fardeau administratif. Comme il est mentionné plus loin sur le formulaire d'inscription, les frais pour 1985 seront de 92\$ CAN pour les membres de la SCMO, de 112\$ CAN pour les non-membres, de 20\$ pour les membres à la retraite et de 10\$ pour les étudiants(es). Sauf pour les membres à la retraite et les étudiants(es), les billets du banquet et du vin et fromage sont inclus dans les frais d'inscription. Un billet pour la réception d'accueil sera fourni gratuitement pour tous ceux qui seront inscrits.

#### 1985 CMOS XIXth CONGRESS

Université du Québec à Montréal

June 12-14, 1985

Welcome to the XIXth Congress of the Canadian Meteorological and Oceanographic Society (CMOS), which will be held in Montréal, in June 1985. The Université du Québec à Montréal (UQAM) is located in downtown Montréal, and connected to the Holiday Inn Place Dupuis by an underground passage. The UQAM Pavillon Judith-Jasmin will house most of the activities. The address is: 405, Ste-Catherine Street east.

After the CMOS Congress, the American Meteorological Society will hold two other congresses: the Seventh Conference on Numerical Weather Prediction, June 17 to 20 and the Second International Conference on the Aviation Weather System, June 19 to 21.

#### SCIENTIFIC PROGRAMME

The theme of the CMOS congress is "Modelling in Meteorology and Oceanography", which will also be the title of the plenary session at the beginning of the Congress. This session will include two invited presentations: one by André Robert related to the "Evolution of Numerical Weather Prediction Models", and the other by James Price entitled "Modelling the Upper Ocean Response to Storms". Approximately 140 presentations are included in other theme and regular sessions which consider a variety of topics in meteorology and oceanography. A list of invited speakers, sessions titles, and a timetable are found later in this announcement. Lengths of papers (including time for questions and discussion) will be 20 minutes for submitted papers and 40 minutes for invited papers.

#### EXHIBITS

Concurrently with the three conferences an exhibition will be held. As the number of booths is limited, exhibitors are required to contact the Exhibits Convenor, Mr. Richard Moffet, in order to arrange for reservations as early as possible.

#### VISIT TO THE CANADIAN METEOROLOGICAL CENTRE

In the afternoon of June 14, there will probably be guided tours of the operations sections and Computer Centre (CRAY computer).

#### RAMSES II EXHIBITION

From June to September 1985, Montréal will be the

host of an exhibition about RAMSES II and his time. The treasures of a pharaoh who lived 3000 years ago will be shown in Montréal. The arrangements Committee has bought a limited number of tickets which will be valid (at a cost of \$4.50 CAN each) only at selected times in the afternoon of Friday June 14. If interested, please indicate it on the registration form and add this amount to the registration fees. If you wish to see this show at another time, please mention it on the form or contact the Social Activities Convenor, Mr. René Servranckx.

#### ACCOMMODATION

Two hundred rooms have been reserved at the Holiday Inn, Place Dupuis, of which 25 are available from the 10th of June and the rest from the 11th. The hotel is connected to UQAM by an underground passage; it is also close to Old Montréal, Village St-Denis and the Voyageur Bus Terminal. The Berri-de-Montigny subway station is connected to the hotel and gives access to the Olympic Stadium, Man and His World, and several major shopping centres or promenades.

The rate for single or double occupancy is \$65 CAN and includes parking. Each reservation must be made before May 15 1985 using the accompanying form.

Thirty rooms have been reserved at the McGill University residence, and preference will be given to students and retired members. Rates and additional information are given below. Reservations must be made May 1st 1985. The McGill University Campus is a 35-minute walk away from UQAM; the subway ride takes about 15 minutes.

The reservations at the Holiday Inn, Place Dupuis, or the McGill University residence must be made directly with the hotel or university.

#### TRANSPORTATION

Visitors landing at the Dorval Airport can take the Murray Hill bus line, which will take them downtown for about \$5.50 CAN. The Murray Hill bus stops at the Queen Elizabeth hotel and from there, for a few dollars, you can take a taxi for the Holiday Inn Place Dupuis. The fare for a taxi or limousine from the Dorval Airport to the Holiday Inn Place Dupuis is approximately \$25.00 CAN and up.

#### SOCIAL

An ice breaker reception sponsored by AIR CANADA, for all registered participants, will be held at the Holiday Inn Place Dupuis, from 7 to 9 p.m., on June 11th, 1985.

A "wine and cheese" will be served at UQAM on June 12th, from 6 to 7:30 p.m., before the CMOS general annual meeting. The annual banquet will be at the Holiday Inn Place Dupuis at 7 p.m. on June 13th; a cash bar will be opened from 6 to 7 p.m. before the annual banquet.

The cost of the banquet and of the "wine and cheese" are covered in the registration fees, except for retired and student members. Additional tickets (limited number for the banquet) will be available at the registration desk.

At registration time, we will make available information for those participants who want to enjoy the historical and cultural locations of Montréal.

#### REGISTRATION

Pre-registration should be made before May 15 1985. No late registration fee will be charged, but your cooperation in meeting this deadline will make the paperwork easier. As mentioned below on the form, registration fees for 1985 congress are \$92.00 CAN for CMOS members, \$112.00 CAN for non-members, \$20.00 CAN for retired members and \$10.00 CAN for student members.

Except for retired and student members, the costs for the banquet and the "wine and cheese" are included in the basic registration fees.

A ticket for the ice breaker reception will be offered free to all registered participants.

