

Combined contributions from IAMAS commissions collected by the Assistant Secretary General Zheng (Jenny) LIN

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Sec.-Gen., IAMAS

IAMAS Commission Reports 2008

1. ICACGP (submitted by John Burrows)

Introduction

The iCACGP comprises a commission of 3 officers (President, Vice President and Secretary), 21 members and 7 honorary members. Its role is to facilitate research of significance for atmospheric chemistry and global pollution.

iCACGP aims to:

- Promote research on chemistry and composition of troposphere related to global pollution and climate change
- Initiate, facilitate and coordinate the research programs in this field, which require international cooperation.

The current main objectives of global atmospheric research are:

- to provide a fundamental understanding of the processes that govern the behaviour of chemical compounds in the atmosphere and their impact on climate.
- to contribute with [the partners of the international atmospheric chemistry research community](#) to the development of an integrating framework describing the physical, chemical and biological interactions between the different components of the Earth system
- to improve our ability to predict atmospheric composition over the coming decades through integrating models, with process studies and comprehensive data sets.
- to address societal needs through application of atmospheric chemistry research and development of research that integrates human dimensions into Earth System Science.

In this context it has co-sponsored the IGBP activities IGAC and SOLAS. The members of CACGP are closely involved with the activities of IGAC and SOLAS.

iCACGP Activities in 2008

A) Organisation of Conferences

IGAC and ICACGP share every four years the organisation of the joint iCACGP/IGAC conference. The 11th CACGP Scientific Conference was coupled with the 9th IGAC Conference in 2006 and was entitled Atmospheric Chemistry at the Interfaces and took place in Cape Town from 17th to 23rd September 2006 in South Africa. IGAC organises its scientific conference on a biannual basis.

The next joint iCACGP/IGAC conference is scheduled from 11th to 16th July 2010 in Halifax Nova Scotia, Canada.

i) Support for the preparation of the 10th IGAC Conference

The 10th International Global Atmospheric Chemistry International Conference entitled “Bridging the Scales in Atmospheric Chemistry : Local to Global” took place from the 7th to 12th September 2008 in Annecy, France. Details are found on the IGAC <http://www.igacfrance2008.fr/>. This conference was organised by the local organising committee, based at CNRS and IGAC project Offices <http://www.igac.noaa.gov/>. The number of scientific contributions to the meeting was approximately 650.

The members of the iCACGP were involved in supporting the organisation of the 10th IGAC Conference by participating in the programme committee and by making presentations at this very successful meeting. There is significant overlap between the current IGAC scientific steering committee and the iCACGP, including both iCACGP President and the IGAC’s new co-Chair, which facilitates the smooth coordination of IGAC and iCACGP activities

ii) Preparation for the iCACGP Conference in Halifax Nova Scotia, Canada, 11-16 July 2010.

During the course of the year 2008 Halifax was selected as the next venue for the joint iCACGP and IGAC Conference for 2010 among three proposals. The business plans and presentations of the 3 proposals to host this joint Conference that have been considered remain available on the website of the Commission. Professor James Drummond of Dalhousie University is the chair of the local organising committee, which is based at Dalhousie University Halifax, is now preparing the ground for the meeting in 2010. Potential title for this venue is 'Atmospheric Chemistry: Challenging the Future'.

iii) Preparation of Symposia for the MOCA 2009 in Montreal.

For the MOCA 2009 (IAMAS –IAPSO-IACS Joint Assembly), the Commission is organising and co-organising the following 3 sessions:

- M15 Atmospheric Composition Change: Air Pollution in the Global Environment (Convenors: Maria Kanakidou, David Edwards, John Burrows, Kimitaka Kawamura, Young J. Kim- all iCACGP commission members)
- M13 Aerosol-Cloud-Radiation-Precipitation Interactions (convenor: U. Lohmann –also iCACGP member) (co-organized with *IRC*, *ICCP*, *ICACGP*)
- J13 Biogeochemistry and Climate (co-convenor: J. Burrows)

B) iCACGP Commission Meeting

An iCACGP meeting of the commission members was organised and took place on the 9th and 10th of September during the IGAC Scientific Conference in Annecy.

