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OBITUARY
HARUO TANAKA
1922 - 1985

We regret to announce the death of Professor Haruo Tanaka on 27 October 1985 in Tokyo after a stroke at the age of 63. Professor Tanaka, of the Toyo University and Professor Emeritus of the Nagoya University, was the President of the URSI Committee in Japan and a member of the Science Council of Japan.

He started his career in radio astronomy as one of the pioneers in Japan, in 1949, at the Research Institute of Atmospherics, Nagoya University, where he designed and completed an 8-cm radiometer in 1951, and also an interferometer at 4000 MHz of grating type, of 5 elements in 1953 and 8 elements in 1954. These two instruments were the initial steps for his great contributions in solar radio astronomy, in the world as well as in Japan, on precision measurements of the solar radio noise and on the location of radio noise sources on the Sun at microwaves. He became Director of the Research Institute of Atmospherics of the Nagoya University in 1965 and in 1971, each time for one term. During these years, and later on, he took the leadership in organizing several international programmes in radio astronomy and in solar-terrestrial physics.

In 1976 he moved to the Tokyo Astronomical Observatory, University of Tokyo, where he directed the construction of the mm-wave 45-m dish and 5-element synthesis interferometer, and also the establishment of the Nobeyama Radio Observatory. In 1982 he retired from the University of Tokyo, after having laid sound foundations for new mm-wave observations at the Nobeyama Radio Observatory, and moved to Toyo University, where he continued his activities in education and research, particularly on an application of the holography technique in the surface accuracy measurements to the 45-m dish.

He succeeded to the late Prof. T. Hatanaka as Chairman of the Commission V (later J) of the URSI Committee in Japan (1963-1982). He contributed to URSI Commission J as Vice-Chairman (1975-1978) and as Chairman (1978-1981). He was President of the URSI Committee in Japan from 1982 until his

death. In July 1985 he was appointed a member of the Science Council of Japan, with hopes and visions for the future in wide fields of science such as astronomy, radio science, space sciences, etc. He was very healthy and, until the very morning of his death, he devoted his time to these scientific and academic activities.

S. Enomé

NEWS FROM MEMBER COMMITTEES

KLEINHEUBACH 1985

The URSI Committee in the Federal Republic of Germany held its annual meeting in Kleinheubach from 7 to 12 October. Each year the accent is laid on a few specific topics. In 1985 these were:

1. Integrated circuits for data processing
2. Speech processing - methods and applications
3. Biological effects of electromagnetic fields
4. Imaging methods of remote sensing in medical applications.

The meeting was attended by some 185 delegates, some 20 of them foreign participants. Some 80 papers were presented. On Thursday 10 October, a special colloquium was organized to celebrate the 90th birthday of Prof. Runge, one of the pioneers of microwave work in Germany. Dr. Albrecht, Vice-President of URSI and President of the URSI Committee in the FRG, acted as master of ceremonies. The meeting was attended by the President and the Secretary General of URSI.

The annual meeting of the Committee in the Federal Republic of Germany is held in Kleinheubach Castle, built in baroque style, and completed in 1732 (see URSI Bulletin No 231). Following a worthwhile tradition, a concert was given in the Marble Hall of the Castle on the evening preceding the end of the meeting. The programme, featuring works by Frescobaldi, Buxtehude, Händel, Quantz and Telemann, was performed by a quartet consisting of three young professional musicians conducted by Prof. Frisius, a member of the URSI Committee who played the harpsichord continuo.

J. Van Bladel

ONE-DAY SYMPOSIUM ON RADIO SCIENCE IN IRELAND

DUBLIN, 6 NOVEMBER 1985

This Symposium was organised by the URSI Sub-Committee of the Royal Irish Academy National Committee for Engineering Sciences and was, in fact, the second of a series begun in October 1984.

The meeting was attended by 45 engineers and scientists from academic, government and industrial institutions. The attendance of 45 was a major increase on the 1984 total of 30 and testifies to the increasing interest being shown in Ireland to the development of radio science. Several of the major industrial telecommunications companies in Ireland also actively participated - which was a particularly gratifying feature to the organisers.