## LOCAL ARRANGEMENTS COMMITTEE

### COMITE ORGANISATEUR

Chairman: Jean-Guy Cantin,  
Environnement Canada  
Président: Suite 300, 100 Boul Alexis Nihon  
St-Laurent (Québec)  
H4M 2N8  
(514) 333-4551

Secretary-Publicity Convenor: Prof. Peter Zwack,  
Département de Physique  
Responsable secrétaire- Université du Québec à Montréal  
publicité: C.P. 8888, Succ. A  
Montréal (Québec)  
H3C 3P8  
(514) 282-3304

Treasurer: Robert Mailhot,  
Environnement Canada  
Trésorier: Centre Météorologique Canadien  
2121, voie de service nord  
Route Transcanadienne  
Dorval (Québec)  
H9P 1J3  
(514) 683-8554

Registration Convenor: Jocelyne Blouin,  
4089, rue Oxford  
Responsable inscription: Montréal (Québec)  
H4A 2Y5  
(514) 481-7946

Facilities Convenor: Robert Mailhot,  
Environnement Canada  
Responsable location Centre Météorologique Canadien  
des lieux: 2121, voie de service nord  
Route Transcanadienne  
Dorval (Québec)  
H9P 1J3  
(514) 683-8554

Social Activities Convenor: René Servranckx  
Environnement Canada  
Responsable activités Suite 300, 100 Boul Alexis Nihon  
sociales: St-Laurent (Québec)  
H4M 2N8  
(514) 333-4551

Exhibits Convenor: Richard Moffet,  
Environnement Canada  
Responsable exposition: Suite 300, Boul Alexis Nihon  
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H4M 2N8  
(514) 333-4551

Translation Convenor: Marie-France Guéraud,  
Environnement Canada  
Responsable traduction: Suite 300, 100 Boul Alexis Nihon  
St-Laurent (Québec)  
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### SCIENTIFIC PROGRAMME COMMITTEE

#### COMITE DU PROGRAMME SCIENTIFIQUE

Chairman: Dr. Harold Ritchie,  
Environnement Canada  
Président: Recherche en prévision numérique  
Suite 508  
2121, voie de service nord  
Route Transcanadienne  
Dorval (Québec)  
H9P 1J3  
(514) 683-7768

Vice-Chairman: Prof. Conrad East,  
Département de Physique  
Vice-Président: Université du Québec à Montréal  
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H3C 3P8  
(514) 282-3302

### EXHIBIT SPACE AVAILABLE

#### XIX CMOS CONGRESS IN MONTREAL

#### UNIVERSITE DU QUEBEC A MONTREAL

June 12 - 14 1985

THE XIXth congress of the Canadian Meteorological and Oceanographic Society will be held on June 12, 13 and 14 of 1985. We expect an attendance in excess of 300 at the 1985 CMOS congress. Attendees are professionals in the fields of meteorology and oceanography from all across Canada, and throughout the United States. The conferences will be held at the "Université du Québec à Montréal". This area is near the lecture halls to be used for the conference sessions. Attendees moving between sessions will pass through the exhibitor area, which is also open to the "métro", Montréal's modern subway system. It is expected that the majority of attendees will enter the conference sessions through the exhibitor area. At least 18 spaces (about 10' X 15') are available in this "Grande Place" which is also connected to the metro.

From the 17th to the 20th, at the same place, The American Meteorological Society (AMS) conference on "Numerical Weather Prediction" will also be held. From June the 19th to the 21st, the Second International Conference on Aviation Weather Systems, administered by the AMS, will also be held at the University. We expect that 200 attendees will attend each of these conferences, coming from throughout North America and Europe. It will be possible for the exhibitor to maintain the exhibit for all three of these conferences.

Therefore an exhibitor space for the CMOS congress will be \$500.00 CAN. If an exhibitor wishes to stay for the conferences of the second week, an additional fee of \$300.00 CAN is required. Should an exhibitor wish only to be present the second week for the two AMS sponsored conferences, the fee is set at \$500.00 CAN. Booths will be assigned according to the preferences on a first-come, first-served basis. Any special needs (telecommunications line, telephone, etc.) will be charged to the exhibitor. The Local Arrangements Committee will provide a standard power outlet, 120 V A.C., 15 amp. Additional information included:

1. In the exhibit space, tables are available;
2. Security will be provided during the evenings, nights and week-ends. However, the CMOS and the University declines any responsibility against damages or theft;
3. One free inscription for the CMOS congress accompanies every exhibit space rented;
4. The exhibits will be set-up mostly on June 11 and June 17, 1985.
5. Participants to all three congresses will be housed at the "Holiday Inn".

If any pre-congress help or name of a customs broker is required, the Local Arrangements Committee will put the exhibitor in contact with people working with them. A cheque dated not later than April 1st, 1985 is required. For more information, please feel free to contact Mr. Richard Moffet.

Mr. Richard Moffet  
Suite 300  
100 Blvd Alexis Nihon  
St-Laurent (Québec)  
H4M 2N8  
(514) 333-4551



## RESUME DES SESSIONS - 19e CONGRES ANNUEL DE LA SCMO

(Note: Les sessions thématiques incluent les communications invitées.)

## Mardi le 11 juin

0900-1200	Comité de rédaction, Atmosphère-Océan
0900-1200	Comité de rédaction du Chinook
0900-1200	Comité de rédaction du Bulletin Climatologique
1300-1545	Comité de l'éducation de la SCMO
1300-1545	Comité scientifique de la SCMO
1300-1545	Comité des présidents des centres de la SCMO
1600-1800	Conseil national de la SCMO (session I)
1900-2100	Réception d'accueil - Holiday Inn Place Dupuis
2000-2300	Conseil national de la SCMO (session II)

## Mercredi le 12 juin

0830-1030	1	Session plénière thématique: Modélisation en météorologie et en océanographie
1030-1050		Café
1050-1230	2	Session plénière thématique: Expériences de la navette spatiale et informations CASP
1230-1330		Déjeuner
1330-1510	3A	Session thématique: Utilisation opérationnelle des sorties des modèles
1330-1510	3B	Session thématique: Océanographie côtière I
1330-1510	3C	Ondes de surface I
1510-1530		Café
1530-1710	4A	Evaluation des modèles météorologiques
1530-1710	4B	Océanographie côtière II
1530-1710	4C	Modélisation du transport et de la diffusion des polluants I: réaction aux urgences et évaluation des conséquences pour l'environnement
1800-1930		Vin et fromage - UQAM
1930-2300		Assemblée générale annuelle de la SCMO - UQAM