The meeting addressed the future activities of iCACGP and focussed on outreach issues and the preparation for the next joint iCACGP/IGAC science conference in 2010.

C) President’s Activities

- Participation in the IGBP meeting, which took place in May 2008 in South Africa.
- Presentation of iCACGP activities and priorities at the IGAC and SOLAS SSCs in May 2008 in S. Africa.
- Participation to the GESAMP WG 38 on ‘The Atmospheric Input of Chemicals to the Ocean’ first meeting organised by R. Duce and P. Liss in Arizona in Dec 2008.

D) Liaison to IGAC and to SOLAS

- Several CACGP members (M. Kanakidou, T. Zhu, J. Drummond, P. Monks, Y. Kondo) are also members of IGAC SSC, thus no particular liaison person has been named from iCACGP.
- Prof. N. Kubilay who is member of both SOLAS SSC and ICACGP has been named as liaison for iCACGP and SOLAS SSC. She will represent the Commission to the forthcoming SOLAS SSC meeting.

E) Advice and endorsement of SSC changes for the two sponsored activities SOLAS and IGAC coordinated with the other co-sponsors (SCOR, WCRP -WMO and IGBP for SOLAS and IGBP for IGAC)

2. ICAE (submitted by Daohong Wang in July, 2008)

We successfully held 13th International Conference on Atmospheric Electricity in Beijing last August with the attendance of IAMAS President, Prof. Wu. We also published two issues of newsletters as attached in this mail. These days there are more peoples (especially from developing countries) showing interest in mitigation of lightning hazard, so our ICAE mailing list has been nearly doubled from the August of 2007. From the two newsletters, you could find information about ICAE activity, especially the new publications contributed by our commissions.

3. ICCL (submitted by Neil Holbrook in July, 2008)

Nobel Peace Prize

The Norwegian Nobel Committee decided that the Nobel Peace Prize for 2007 be shared, in equal parts, between the Intergovernmental Panel on Climate Change (IPCC) and Albert Arnold (Al) Gore Jr. “for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change” [see <http://nobelpeaceprize.org/>]. The IPCC, together with Al Gore, were awarded the Nobel Prize in Oslo in December 2007. Dr Michael MacCracken, past president of IAMAS and of ICCL, was privileged to attend the awarding of the 2007 Nobel Peace Prize to the Intergovernmental Panel on Climate Change and to former US Vice President Al Gore in Oslo, Norway, December 10, 2007. Also attending were 25 of the leaders and lead authors of IPCC. The IPCC completed its Fourth Assessment Report in 2007.

International meetings with sessions on geo-engineering

The following meetings with geo-engineering sessions was attended by Dr Mike MacCracken (Past President of IAMAS and ICCL)

- ⌚ World Federation of Scientists, 38th Session of the International Seminars on Planetary Emergencies, 19-23 August 2007, Erice, Sicily, Italy
- ⌚ Pontifical Academy of Sciences, Symposium on Planetary Emergencies (The Vatican, December 19-20, 2007)
- ⌚ Climate Engineering Workshop, organized by Harvard University and the University of Calgary, held at the American Academy of Arts and Sciences, Cambridge MA, November 7-9, 2007

International Climate Activities and/or Outputs

In SPAIN

Effects of Climate Change on the World's Ocean symposium

The \$2k of IUGG support received this year in response to the proposal from ICCL President Keith

Alverson was used to support a few young developing country scientist to attend the very successful "Effects of Climate Change on the World's Ocean" symposium held in Gijon Spain from 19-23 May 2008

(http://www.pices.int/meetings/international_symposia/2008_symposia/Climate_change/climate_support.aspx).

In JAPAN

Innovative Program of Climate Change Projection for the 21st Century

In Japan, a 5-year project "Innovative Program of Climate Change Projection for the 21st Century (KAKUSHIN Program)" has commenced (FY2007 - 2011).