The following papers were presented and discussed:--

- (1) The Dublin Area Cellular Radio Telephone System,
I. Cahill, L.M. Ericsson Ltd.
- (2) Utilisation of the Radio Frequency Spectrum in Ireland,
P.L. Carey, Department of Communications, Dublin.
- (3) The Cost 72 Weather Radar Project,
G.A. McDonald, Irish Meteorological Service.
- (4) Digital Transmission Performance on OTS - The Dublin/Graz Tests,
B. Mulkeen, Department of Electronic Engineering,
University College, Dublin.
- (5) Laser-Fibre Interactions in Fibre-Optic CATV,
R.F. O'Dowd, Department of Electronic Engineering,
University College, Dublin.
- (6) Radio Frequency Remote Sensing of the Marine Environment,
R. Scaife, Department of Electronic Engineering,
University College, Galway.
- (7) Microwave Design and Test Facilities at U.C.C.,
P.J. Murphy, Department of Electrical Engineering and
Microelectronics, University College, Cork.

(8) Computer-Aided Design of Microwave Receiver Circuits,
J.A.C. Stewart, Department of Electronic Engineering,
The Queen's University of Belfast.

Dublin, November 1985

M.C. Sexton
Royal Irish Academy.

COMMISSION F IN JAPAN

The Japanese members of URSI Commission F will celebrate their 300th meeting on 19 December 1985. The meetings, started in 1954 on a voluntary basis, were initially termed "Radio Meteorology Meetings". They have been held regularly at the rate of approximately ten sessions a year. During the sessions, URSI matters are discussed, but the participants also make use of the opportunity to give informal presentations of their research results. Many a young scientist has grown to full-fledged expertise through these contacts, which have also resulted in joint research efforts by major organizations.

MEETING OF THE GENERAL COMMITTEE OF ICSU
Report by W.E. Gordon, Representative of URSI

1. Resolutions and Decisions

The 20th Meeting of the General Committee:

1) *Accepts* the proposal from the Presidents of IUGG and IUGS that the ICL be extended and that the continuation of the Commission be subject to acceptance by IUGG, IUGS and ICSU of five-year reviews, and submits this to the 21st General Assembly for ratification.

2) *Resolves* that the Standing Committee on the Safeguard of the Pursuit of Science be dissolved, subject to ratification by the General Assembly, and that its activities in relation to problems "concerning the free passage of scientists and free collaboration among scientists" which are already included in the terms of reference of the Standing Committee on the Free Circulation of Scientists (SCFCS) be taken over completely by that Committee and *notes* with satisfaction that the Standing Committee on the Free Circulation of Scientists accepts to fulfil the part of the safeguard of the pursuit of science work reflected in the SCFCS terms of reference. To respond adequately to these tasks the budget of the SCFCS should be increased and thought should be given to adding 1 or 2 members to the SCFCS;

further resolves to invite COSTED to assist the Executive Board to find solutions to the "brain drain problem" in developing countries, and that other aspects of the "healthy development of science and of ICSU's objectives" should become the responsibility of an ICSU Committee on Ethics if this is established.

3) *Supports* in principle the establishment of a Scientific Committee on Biotechnology, subject to approval of its terms of reference, and

encourages the existing ad hoc Study Group to continue its activities and to consult with the Standing Group on Structure and Statutes with regard to the preparation of a final draft Constitution so as to avoid unnecessary duplication of effort with those of other international organizations.

4) *Expresses* its deep gratitude to the Deutsche Forschungsgemeinschaft, to the Bavarian Academy of Sciences and to Prof. Thureau and his staff for the generous and excellent arrangements made for the ICSU meetings;

also expresses its thanks to the Director and staff of the European Southern Observatory for their help and for the visit of the ESO Headquarters and to BMW and Rank Xerox for their assistance in the provision of facilities for the meetings; and

also expresses its grateful thanks to the Secretariat for the excellent way in which it has ensured the efficient functioning of the meetings.

2. Dues

The ICSU dues from national members for 1986 will be increased by five percent. (The URSI contributions from members remains at the 1985 level).

3. Communications among the Unions, the ICSU and the Standing Committees

Concern was expressed over the ineffective communications among the Unions, the Standing Committees and the ICSU. This will be a major item on the agenda of the Rindberg Follow-Up Committee (see Item 9) and at the next General Assembly of ICSU.

4. Associate Status

Some Unions have established an associate grade of membership with little or no dues to (1) provide an exploratory period for new members, and (2) provide an alternative for members unable to meet their obligations to the Union financially but still with some scientific activity.