## Jeudi le 13 juin

0830-1030	5A	Session thématique: Modélisation du transport et de la diffusion des polluants II
0830-1030	5B	Estuaires et baies I
0830-1030	5C	Météorologie appliquée
1030-1050		Café
1050-1230	6A	Modélisation du transport et de la diffusion des polluants III
1050-1230	6B	Estuaires et baies II
1050-1230	6C	Session thématique: Chimie des océans et processus géochimiques I
1230-1330		Déjeuner
1330-1510	7A	Session thématique: Météorologie de la méso-échelle I
1330-1510	7B	Prévisions météorologiques et études de cas
1330-1510	7C	Chimie des océans et processus géochimiques II
1510-1530		Café
1530-1710	8A	Météorologie de la méso-échelle II
1530-1730	8B	Ondes de surface II
1530-1710	8C	Radar, satellite et météorologie
1710-1830		Réunions des groupes d'intérêts spéciaux
		Pollution de l'air
		Météorologie d'exploitation
1900		Banquet SCMO - Holiday Inn Place Dupuis

## Vendredi le 14 juin

0830-1030	9A	Physique et modélisation des nuages
0830-1030	9B	Océanographie des eaux profondes I
0830-1030	9C	Météorologie de la couche limite
1030-1050		Café
1050-1230	10A	Dynamique atmosphérique
1050-1230	10B	Océanographie des eaux profondes II
1050-1230	10C	Phénomènes météorologiques dangereux
1230-1330		Déjeuner
1330-1530	11A	Session thématique: Modélisation des circulations générales et paramétrisation
1330-1530	11B	Dynamique de la mer du Labrador
1330-1510	11C	Climatologie

## Conférenciers invités

G.J. Boer, Centre climatologique canadien  
 P.G. Brewer, Woods Hole Oceanographic Institution  
 A.D. Christie, Service de l'Environnement atmosphérique  
 G.T. Csanady, Woods Hole Oceanographic Institution  
 W. Evans, Service de l'Environnement atmosphérique  
 P.V. Hobbs, University of Washington  
 D. Kendall, Conseil national de recherches  
 A.H. Murphy, Oregon State University  
 J.F. Price, Woods Hole Oceanographic Institution  
 A. Robert, Recherche en prévision numérique

## SUMMARY OF SESSIONS - 19th ANNUAL CMOS CONGRESS

(Note: Theme sessions include invited presentations)

## Tuesday, June 11

0900-1200	Atmosphere-Ocean Editorial Committee
0900-1200	Chinook Editorial Committee
0900-1200	Climatological Bulletin Editorial Committee
1300-1545	CMOS Education Committee
1300-1545	CMOS Scientific Committee
1300-1545	CMOS Centre Chairpersons
1600-1800	CMOS National Council (Session I)
1900-2100	Ice Breaker Reception - Holiday Inn Place Dupuis
2000-2300	CMOS National Council (Session II)

## Wednesday, June 12

0830-1030	1	Plenary Theme Session: Modelling in Meteorology and Oceanography
1030-1050		Coffee
1050-1230	2	Plenary Theme Session: Space Shuttle Experiments and CASP Information
1230-1330		Lunch
1330-1510	3A	Theme Session: Operational Use of Model Output
1330-1510	3B	Theme Session: Coastal Oceanography I
1330-1510	3C	Surface Waves I
1510-1530		Coffee
1530-1710	4A	Evaluation of Meteorological Models
1530-1710	4B	Coastal Oceanography II
1530-1710	4C	Modelling the Transport and Diffusion of Pollutants I: Emergency Response and Environmental Impact Assessment
1800-1930		Wine and Cheese - UQAM
1930-2300		CMOS Annual General Meeting - UQAM

## Thursday, June 13

0830-1030	5A	Theme Session: Modelling the Transport and Diffusion of Pollutants II
0830-1030	5B	Estuaries and Embayments I
0830-1030	5C	Applied Meteorology
1030-1050		Coffee
1050-1230	6A	Modelling the Transport and Diffusion of Pollutants III
1050-1230	6B	Estuaries and Embayments II
1050-1230	6C	Theme Session: Ocean Chemistry and Geochemical Processes I
1230-1330		Lunch
1330-1510	7A	Theme Session: Mesoscale Meteorology I
1330-1510	7B	Meteorological Forecasts and Case Studies
1330-1510	7C	Ocean Chemistry and Geochemical Processes II
1510-1530		Coffee
1530-1710	8A	Mesoscale Meteorology II
1530-1730	8B	Surface Waves II
1530-1710	8C	Satellite and Radar Meteorology
1710-1830		Special Interest Group Meetings
		Air Pollution
		Operational Meteorology
1900		CMOS Banquet - Holiday Inn Place Dupuis

## Friday, June 14

0830-1030	9A	Cloud Physics and Modelling
0830-1030	9B	Deep Sea Oceanography I
0830-1030	9C	Boundary Layer Modelling
1030-1050		Coffee
1050-1230	10A	Atmospheric Dynamics
1050-1230	10B	Deep Sea Oceanography II
1050-1230	10C	Severe Weather
1230-1330		Lunch
1330-1530	11A	Theme Session: General Circulation Modelling and Parameterization
1330-1530	11B	Labrador Sea Dynamics
1330-1510	11C	Climatology

## Invited Speakers

G.J. Boer, Canadian Climate Centre  
 P.G. Brewer, Woods Hole Oceanographic Institution  
 A.D. Christie, Atmospheric Environment Service  
 G.T. Csanady, Woods Hole Oceanographic Institution  
 W. Evans, Atmospheric Environment Service  
 P.V. Hobbs, University of Washington  
 D. Kendall, National Research Council  
 A.H. Murphy, Oregon State University  
 J.F. Price, Woods Hole Oceanographic Institution  
 A. Robert, Recherche en Prévision Numérique

Congrès SCMO 1985  
Formulaire d'inscription

CMOS CONGRESS 1985  
REGISTRATION FORM

Nom/Name .....

Adresse/ .....  
Address

Ville/City ..... Province ..... Code/Zip .....

Tél./tel. .... Association/Affiliation .....

Frais d'inscription

Membre	92\$
Membre-retraité	20\$
Non-membre	112\$
Etudiant	10\$

Registration Fees

Member	\$92.
Retired member	\$20.
Non-member	\$112.
Student	\$10.