The KAKUSHIN Program is using the Earth Simulator and is targeting three major themes:

- ⌚ Advancing climate modeling and projection for better simulation of physical and biogeochemical processes by sufficient reflection of feedbacks;
- ⌚ Quantification and reduction of uncertainty for more reliable projections of climate change using model comparisons and other methodologies;
- ⌚ Application of regional projections to natural disasters for better assessments of natural disasters caused by extreme events using sufficiently high-resolution regional projection.

Three teams participating in the KAKUSHIN Program are covering these three themes through the following respective foci.

1. Long-Term Global Change Projection: Frontier Research Center for Global Change (FRCGC/JAMSTEC)
2. Near-Term Climate Prediction: Center for Climate System Research (CCSR), the University of Tokyo
3. Extreme Weather Event Projection: Meteorological Research Institute (MRI)

For details see <http://www.kakushin21.jp/eng/index.html>

In USA

Michael MacCracken (past President of IAMAS and ICCL) was invited by the Air and Waste Management Association as a "senior" scientist to prepare an interpretive review on the science of climate change. Dr MacCracken prepared a paper (MacCracken 2008) that covers a selection of key points and draws from across (and even before) the IPCC series of four assessments, summarizing the key messages while also including answers to frequently asked questions about climate change. Dr MacCracken also offers some personal thoughts of where things are headed and includes results from some newer papers. Finally, he offers some thoughts on how to break the seemingly international deadlock in the negotiations and get the world on a path that can keep the temperature increase below

2 °C (which is probably higher than we really want given how Greenland is starting to deteriorate, the permafrost is thawing, etc.). There are three documents in total: the main critical review, supplementary material to it, and a summary version of the article. All are downloadable from <http://www.climate.org/topics/climate-change/maccracken-proposal-north-south-framework.html>.

The main citation is: MacCracken, M. C., 2008: Prospects for Future Climate Change and the Resources for Early Action, *Journal of the Air and Waste Management Association*, **58**, 735-786.

International CLIVAR workshop on ENSO theory

A CLIVAR workshop on ENSO theory was held in Puna in Hawaii in June 2008. This covered numerous issues including ENSO and climate change.

<http://www.clivar.org/organization/pacific/pacific.php>,

<http://iprc.soest.hawaii.edu/~axel/ENSOSummerschool.html>

In AUSTRALIA

Ocean Acidification Workshop

Scientists from diverse Australian and international research and government institutions, and a broad array of disciplines, convened in Hobart, Tasmania, from 2 to 4 June 2008, to summarise the current state of knowledge of ocean acidification and its effects on ocean chemistry and the marine biota of

Australian waters. The workshop represents the first such meeting focussed specifically on understanding the impacts of ocean acidification in Australian and Antarctic/Southern Ocean waters and on setting a research agenda for the region. The workshop was sponsored by the Australian Government Department of Climate Change and the Antarctic Climate & Ecosystems (ACE) CRC, and was chaired by Dr. Will Howard, ACE CRC, and Dr. Bronte Tilbrook, ACE CRC & CSIRO Wealth from Oceans Flagship.

Climate Change in Australia Report

CSIRO and Bureau of Meteorology release most comprehensive report on climate change for Australia to date .CSIRO-Bureau of Meteorology, 2007: *Climate Change in Australia*, CSIRO, 148 pp. <http://www.climatechangeinaustralia.gov.au/resources.php>. The report includes the world's first probabilistic projections at a national scale.

Australian attitudes towards climate change

Remarkable changes in Australian attitudes towards global warming have recently been reported (Power et al. 2008). The frequency of articles on climate change in Australian newspapers soared in 2006 (see plot). Reference: Power et al., 2008, Bulletin of WMO ("MeteoWorld", http://www.wmo.ch/pages/publications/meteoworld/australia_en.html). Power, S., N. Plummer, K. Pearce, D. Walland, S. Edwards, D. Jones, S. Gipton, P. Holper, and R. Whitehead, 2008: Changes in Australian attitudes towards global warming. *MeteoWorld*, Weather, Climate, Water, April 2008, World Meteorological Organization, http://www.wmo.int/pages/publications/meteoworld/australia_en.html

Climate change and tropical cyclones

Priorities for research of tropical cyclones in the context of climate change were identified at a national (Australian) workshop: Power, S., and K. Pearce (Eds.), 2007: Tropical cyclones in a warming world. Priorities in research. BMRC Research Rep. 141, 48 pp. <http://www.bom.gov.au/bmrc/pubs/researchreports/researchreports.htm>.