5. ICSU/UNESCO Subventions 1986

According to the present scheme, all Unions receive an equal basic allocation from ICSU. This year, this will amount to \$9,733. In addition URSI has been granted \$6,000 from UNESCO funds, and \$6,000 from ICSU funds for special projects (a Workshop on Subtropical propagation and spectrum management, support of young scientists at URSI Symposia and a Course on Wave interaction phenomena with hydrological applications).

6. Scientific Committee on Problems of the Environment (SCOPE):
Environmental Consequences of Nuclear War

The report of the SCOPE-ENUWAR Steering Committee, which concludes the two-year study on the Environmental Consequences of Nuclear War was presented to the SCOPE General Assembly on 12 September. The results are being published in two volumes by J. Wiley and Sons.

The first volume deals with the physical aspects of the environmental impact of a nuclear war. The second volume addresses the biological background for the reader, each volume includes the Executive Summary of the companion volume, with its explanation of findings and research recommendations, as an appendix. In addition, the Committee has commissioned a less technical account intended for wide international distribution to fulfil the ICSU request for a "...readily understandable statement of the effects of nuclear war". It is anticipated that this third volume will be translated into several languages.

The two volumes present a consensus among the scientists concerned with the study. There is not unanimity on all points, but a concentrated effort has been made to describe those remaining points at issue. These unresolved issues suggest research that should be pursued in order to reduce the present degree of uncertainty. The report should be regarded as the first attempt by an international scientific group to bring together what must still be learned about the possible global environmental effects of nuclear war. It should not be the last. It should be taken as a point of departure rather than as a completed investigation.⁺

7. Global Change Programme

The Chairman and the Executive Secretary reported on progress in the formulation of the International Geosphere-Biosphere Programme: A Study of Global Change and, in particular, the results of the meeting in Frankfurt on 5-6 October. The President of ICSU has resigned as Chairman and will be replaced by B. Bolin. Negotiations are taking place to establish four Working Groups on:

- 1) Terrestrial ecosystems and atmospheric interactions
- 2) Marine ecosystems and atmospheric interactions

⁺The URSI contribution to the report of the SCOPE-ENUWAR Steering Committee has been published in URSI Bulletin No 232.

- 3) Geological processes: past and present
- 4) Role of solar emission in the upper atmosphere and in relation to the Earth

so that progress can be made in developing the programme in these areas prior to the next meeting of the ad hoc Planning Group.

8. Rindberg Conference

The ICSU Rindberg Conference convened to "examine ICSU's contemporary and future role in scientific cooperation", was attended by 45 persons from 25 countries. Of these 45 persons, some 15 could be considered as being either complete newcomers or having relatively little contact with ICSU.

One day of the Conference was devoted exclusively to four Working Groups, each of which turned its attention to one of the following background papers prepared for the Conference: The diverse roles of science; Intellectual spectrum and reach of ICSU; Past and future global projects; External partners. The common themes, in the reports of the four Working Groups, are briefly listed below, along with specific recommendations for action by ICSU, when such were proposed:

- a) Importance of basic sciences for science and for development
- b) Need to increase activities related to developing countries in general, by
 - involving LDC scientists through all phases of ICSU activities;
 - increasing fellowships, networks and regional activities.
- c) Raise the visibility of ICSU by:
 - establishing a press service;
 - strengthening ICSU Newsletter;
 - providing news about ICSU activities to existing scientific journals;
 - starting a new journal ("Science International").
- d) Extend links with other organizations outside ICSU's area of competence, including social scientists, engineers, medical scientists, by:
 - inviting regular meetings of Presidents of NGOs in science and technology and cognate fields;
 - setting up an ad hoc advisory group of persons from other fields;