Veillez faire parvenir votre  
formulaire au plus tard le 15 mai 1985,  
et faites votre chèque à l'ordre de  
SCMO 1985 congrès

Please send your registration form  
before May 15, 1985, and make the  
cheque payable to  
CMOS congress 1985

Adresse: M. Robert Mailhot, trésorier  
SCMO 1985  
Environnement Canada  
Centre Météorologique  
Canadien  
2121, voie de service nord  
Route Trans-canadienne  
Dorval, Québec H9P 1J3

Address: Mr. Robert Mailhot, treasurer  
CMOS 1985  
Environment Canada  
Canadian meteorological  
Center  
2121, Service Road North  
Trans Canada Highway  
Dorval, Québec H9P 1J3

PS. 1 Etes-vous intéressé(e) à visiter  
l'exposition Ramsès II, le  
vendredi 14 juin, en après-midi.  
Oui non  
Prix d'entrée: 4,50\$. Si oui,  
ajouter ce montant à votre  
chèque.

PS. 1 Would you like to visit the  
Ramses II exposition on Friday  
afternoon, the 14th yes no  
Entry: \$4.50 If yes add this  
amount to your cheque.

2 Les frais d'inscription  
comprennent le banquet et autres  
réceptions, sauf pour les membres  
retraités et les étudiants. Il y  
aura une réception d'accueil  
ouverte à tous le 11 juin à  
l'hôtel.

2 Registration fees include banquet  
and other reception except for  
retired members and students. An  
ice-breaker reception will be  
held for everybody, June 11th at  
the Hotel.

BANQUET: 325 places seulement/seats only



# Logement/Accommodation

1. Holiday Inn: prix unique (65\$) pour occupation simple ou double\*. Il faut réserver avant le 15 mai. \*Donner le nom de l'autre occupant si le cas se présente.

2. 30 chambres à la résidence de l'université McGill; la préférence sera accordée aux membres à la retraite et aux étudiants(es). Réserver avant le premier mai.

1. Holiday Inn: same price (65\$) for single or double\* occupancy. Reserve before May 15th. \*Give name of roommate, if appropriate.

2. 30 rooms at McGill University residence: first choice given to retired members and students. Reserve before May First.

## HOLIDAY INN PLACE DUPUIS

Congrès/Congress Société Canadienne de Météorologie et d'Océanographie/Canadian Meteorological and Oceanographic Society .....

Nom du client/Guest Name .....

Adresse résidence/Home Address .....

Ville/City ..... Code/Zip ..... Tel: .....

Société/Company .....

Ch. partagée avec/Roommate .....

Arrivée/Arrival: Date ..... Heure/Time .....

Départ/Departure: Date ..... Heure/Time .....

P.S. Chambre retenue jusqu'à 18h, si non garantie par dépôt ou no. carte crédit. Room held till 6pm unless guaranteed by deposit or credit card no.

Carte Credit Card (AX, VS, DC, MC, AC)..... No. ....

S.v.p. retourner à/Please return to: Holiday Inn Place Dupuis  
1415, rue St-Hubert  
Montréal, Québec  
Canada  
H2L 3Y9

## McGill University

Non-étudiant/non-student 24\$/jour \$24/day 144\$/sem. \$144./week

Etudiant/Student\* 17,50\$/jour \$17.50/day 78\$/sem. \$78./week

\*identification exigée/ID card required

S.v.p. réserver à/Please reserve to:  
McGill University  
Summer Accomodations  
Attn: File No. CM30  
3935 University Street  
Montreal, Québec H3A 2B4  
Tel: (514) 392-4222, 392-4224

- Réservations confirmées par un dépôt d'une nuit.  
- Les serviettes sont fournies.  
- Inscription au 3425, rue Université.  
-Room registration at 3425 University St.  
~~-Reservations confirmed upon a one~~  
night deposit. Towels supplied.

## ATMOSPHERE-OCEAN

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## REMOTE SENSING CERTIFICATE COURSE

## at the University of Waterloo

The Faculty of Environmental Studies at the University of Waterloo, in co-operation with the Ontario Centre for Remote Sensing, offered a certificate course in Remote Sensing from November 5 - November 9, 1984. There were 13 attendees, from as far away as Victoria, B.C. and Yellowknife, Northwest Territories. Several belonged to groups which had recently purchased digital image analysis systems.

The first two days were devoted to lectures and a hands-on introduction to digital image analysis at the University of Waterloo under the direction of Professors LeDrew, Howarth and Kesik. On the Wednesday, Dr. Simsek Pala gave a one day workshop at OCRS which emphasized techniques of visual interpretation of LANDSAT imagery.

On Thursday and Friday, one group remained at OCRS and the other group returned to the University of Waterloo for intensive exercises on the image analysis systems. Using the Bruce Peninsula as the study area, the attendees at both locations were introduced to supervised and unsupervised classification techniques, enhancement techniques and the processes for geometric correction and map generation.

This is the third year that this program has been offered. This course will be given next in November of 1985.

A second level certificate course will be given in the summer of 1985 by Dr. LeDrew. It will emphasize field techniques and experimental design in remote sensing. The first course or experience with a digital image analysis system is prerequisite.

Those interested in either course should contact:

Dr. E. LeDrew  
Department of Geography  
University of Waterloo  
Waterloo, Ontario  
N2L 3G1

## ARTICLES

- The Oceans and how they affect our climate, by Fred Dobson.
- How Weather conditions affect evaporation: drying laundry outdoors in Northern Ontario winters, by Piers Nash.
- The Québec-St. Malo TRANSAT "TAG" race: Viewed from its supporting Weather Forecast Centre in Bedford, Nova Scotia, by Ed Guimond.
- Global Surface Temperatures, by M. Chahine and J. Susskind.
- Art Appreciation - Physical Principles, by Philip Chadwick.

## DEPARTMENTS

- News and Notes
- Hurricane Diana of 1984, by Oscar Koren.
- Index to Volumes Five and Six.
- Guidelines for contributors of article to Chinook.
- Professional and Business Directory.

## THE 1984 ANDREW THOMSON LECTURE

Long Lived Baroclinic Eddies in the Atmospheres of  
the Giant Planets and in the Laboratory

Dr. Raymond Hide, F.R.S.