Greenhouse conferences in Australia

Greenhouse 2007 [held from 2-5 October 2007 at The Hilton, Sydney Australia] provided a unique opportunity to hear the latest findings in climate science, and discuss the implications for Australia and the region. The conference focused on projections for the future ; the use of probabilities for risk management ; the impact climate change will have on human activity ; and changing perceptions of climate change. See : <http://www.greenhouse2007.com/>

An important conference on climate change called Greenhouse 2009: Climate Change & Resources will be held in Perth Australia in 23-26 March 2009: <http://www.greenhouse2009.com/>. This conference incorporates the World Climate Research Program's International Workshop on El Nino and Climate Change.

4. ICCP (submitted by David Starr)

Scientific Assembly

The 15th International Conference on Clouds and Precipitation was held in Cancun, Mexico, between 7 and 11 July, 2008. The conference was organized by the ICCP (International Commission on Clouds and Precipitation, a commission of IAMAS) and it was co-sponsored by the IUGG, IAMAS and the WMO (World Meteorological Organization). Financial support for students and young scientists from less developed countries was provided by the WMO, the IUGG, IAMAS and the ICCP. IAMAS contributed \$5,985 and IUGG contributed \$2000. Subsidies of more than \$23,000 were provided to 24 students from 15 countries, and 8 scientists from 8 countries to enable their participation. There also was a reduced conference registration fee for students. The local organizing committee was headed by Prof. Graciela Raga, from the University of Mexico. The scientific and program committee was headed by Prof. Zev Levin, President of the ICCP. The Conference website contains the detailed program and an archive of the extended abstracts

(<http://cabernet.atmosfcu.unam.mx/ICCP-2008/>). About 400 scientists, including 80 students attended the conference, presenting about 550 papers in oral and poster presentations (out of about 600 papers that were submitted). The presentations covered a wide range of topics on the formation of

clouds and precipitation, the interactions of aerosols and clouds, the effects of clouds on climate, new instrumentation for measuring various processes in clouds and many more. Special sessions were devoted to reports on results from RICO (Rain in Cumulus Over the Ocean), a field campaign that took place in the Western Caribbean, November 2004 to January 2005, and to reports from the ice nucleation comparison workshop (AIDA) that took place in Karlsruhe Germany, September 2007.

Scientific Workshop

The ICCP co-sponsored the 7th WMO International Cloud Modeling Workshop held in Cozumel, Mexico, immediately following the International Conference on Clouds and Precipitation. Details about this quadrennial workshop are available at http://www.mmm.ucar.edu/events/wmo_workshop08/

Awards

During the conference, Prof. Roland List of the University of Toronto, the former Secretary General of IAMAS was elected as an honorary member of the International Commission on Clouds and Precipitation in recognition of his many years of outstanding scientific contributions and his unselfish service to the international cloud physics community.

Obituaries

Prof. Peter V. Hobbs (USA) – former 2-term President of ICCP
Prof. Albert Chernikov (Russia),
Dr. Yoram Kaufman (USA)
Dr. Brian Ryan (Australia),
Dr. Solomon M. Shmeter (Russia),
Dr. Henri Laurent (France).

Future

The 16th International Conference on Clouds and Precipitation will be held during the summer of 2012 in Leipzig, Germany, hosted by the Leibniz Institute for Tropospheric Research. The 18th International Conference on Nucleation and Atmospheric Aerosols will be held in Prague on August 10-14, 2009. The Committee on Nucleation and Atmospheric Aerosols, a subcommittee of the ICCP, brings together scientists covering the following subject areas: Nucleation Theory & Experiment, Tropospheric & Stratospheric Aerosols, Cloud Drop and Ice Nucleation, and Aerosol-Climate Interactions. Details are available at: <http://www.icnaa.cz/>

5. ICDM (submitted by Richard Swinbank)

The activities of the International Commission on Dynamical Meteorology (ICDM) during 2008 have been focused on preparations for the MOCA-09 assembly taking place in Montreal in 2009. ICDM is sponsoring or co-sponsoring seven IAMAS sessions on several different topics relating to dynamical meteorology. The commission is also co-sponsoring two joint (inter-association) sessions, on tropical cyclones and data Assimilation.