- organize an inter-Union meeting concerned with the medical sciences , which may lead to the creation of an inter-Union Commission on medical research.
- e) Identify, design and sponsor programmes on global problems not being carried out elsewhere, in which several disciplines, within and outside of ICSU, would participate, which would have strong research components and would demonstrate benefits to developing countries (regional approaches).
- f) Increase activities in science education, especially at the university level.
- g) Set up a Committee to provide continuous monitoring of ethical questions ("Committee for the Responsibilities in Science").
- h) Change ICSU's name to International Council for Science (ICS).
- i) Increase contacts with the general public and decision-makers by:
 - using all forms of media;
 - providing an advisory service on science and scientists;
 - set up a special advisory committee on science to the UN and its specialized agencies.
- j) Increase ICSU's present financial support by:
 - setting up an ICSU Foundation or an International Foundation for Science;
 - initiate funding applications from governments;
 - organize information exchange meetings with foundations.
- k) Increase the responsibilities of the Executive Board and eliminate or change the nature of the General Committee.
- l) Increase contacts with National Members and with national bodies of scientists which may not be adhering bodies to ICSU (both in ICSU member countries and in non-member countries).
- m) Explore the concept of individual membership.
- n) Explore the concept of a supporting membership category, e.g., for industries.
- o) Involve more young scientists and more women in ICSU activities.

The Rindberg Conference was concluded by a general discussion and agreement that the process begun on this occasion should be continued in the future through similar reviews of ICSU's present and prospective role.

9. Scientific Priorities

The ICSU Sub-Committee on Scientific Priorities reviewed the activities of COSPAR, SCOSTEP, ICL, CODATA and COWAR.

9.1 COSPAR

The Sub-Committee expressed its approval of the overall programme and suggested that COSPAR try to ensure greater participation, at all levels, of countries that are now playing a more important role in space research such as India and Japan. It also suggested that every effort be made to ensure enhanced coordination of COSPAR's activities and those of the Unions. It was suggested that both COSPAR and the Unions should be informed of this need.

9.2 SCOSTEP

There was strong support of SCOSTEP's work and of the effective way in which the Committee interacted both with other ICSU bodies and with some organizations of the UN system.

9.3 Inter-Union Commission on the Lithosphere (ICL)

The ICL has proved an effective means of bringing closer together the geochemists, geophysicists and the geologists. The Lithosphere Programme and the International Geological Correlation Programme are currently the two most ambitious programmes in this field although the IGCP is more a collection of research projects. The relations between ICL and the Unions are excellent.

The Executive Committees of IUGG and IUGS recommend and ICSU agrees to the extension of the Lithosphere Programme beyond 1990 to ensure that the essential, valuable links among IUGG-IUGS-ICSU be maintained and that the continuation of the Commission be subject to acceptance for a five-year review by the three bodies. The reason for the proposal now is the time lost between the end of the Geodynamics Programme and the effective start-up of the Lithosphere Programme - almost six years.

9.4 CODATA

The Sub-Committee was in unanimous agreement on the importance and effectiveness of CODATA's activities.

9.5 COWAR

It was agreed to seek the views of the Unions concerned about the utility of continuing COWAR.

October 1985

7TH EUROPEAN CONFERENCE ON CIRCUIT THEORY AND DESIGN ECCTD'85

The First European Conference on Circuit Theory and Design (ECCTD) was held in 1974 in London. The following Conferences took place in Genova (1976), Lausanne (1978), Warsaw (1980), The Hague (1981) and Stuttgart (1983). In 1985, the Conference was held in Prague, Czechoslovakia, from 2 to 5 September. It was organized jointly by the Institute of Radio Engineering and Electronics of the Czechoslovak Academy of Sciences and by the Electrotechnical Faculty of the Czech Technical University, and sponsored by URSI for the first time. The Conference covered almost all areas of circuit theory. There were five sections:

- a) VLSI circuit design (lay-out, integrated circuit design, statistical design, CAD and modelling).
- b) Circuit and system theory (non-linear networks, general networks, biomedical applications, phase lock loops).
- c) Communication systems and sub-systems (digital communication systems, communication theory and digital processing, sub-systems and circuits for communications).
- d) Digital signal processing (multidimensional signal processing, IIR digital filters, wave digital filters, approximation in digital filter synthesis, design of digital filters, speech processing, image processing).
- e) Filters and approximations (RC networks, approximations, mathematical tools, SAW devices, filter synthesis, analysis and synthesis of SC-networks, parasitic effects in SC-networks).

More than 200 papers have been presented during the Conference. Inaugural lectures were given by Prof. A. Fettweis (Multidimensional circuits and systems) and by Prof. K. Géher (Advances in the theory of circuit tolerances and sensitivities). There were 314 participants from 27 countries. URSI was officially represented by Prof. K. Géher.