The Andrew Thomson Lecture Series at the University of Toronto was established in 1974 to commemorate Dr. Andrew Thomson, a leading figure in Canadian Meteorology. The lectures are held biennially and are jointly sponsored by the Andrew Thomson Memorial Fund, the Physics Department of the University of Toronto and CMOS. This year's speaker was Dr. Raymond Hide, FRS, the Director of the Geophysical Fluid Dynamics Laboratory at the U.K. Meteorological Office. His lecture was given on November 22, 1984 and was entitled "Long Lived Baroclinic Eddies in the Atmosphere of the Giant Planets and in the Laboratory". It was based in part on his 1983 Presidential Address to the Royal Astronomical Society and was published in their Quarterly Journal (Q.J.R. Astro. Soc. 1984, 25, 232-247). In view of this overlap it has been decided not to publish the talk in full and what follows is a summary. Members interested in more details should seek out the Quarterly Journal paper. Dr. Hide's talk was copiously illustrated with slides and it is hard to do justice to his excellent lecture in this brief summary.

The study of planets, other than Earth, as physical objects and not just moving points of light goes back to the early seventeenth century when Galileo discovered Jupiter's four main satellites and initiated the observations that led to the discovery of Saturn's rings by Huyghens. Systematic work in planetary science is a recent development and is based on data from ground, aircraft and rocket based instruments. In the case of Jupiter and Saturn, the most spectacular observations have been made by the Pioneer and Voyager space-probes that in the past ten years have encountered these planets. Preparations are well under way for the Galileo mission that will provide the first long-term close observations of the Jovian system. Included in the mission is an entry probe that will provide in-situ data on the constituents of Jupiter's atmosphere. These observations have shown that the atmospheric circulation of both planets is characterized by long-lived cellular structures that may be related to similar phenomena observed in laboratory experiments with rotating tanks.

Jupiter is the fifth planet from the Sun and orbits it with a period of 11.9 years at a mean distance of 780 million kilometres. It is the largest of the planets with a mean radius of 69,700 kilometres, more than 10 times the radius of the Earth. Its major constituents are hydrogen and helium. The Jovian day is just under 10 hours long and this rapid rotation results in the noticeable oblateness in its appearance. It is enveloped in several layers of clouds suspended in a deep and well mixed atmosphere of hydrogen, helium, methane and ammonia. There is an upper layer of white ammonia cirrus. Below this is a more substantial and colourful cloud deck which may contain ammonium hydrosulfide. Its striking colours are due to the photolysis of ammonia, hydrogen sulfide and other compounds by solar ultra violet light. Absorbed sunlight accounts for half of Jupiter's thermal emission, the balance is due to internal heat sources associated with primordial heat and slow gravitational contraction of the planet. These internal sources of heat allow for the possibility of a non-monotonic equator to pole temperature gradient.

Prominent markings on Jupiter's visible surface are bright cloud zones which are oriented parallel to the equator and are separated by darker belts. The zones and belts are not entirely regular: dark patches often appear on the brighter regions and bright patches on the darker regions. The most striking feature of all is the long-lived Great Red Spot (GRS) which is certainly 150 years old and may have been seen by Hooke and Cassini in the seventeenth century. The GRS is roughly elliptical in shape and is centered at 22° south. It occupies about 30° of longitude and 10° of latitude. The three White Ovals that formed in 1939 at the boundary of the south temperature and tropical zone are the residue of a highly irregular tropical disturbance that was first observed in 1901. There are many other long-lived eddies that can be seen on the Voyager pictures of Jupiter. The eddies are typically embedded in a strongly sheared background zonal flow. The movement of these features provides information about the rotation of Jupiter as a function of latitude at the upper cloud level. They indicate that there is a sharply-bounded westerly equatorial jet stream moving at 100 metres per second relative to the planet.

Saturn is the sixth planet from the Sun, which it orbits in 29.5 years at a mean distance of 1,430 million kilometres. It is second only to Jupiter in size (mean radius 57,400 km) and mass and has the low mean density expected of a planet composed mainly of hydrogen and helium. Saturn's equatorial diameter exceeds its polar diameter by more than 10 percent, the degree of oblateness being larger than that of Jupiter. Saturn is comparable with Jupiter as a reflector of sunlight and is enveloped in dense clouds of ammonia crystals suspended in an atmosphere of hydrogen, helium, methane and other gases. The clouds are arranged in bands parallel to the equator. The bands are much more regular than those of Jupiter and the colour variations are much less pronounced. Voyager TV pictures show a variety of interesting atmospheric phenomena. These include many long-lived atmospheric eddies but there is nothing comparable to the Great Red Spot. The length of a day on Saturn is 10.1 hours. The equatorial jet stream on Saturn moves at more than 400 metres per second relative to the underlying planet.

The meandering mid-latitude jet streams on Earth and the large eddies on Jupiter and Saturn exemplify many of the salient characteristics of flows in rapidly rotating fluids. But detailed and subtle considerations are required to understand why the eddies on Jupiter and Saturn have lifetimes of order decades to centuries, while large-scale motion on Earth are highly chaotic. Laboratory studies of hydrodynamics flows in rotating fluids provide a convenient setting in which to study these motions. In particular, the study of convection in a rotating annulus subject to horizontal temperature gradients has shown that a single intense stable baroclinic disturbance that is strongly localized in azimuth can be formed. This finding has obvious implications for the interpretation of the isolated nature of the Great Red Spot.

For nearly inviscid flow, the character of the flow in these experiments depends on a single non-dimensional parameter "P" involving the density of the fluid, the dimensions of the apparatus, the acceleration due to gravity

and the rotation rate. The flow acts to reduce the impressed horizontal temperature gradient by transporting heat away from its source regions. There are three regimes into which the flows can be classified. For values of "P" exceeding a critical value "Pr" the flow is axisymmetric, meaning that its properties are independent of azimuth. Regular steady or periodic non-axisymmetric flows exist in the range "Pr" > "P" > "Pi", where Pi is a further critical value. For "P" < "Pi", the flow is irregular aperiodic and non-axisymmetric. The constants "Pr" and "Pi" depend on the mechanical and thermal boundary conditions and on the Brunt-Väisälä frequency. Both the regular and irregular non-axisymmetric flows are fully developed baroclinic disturbances that are driven by the available potential energy associated with the impressed temperature field.

The detailed structure of the flow pattern in the regular and non-axisymmetric regime depends primarily on the variation of the temperature field with distance from the rotation axis. If it has a maximum near mid-radius of the apparatus, obtained by heating the fluid internally and cooling it at the walls, then the upper level flow pattern is dominated by anti-cyclonic closed compact eddies embedded in an anti-cyclonic jet stream. Alternatively if the temperature field has a minimum near mid-radius, then the dominant eddies are cyclonic.