6. ICMA (submitted by Shigeo Yoden)

Conferences

ICMA co-sponsored some symposia in the 37th COSPAR Scientific Assembly
Date: July 13-20, 2008
Place: Montreal, Canada

Symposia:

C23 “Variability of the Middle Atmosphere and Lower Ionosphere in Composition and Dynamics Induced by External Forcing from Space”

C22 “Multi-Scale Wave Coupling and Energetics from the Troposphere to the Ionosphere”

Workshops

ICMA co-sponsored the 5th IAGA/ICMA/CAWSES Workshop on Long-Term Changes and Trends in the Atmosphere

Date: September 9-12, 2008

Place: St.Petersburg, Russia

Summary: The workshop was held in the Arctic and Antarctic Research Institute in St. Petersburg, Russian Federation, on 9-12 September 2008. It was attended by 45 scientists (including a few doctoral students) from four continents, Europe, Asia, Northern America and Southern America. Altogether 33 oral (including twelve invited) and 7 poster papers were presented. Program Committee: J. Lastovicka (chairman), G. Beig, J. Emmert, M.Jarvis, O. Troshichev (chairman of LOC). The workshop was focused on long-term changes trends in the mesosphere, thermosphere and ionosphere. However, papers on trends in the stratosphere (including ozone), stratosphere/troposphere and stratosphere/upper layers interactions, on tropospheric trends, and on long-term changes in solar wind/geomagnetic activity were presented, as well.

New publications

Kevin Hamilton (former ICMA President), 2007: “Featured Commission: The International Commission on the Middle Atmosphere (ICMA)”, *IAMAS Newsletter*, **6**, p.3.

Other activities

ICMA opened its new WEB page at (new URL) <http://www.icma-iamas.org/>

7. IOC (submitted by Sophie Godin-Beekmann in July, 2008)

Meetings

1. **A symposium was organised in Athens, Greece, for the 20th Anniversary of the Montreal Protocol, on September 23rd – September 26th 2007.** At the invitation of UNEP, WMO, EESC, IO3C, The Academy of Athens, the Biomedical Research Foundation and the National Observatory of Athens, a core group of speakers who have played an important role in the success of the Montreal Protocol, gathered to present state of the art scientific results and discuss the success of the implementation of the Montreal Protocol. The symposium brought together scientists including S. Rowland, P. Crutzen and M. Molina (Nobel Prize for Chemistry in 1995), policy makers, industry people and NGOs who have contributed to the protection of the ozone layer. Based on the outcome of the Symposium, the Athens statement was prepared and presented to the international community. For more information, see the website of the Commission at <http://ioc.atmos.uiuc.edu>

2. **The Quadriennial Ozone Symposium was held in Tromsø (Norway) on June 30th – July 5th 2008, at the invitation of University of Oslo.** More than 350 scientists from various countries attended the meeting. At this occasion, the Dobson Award was awarded to both Veronica Eyring (Germany) and Bjorn-Martin Sinnhuber (Germany) for their contribution to ozone science. More information on the symposium can be found at <http://www.qos2008.no>

New officers of the Commission elected at the Quadriennial Ozone Symposium in 2008

Prof. Christos Zerefos, President (Athens, Greece)
Dr. Richard S. Stolarski, Vice-President (Greenbelt, USA)
Dr. Sophie Godin-Beekmann, Secretary (Paris, France)

8. ICPAE (submitted by Darrell F. Strobel)

SHORT INTRODUCTION OF ASSOCIATION

The International Commission on Planetary Atmospheres and their Evolution (ICPAE) is one of the ten commissions of the International Association of Meteorology and Atmospheric Sciences (IAMAS), which is in turn part of the International Union of Geodesy and Geophysics (IUGG). ICPAE focuses its activity on the study of environmental conditions in the gaseous envelopes of planetary objects and their evolution, including tenuous planetary atmospheres (exospheres) and cometary comas.