The Proceedings of the Conference are published by the Academia Publishing House in Prague in co-edition with North Holland in The Hague. They can be ordered from:

Academia Publishing House, Vodickova 40, 112 29 Praha 1,
Czechoslovakia,

or

North-Holland Publishing Company, P.O.Box 211, 1000 AE
Amsterdam, The Netherlands.

The next ECCTD Conference will be held in Paris in
September 1987.

5TH INTERNATIONAL CONFERENCE ON INTEGRATED OPTICS
AND OPTICAL FIBRE COMMUNICATION
11TH EUROPEAN CONFERENCE ON OPTICAL COMMUNICATION

The IOOC-ECOC '85 was held in Venice, Italy, from 1 to 4
October 1985. It was organised at the Fondazione Cini by the
International Communications Institute of Genoa in coopera-
tion with six Italian institutes and societies. It was spon-
sored by EUREL, IEEE Region 8, IEEE/QEAS, URSI, etc. Over 900
participants attended the Conference.

The subjects of the sessions included, among others: fibre
fabrication, optical waveguide devices, polarization, laser
diodes, integrated optics, system technology, optoelectronic
integrated circuits, coherent optical systems, coherent trans-
mission technology, single mode fibres and couplers, future
optical communications. Advanced mid-infrared fibres are
expected to lead to 10^{-2} dB/km optical loss level at 2550 nm
(Tran, NRL). Lundquist and Anderson discussed 1 GHz communica-
tion in the 3500-5500 nm region. The prospects of simple
flexible optical repeaters were given by O'Mahoney (Brit. Tele-
comm.) and Simon, Vassalo, Landousies (CNET). High sensitivity
high speed receivers have In Ga As/In Ga AsP/InP avalanche
photodiodes and low capacity Ga As FET preamplifiers for up to
4 Gb/s (Kamper, Bell Tel.) at 1300 and 1500 nm. Olshansky and
Su see possibilities of 20 to 30 GHz bandwidth at 1300 nm.
Coherent optical fibre communication systems, homodyne and
heterodyne, were reviewed by Okoshi (Univ. Tokyo), Booth
(BTRL, UK), Lee (Bell Comm. Res., USA). In Japan fibre length
reached 100000 km and a 3400 km long route for a 1.6 Gb/s
system is about to be tested (Fukutomi, NTT). The British
Telecomm. reported on a 2 Gb/s optical transmission experiment

ANNOUNCEMENTS OF MEETINGS AND SYMPOSIA

XLI ALL-UNION SCIENTIFIC SESSION DEVOTED TO RADIO DAY

The Central Administration of the A.S. Popov Scientific Technical Society for Radio Engineering, Electronics and Telecommunication is planning to organize the XLI All-Union Scientific Session devoted to Radio Day in the second half of May 1986 in Moscow. The Session will last for three days.

The following subjects will be discussed during the Conference:

- Automated control systems
- Automatic switching and communication networks
- Analogue-digital computer techniques and machine modelling
- Computer technique
- Information management systems and telemechanics
- Operation research
- Cybernetics
- Methods for computer-oriented solutions of marginal problems
- Multichannel communication
- Scientific and technical information
- Scientific organization of work and management of communication enterprises
- Mail communication
- Production communication
- Radio broadcasting, electroacoustics and magnetic recording
- Data transmission and teleprocessing
- Television
- Teletraffic theory
- Theory and technique of discrete signal transmission
- Information storage systems.

The deadline for the submission of papers (length: 20 min; language: Russian) is 15 December 1985.

All persons interested in participating in the Session are kindly requested to make arrangements through one of Intourist accredited agencies.

For further information, contact:

Central Administration
The A.S. Popov Society
Kuznetskij Most 20
103897 Moscow Centre GSP-3
USSR.

Phone: 221 71 08 and 924 80 84.

6TH INTERNATIONAL SYMPOSIUM ON SOLAR-TERRESTRIAL PHYSICS

30 June - 5 July 1986

The 6th Quadrennial International Symposium on Solar-Terrestrial Physics, organised by SCOSTEP in collaboration with COSPAR, will take place during the first week of the 1986 COSPAR Meeting in Toulouse, France. It is sponsored by IUGG (IAGA and IAMAP), URSI, IAU and IUPAP.

The Chairman of the Programme Committee is Prof. B. Hultqvist and the URSI Representative on the Committee is Dr. P. Bauer.