When "P" is only slightly less than "Pr", the upper-level flow consists of a steady isolated anti-cyclonic eddy and a weaker companion cyclonic one. Once established, the pattern is quite steady, apart from a slow constant azimuthal drift. As "P" is decreased from "Pr", the azimuthal wavenumber of the steady pattern increases until "Pi" is reached. At this point the flow becomes irregular and aperiodic.

These results demonstrate that fully developed baroclinic disturbances can account for many of the observed properties on long-lived Jovian and Saturnian eddies. Accordingly, the sense of circulation and oval shape of these eddies result from the non-monotonic latitudinal variation of the background thermal field and that the associated zonal flow has strong horizontal and vertical shear. The compact nature of the eddies, their peripheral jet streams and longevity are characteristic properties of baroclinic eddies in the regular non-axisymmetric regime. The isolated nature of the most striking of the eddies, the Great Red Spot, is characteristic of the flow in the transition from axisymmetric to non-axisymmetric regimes. The latitudinal scale of the eddies is governed by the not fully understood spacing of the atmospheric bands of clouds. The value of "P" at the latitude of the GRS should be close to "Pr". The absence of a comparable eddy at a similar northern latitude is presumably due to asymmetries between the two hemispheres that lead to values of "P" greater than "Pr" at these latitudes.

Resume provided by: G.W. Kent Moore,  
Program Co-ordinator  
Toronto Chapter

#### Available for paid services

An experienced (35 years) retired professor with specialization in Applied Mathematics (eg: Geophysical fluid dynamics / or else) is available part or whole time for paid services in Consultants / Advisors / Contracts / Sub-contracts / or else. Phone: Dr. Ray, (613) 824-7168 or write: Ste 318-a, 2767 Innes Road, Gloucester, Ontario. K1B 4L4.

#### POSITION IN METEOROLOGY

Applications are invited for a permanent, tenure-track position at the assistant professor level with the Meteorology Division, Department of Geography, University of Alberta, beginning July 1, 1985. Applications for this position should have a Ph.D. in Meteorology or a closely related field. The successful candidate will be expected to undertake research and to teach courses at introductory and advanced levels in support of B.Sc., M.Sc. and Ph.D. degree programs in Meteorology. All applications received by April 30, 1985 will be considered, but preference may be given to applicants with research experience in boundary-layer meteorology, meteorological statistics and instrumentation.

Please send your applications with resume, transcripts and three letters of reference to:

Dr. R.G. Ironside, Chairman  
Department of Geography  
University of Alberta  
Edmonton, Alberta.  
T6G 2H4 Canada.

The University of Alberta is an equal opportunity employer but, in accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

#### MAINTENANCE CONTRACTOR

##### FOR MINISTRY OF NATURAL RESOURCES

##### STREAMFLOW FORECAST CENTRE

Length of Contract: April 1, 1985 to March 31, 1986.

Interested in bidding an hourly rate on an annual contract for maintenance and installation of:

- Precipitation sensors;      - Data collection platforms;
- Temperature sensors;      - Radar display system;
- Wind sensors;              - Computer equipment;
- Electronic data loggers;    - Snow sampling kits.

Requires purchase of components, maintenance workshop and equipment, and abstraction of precipitation data. Annual budget is \$23,000. Field work in Ontario.

Tender closes March 19, 1985. For more information, please contact:

Ms. Melise Marcel,  
Manager of Purchasing  
Administrative Services Branch  
Room 5533, Whitney Block  
Queen's Park.  
Toronto, Ontario.  
M7A 1W3  
(416) 965-1601

#### UNIVERSITY OF TORONTO - ERINDALE CAMPUS

##### Atmospheric Physics

The Department of Physics of the University of Toronto invites applications for a full-time tenure track position in atmospheric physics at the assistant professorial level. The base salary for this level is \$25,400 p.a. (1983-84 rates, currently under review). The successful candidate will have an active ongoing research

program and a good record of creative scientific achievement with promise of continuing development. Applications are encouraged from both experimentalists and theoreticians who have at least one and preferably more years of postdoctoral or equivalent research experience. An existing group of five atmospheric scientists (St. George Campus) have strengths in atmospheric dynamics, cloud physics, and atmospheric radiation. The closing date for the receipt of applications is May 15, 1985, with the earliest possible starting date being July 1, 1985. Applicants should submit a curriculum vitae, current preprints, and the names and addresses of at least three referees to Professor R.E. Azuma, Chairman, Department of Physics, University of Toronto, Toronto, Ontario, Canada. M5S 1A7. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

#### MEXICO

If you are

- \* a Canadian citizen,
- \* between 18 and 30 years of age,
- \* a graduate of a post-secondary institution (students graduating in the spring 1985 may also apply),
- \* able to work in Spanish

You are eligible

to apply for a career-oriented practical traineeship in Mexico.

Possible training fields

You should have a degree in one of these: agronomy; plant genetics; marine biology; genetics and molecular genetics; cellular biology; biochemistry/chemistry; seismology; meteorology; archeology; museology; architecture (conservation and restoration); tropical medicine; pharmacology; biotechnology and bioengineering; electrical engineering.

Duration of traineeship

Up to 10 months.

Departure date

Spring 1986.

Application deadline

Applications will be accepted until March 31, 1985.

Bursaries and Benefits

The Canadian Government pays trainees a monthly allowance and return air fare. The Mexican Government pays for emergency medical care as well as life and accident insurance. If you are interested, write to:

XIIIth Canada-Mexico Exchange Program  
Employment and Immigration Canada  
Place du Portage  
Phase IV, 5th floor  
Hull, Québec  
K1A 0J9

The Canada Mexico Exchange Program is funded by the Department of External Affairs and administered by the Department of Employment and Immigration Canada.



## CALL FOR PAPERS

### INTERNATIONAL WORKSHOP ON OFFSHORE WINDS AND ICING

#### HALIFAX, NOVA SCOTIA

October 7-11, 1985

An international workshop on offshore winds and icing, sponsored by the Atmospheric Environment Service of Environment Canada, and the Canadian Meteorological and Oceanographic Society will be held at the Bedford Institute of Oceanography from October 7-11, 1985. The objectives of the workshop are:

- to provide a forum for the exchange of ideas and information related to winds and icing offshore and,
- to identify the needs and concerns of industry, government and the research community in these areas.