The ICPAE primary functions are: 1) to promote scientific work in the field of planetology in general and atmospheric sciences in particular by maintaining liaison among active research workers; 2) to organize symposia on ICPAE subjects at the biannual meetings of IAMAS; and 3) to co-ordinate contacts and research exchange among related associations such as the Division of Planetary Sciences (DPS of AAS), the European Geophysical Union (EGU), the Asia and Oceania Geophysical Society (AOGS) and to co-sponsor meetings and workshops during the Assemblies.

ADMINISTRATION

The ICPAE consists of the scientists actively working on the field of planetary atmospheric physics. It currently includes more than 40 members including the President, the Vice-President, and the Secretary (A. Coustenis, D. Titov, D. Strobel).

EC & Bureau meetings

Changes in administration (setting up of new Commissions, Working Groups, etc., or termination of old Commissions, Working Groups, etc.)

others

ACTIVITIES

Scientific Assemblies, Workshops/Symposia etc.

The following International meetings in 2008 were organized/co-sponsored by ICPAE.:

European Geosciences Union Assembly (Vienna, Austria, 14-18 April, Session PS4.0)

Asia Oceania Geophysical Society (AOGS) 2008 (Busan, South Korea, 16-20 June, Sessions PS05 & PS08)

COSPAR 2008 (Montreal, Canada, 13-20 July; Session B03)

Scientific Programmes, Projects, Publications

ICPAE co-sponsored the publication of the Planetary and Space Sciences Special issue : Volume 56, issue 12, November 2008, Eds A. Coustenis, S. Atreya, P. Casavecchia, J. Castillo, O. Dutuit, H. Hussmann and F. Sohl.

Awards/Anniversaries/Obituaries

PLANNED FUTURE ACTIVITIES/ ANNOUNCEMENTS

ICPAE has scheduled for IAMAS-IAPSO-IACS Joint Assembly-2009 the following symposia: J20 Atmospheres and Ices of Terrestrial Planets and M18 Comparative Atmospheres of the Giant Planets and their Satellites. Due to restrictions on "foreign" travel by NASA scientists and certain categories of NASA funded scientists this current fiscal year, the number of abstracts submitted is approximately one-third of the actual number of papers given at the ICPAE meeting in Perugia.

9. IRC (submitted by Teruyuki Nakajima)

Officers for 2004-2008

President: Teruyuki Nakajima
Vice President: Robert G. Ellingson
Acting Vice President: Robert F. Cahalan
Secretary: Carmine Serio

IRC selected new officers for the term 2008-2012, effective from 30 December 2008
Also, new members have been selected for the term.

President: Robert F. Cahalan
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Meetings:

International Radiation Symposium (IRS2008) has been held during August 03-08, 2008 in Foz do Iguacu, Brazil. <http://www.irs2008.org.br/>
Chair of the scientific organizing committee: Prof. Teruyuki Nakajima (CCSR/UT); Chair of the local organizing committee: Prof. Márcia Akemi Yamasoe (IAG-USP). IRC business meeting was held on August 5, 2008.

International TOVS Study Conferences-16, 7-13 May 2008, Angra Dos Reis, Brazil
<http://cimss.ssec.wisc.edu/itwg/itsc/>

Publications:

IUGG Year Book: IRC for 2005-2008
IAMAS News Letter, July 2005, Featured Commission: The International Radiation Commission (IRC), pp 3. (available at the IRC web site)
Kirill Kondratyev: Obituaries, BAMS 2006 Oct. 1420-1421, T. Nakajima, H. Bolle, W. Smith, J. Lenoble, and Y. Timofeev.
IRC History, H.-J. Bolle, 2008, published by IAMAS Publication series #1

IRC2008 gold medal and young scientist awards:

Gold medal: Prof. Graeme L. Stephens (State University of Colorado, USA)
Young Scientist Awards:
Dr. Ilan Koren (Weizmann Institute of Science, Israel)
Dr. David C. Tobin (Space Science and Engineering Center, University of Wisconsin-Madison, USA)