Papers are solicited on both the research and operational aspects of winds and icing offshore. It is expected that there will be sessions in the following areas:

Winds: a) instrumentation, b) extreme wind determination, c) winds for hindcasting/forecasting, d) spatial and temporal variability of the wind field, e) effects of the wave field on the wind field, f) mesoscale, g) user requirements for wind data and information, and h) data collection and management.

Icing: a) regulations - COGLA, MOT, international, b) user requirements for icing data and information, c) case studies, d) estimates of extremes, e) critical review of models, f) measurement, g) countermeasures and mitigating actions, and h) forecasting.

The program will consist of invited as well as contributed papers. Those wishing to present a paper at the workshop should send titles and abstracts (100-300 words), to be received by 10 May 1985, to V.R. Swail, Atmospheric Environment Service, 4905 Dufferin Street, Downsview, Ontario, Canada, M3H 5T4. (416) 667-4995. Each abstract should contain the authors name, mailing address and telephone number. Authors will be notified by 7 June regarding acceptance of their papers. Final manuscripts must be received by 1 October 1985.

### OCEANOLOGY INTERNATIONAL CALL FOR PAPERS

The Call for Papers document for the Society of Underwater Technology sponsored Oceanology International 1986 (Brighton 4-7 March 1986) has now been published. Copies are available from event organisers Spearhead Exhibitions Ltd, Rowe House, 55/59 Fife Road, Kingston upon Thames, Surrey KT1 1TA, U.K. Tel: 01-549 5831. Telex: 928042 G. The deadline for 400 word abstracts is 1 May and authors will receive notification of paper acceptance by 1 July 1985.

UK Society for Underwater Technology Council Member and Chairman of the Conference Committee for OI86 Douglas Colvin explains "SUT has again agreed to sponsor this major event in the conference and exhibition calendar. It does so because since their inception in 1969 the OI events have consistently provided a unique meeting place for a wide international cross-section of engineers, scientists, managers and policy makers with political, commercial and/or scientific interest in the broad spectrum of topical subjects covered over the years. Conference speakers from all over the world, ranging from the eminent drawing broad lessons from the past and sketching out the future, to the unknown presenting exciting new theories or data or equipment are presented with a unique platform for trying out ideas.

"The Society is particularly pleased to hear that the World Organization of Dredging Associations is to hold its

1986 World Dredging Congress, WODCON XI, concurrently at the Brighton Centre and that the OI86 and WODCON exhibitions will be open to delegates to both events; SUT will be delighted to invite WODCON delegates to participate in sessions of the OI Conference of particular interest to them.

"In agreement with Spearhead Exhibitions - organisers of the OI series of events - our Council has established an OI86 Conference Committee consisting of Council Members C.J. Antonakis, Director, Ansen Ltd (Consulting Engineers); D.A. Ards, Head Marine Geology Research Programme, British Geological Survey; D. W. Colvin, Head, Marine Technology Support Unit (DTI), Harwell; and Cmdr D. Wardle, Executive Secretary, Society for Underwater Technology. The WODCON Committee representative on the OI committee is R.N. Bray, Director, Livesey Henderson Ltd, and Spearhead Exhibitions is represented by David Stott, Chairman and Lesley Sandbach, Conference Manager.

Although the Committee has agreed that the principal areas to be covered in 1986 are Navigation, Oceanology, Hydrography, Geophysics, Geology and Geotechnics and Ecological Consequences, the list is far from being exclusive. Selection of papers will be based on criteria of novelty, intrinsic merit, topicality or reviews pitched at an audience with a wide spectrum of interests. Although OI covers all aspects of Oceanology, many topics are closely related to dredging; accordingly the paper selection committees of OI86 and WODCON will coordinate selection of papers to avoid overlap.

"The OI events have always been aimed at international audience with a broad mix of international papers and exhibiting companies, and an effective mix of science and technology of impressive breadth and depth - in other words a genuine meeting place and forum for all those with the true interests of ocean science and technology at heart. It is the acknowledged and joint aim of our Society and Spearhead to make continuing efforts to achieve this aim - a truly international marine technology event. But to do so we need your support, your papers and above all your enthusiasm.

"The Council looks forward to meeting you in March 1986."

Full information on all aspects of the Oceanology International Exhibition and Conference and the WODCON exhibition are available at the address given above for Spearhead Exhibitions whilst WODCON conference details can be obtained from Ms. V.L. van Dam, WODCON XI, CEDA Secretariat, PO Box 3168, 2601 DD Delft, The Netherlands. Tel: (015) 783145. Telex: 03851 BHTD NL.

Issued on behalf of Spearhead Exhibitions Ltd by:

Judith Patten Public Relations  
34 Ellerker Gardens  
Richmond  
Surrey TW10 6AA  
Tel: 01-940 6211  
Telex: 928042  
Mailbox: 015465144  
Telecom Gold: 81:TAN010

### CALL FOR PAPERS - SIXTH CONFERENCE ON

#### OCEAN-ATMOSPHERE INTERACTION

JANUARY 1986, SOUTHEAST U.S.

The Sixth Conference on Ocean-Atmosphere Interaction, sponsored by the American Meteorological Society, will be held in January 1986 in the Southeast U.S. (possibly Puerto Rico). The Conference will be held in conjunction with the National Conference on the Scientific Results of the First GARP Global Experiment (FGGE) and the AMS 66th Annual Meeting.

The theme of the conference will be ocean-atmosphere coupling, with sessions devoted to measuring, parameterizing and modelling various aspects of the interrelationships between oceanic and atmospheric layers from thermocline to cloud base.

Titles and abstracts should be submitted by 8 July 1985 to the program chairman. Two abstracts are required: a short abstract (100 word limit) for publication and a reviewer's abstract of 200-400 words, both to be typed double spaced. Please include address and telephone number on the reviewer's abstract.

Program Committee:

Mark A. Donelan, Chairman  
Canada Centre for Inland Waters  
P.O. Box 5050, Burlington, Ontario  
Canada, L7R 4A6 Tel: (416) 637-4231  
637-4326

Kristina Katsaros  
Ruby Krishnamurti  
Duncan Ross  
Richard Somerville  
Gasper Valenzuela

Some presentations are particularly well suited to poster sessions. Participants who wish to use this method of presentation should so indicate on their abstracts.

CALL FOR PAPERS - 43rd FID CONFERENCE AND CONGRESS

Montréal, September 14-18, 1986

Information, Communications and Technology Transfer will be the theme of the 43rd Conference and Congress of the International Federation for Documentation (FID) in Montréal, Canada, September 14-18, 1986. Proposed topics include new techniques for information handling and information transfer, advances in communications systems,

advances in computer system, electronic publishing, electronic document delivery systems and all aspects of technology transfer. The conference languages will be English and French. Original papers in either language are requested.

Authors are requested to submit six copies of a summary of a proposed paper to the conference chairman not later than June 30, 1985.

Mr. E.V. Smith, Director  
CISTI, National Research Council of Canada  
Ottawa, Ontario  
Canada K1A 0S2

APPEL DE COMMUNICATIONS - 43e CONFERENCE ET CONGRES DE LA FID

Montréal, 14 au 18 septembre 1986

Information, communications et transfert de la technologie constitueront le thème de la 43e Conférence et du Congrès de la Fédération internationale de documentation (FID) qui aura lieu du 14 au 18 septembre 1986 à Montréal, Canada. Les sujets proposés comprennent les nouvelles techniques pour le traitement et le transfert de l'information, les progrès des systèmes de communication et des systèmes informatiques, la publication électronique, les systèmes électroniques de fourniture de documents et tous les aspects du transfert de la technologie. Le français et l'anglais seront les langues officielles de la conférence. Nous demandons des communications originales dans l'une ou l'autre langue.

Les auteurs doivent présenter un résumé en six exemplaires d'une communication proposée au président de la conférence au plus tard le 30 juin 1985.

M. E.V. Smith  
ICIST, Conseil national de recherches du Canada  
Ottawa (Ontario) Canada  
K1A 0S2



## Canadian Meteorological and Oceanographic Society La Société Canadienne de Météorologie et d'Océanographie



The Canadian Meteorological and Oceanographic Society exists to advance all aspects of meteorology and oceanography in Canada. It assumed its present constitution in June 1977. This development recognized the growth and contributions of an active Oceanographic section within the parent Canadian Meteorological Society established in 1967. Membership in the Society is open to individuals and organizations with interests in the fields of meteorology and/or oceanography.

Through its fourteen local Centres and Chapters, the Society provides a forum for members to participate in discussions and hear guest speakers. Members with special interests in the fields of hydrology, air pollution, agriculture, operational meteorology or floating ice are encouraged to join Special Interest Groups within the Society.

The Society sponsors an annual Congress each spring, usually lasting three days, where papers are presented and discussed, various awards are given, and the yearly business meeting is held. The location of the Congress varies, with the local Centres serving as hosts.

The Society publishes four periodicals including the CMOS Newsletter which carries correspondence, notices, book reviews and other items of general interest to members. Atmosphere-Ocean is a quarterly scientific journal containing articles on all aspects of meteorology and oceanography as well as relevant notes, correspondence, and book reviews. The Climatological Bulletin is a semi-annual journal containing articles and notes of particular interest to the field of climatology. Chinook is a quarterly magazine giving a more popular treatment to meteorological and oceanographic themes. The Newsletter is distributed to all members free of charge while the other publications are available at favourable subscription rates.

New members are accepted into the Society by the National Executive at approximately monthly meetings.

La Société Canadienne de Météorologie et d'Océanographie a pour but de stimuler tous les aspects de la météorologie et de l'océanographie au Canada. Sa constitution actuelle date de juin 1977. C'est à cette époque que la Société canadienne de météorologie changea son nom pour tenir compte de la croissance de sa section d'océanographie. Toute personne ou organisation intéressée à la météorologie et/ou à l'océanographie peut en devenir membre.

Les quatorze centres locaux et sections de la Société fournissent aux membres autant de lieux pour discuter et recevoir des conférenciers invités. Les membres intéressés plus particulièrement à l'hydrologie, à la pollution de l'air, à l'agriculture, à la météorologie d'exploitation ou à la glace dérivante sont encouragés à joindre des groupes d'intérêts spéciaux au sein de la Société.

La Société parraine un Congrès annuel au printemps d'une durée de trois jours où l'on présente et discute des exposés, où l'on distribue des récompenses et où l'on tient la réunion générale annuelle. L'emplacement choisit pour le congrès varie selon le centre qui en est l'hôte.

La Société publie quatre périodiques, dont Le Bulletin de nouvelles de la SCMO. Le Bulletin publie des lettres, des avis, des revues de livres et d'autres communications d'intérêt pour les membres. Atmosphère-Océan est le journal scientifique trimestriel qui renferme des articles sur tous les aspects de la météorologie et de l'océanographie, de même que des notes, lettres et revues de livres appropriées. Le "Climatological Bulletin" est un journal semestriel qui renferme des articles et des notes d'intérêt sur la climatologie. "Chinook" est un périodique trimestriel qui publie des articles plus généraux sur les thèmes météorologiques et océanographiques. Le Bulletin de nouvelles de la SCMO est distribué sans frais additionnels à tous les membres. Les membres peuvent souscrire aux autres périodiques par abonnement à taux favorables.

Les demandes d'adhésion sont approuvées par le bureau d'administration à ses réunions mensuelles.

### ANNUAL FEES/ COTISATIONS ANNUELLES

Regular Membership/Membre régulier	- \$20.00
* Student Membership / Membre étudiant	- 12.00
* Corporate (Sustaining) Membership / Membre Corporatif (Soutien)	- 75.00 (minimum)

### \* ANNUAL SUBSCRIPTION RATES FOR MEMBERS/ABONNEMENTS ANNUELS POUR MEMBRES

Atmosphere-Ocean/Atmosphère-Océan	- \$20.00
Climatological Bulletin	- 10.00
Chinook	- 7.50

\* Note: Atmosphere-Ocean is included in the Student Annual Fee and all Society publications are sent to Corporate Members.

\* Note: les membres étudiants reçoivent Atmosphère-Océan et tous les périodiques sont envoyés aux membres corporatifs.

CMOS - SCMO

Suite 805

151 Slater St.

Ottawa, Ontario, Canada

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