The scientific programme is composed of five sections: Sun and the Heliosphere, Interplanetary Medium, Magnetosphere-Ionosphere System, Thermosphere, and Middle Atmosphere. Each section will contain one tutorial lecture, scheduled without any parallel activities, and a number of invited review papers. The last three sections will also contain contributed papers. The topics and the list of invited speakers and their subjects appear in the COSPAR Second Circular, circulated in October 1985 by the COSPAR Secretariat.

Information about registration, local arrangements, accommodation, travel, etc. can be found in the COSPAR First and Second Circulars. These are available from the COSPAR Secretariat (51 boulevard de Montmorency, F-75016 Paris, France).

Information concerning the scientific programme can be obtained from Dr. B. Hultqvist (Kiruna Geophysical Institute, P.O.Box 704, S-981 27 Kiruna, Sweden).

12TH EUROPEAN CONFERENCE ON OPTICAL COMMUNICATION
(ECOC 12)

The 12th European Conference on Optical Communication will be held in Barcelona, Spain from 22 to 25 September 1986. It is being organised by Telefonica, in cooperation with several national institutions. It is sponsored by EUREL, and co-sponsored by five professional societies.

This Conference will provide a forum for the presentation of both invited and contributed original papers on the subject of optical fibre and integrated optics research and will include the following topical areas:

- Materials
- Fibres and cables
- Passive components
- Active devices
- Integrated optics
- Systems and applications.

The deadline for submission of the papers is 15 April 1986 and these should be sent (typed original and four copies) to:

J.A. Martin-Pereda
Technical Programme Committee Chairman ECOC'86
Rectorado UPM
Ramiro de Maetzu, s/n
28040 Madrid
Spain.

Further details can be obtained from:

Secretariat of ECOC'86
Telefonica
R & D Department
Lérida 43
28020 Madrid
Spain

4TH INTERNATIONAL CONFERENCE
ON OPTICAL FIBER SENSORS

This Conference will be held in Tokyo, Japan, from 7 to 9 October 1986. It is being organized by the Institute of Electronics and Communication Engineers of Japan and sponsored by a number of Japanese and foreign institutions, and URSI.

The Conference Chairman is Prof. T. Okoshi (University of Tokyo) and the Chairman of the Technical Programme Committee is Dr. H. Inaba (Tohoku University).

The intent of this conference, the fourth in a series started in 1983, is to provide a forum for both invited and contributed papers on optical fiber sensors and related technologies. Sensors using the fiber itself as the sensing element and those using it as a lightguide to the sensing element are included. In addition to optical fiber sensors and their applications, discussions will include basic research on sensors and the development of sensor components, i.e., fibers, lasers, and other devices. The broad subject areas are as follows:

- Optical sensing techniques
- Optical fiber sensors
- Optical fibers
- Optical sources and detectors
- Optical components with particular reference to sensors
- Applications of optical fiber sensors.

The deadline for the submission of papers is 10 May 1986.

For further information contact:

OFS'86 Secretariat
OITDA, 20th Mori Building
7-4 Nishi, Shimbashi 2-chome
Minato-ku, Tokyo 105, Japan.

Phone: 03-508-2091.
Facsimile: 03-591-3610.

INTERNATIONAL SYMPOSIUM ON ANTENNAS

(JINA '86)

This Symposium will be held in Nice, France, from 4 to 6 November 1986. It is being organised by CNET-PAB Centre de la Turbie, SEE, CNFRS and the French Section of IEEE.

The Technical Programme Committee is chaired by M. D. Lombard and includes a number of scientists from France and abroad.

The following topics are included in the programme:

- EM Theory applied to antennas
- Reflector and lens antennas
- Antenna measurement techniques
- Antenna arrays
- Signal processing antennas
- Antennas for industrial and medical applications.

The deadline for submission of summaries of papers is 15 March 1986. Further information is available from:

Secrétariat JINA '86
CNET-PAB Centre de LaTurbie
F - 06320 Cap d'Ail
France.

Phone: 33 (93) 41 17 17.

7TH INTERNATIONAL ZURICH SYMPOSIUM AND TECHNICAL
EXHIBITION ON ELECTROMAGNETIC COMPATIBILITY

Call for Papers

After the most successful Symposium on Electromagnetic Compatibility in Zurich in 1985, with a participation of 833 delegates from 26 countries, the 7th International Zurich Symposium and Technical Exhibition is planned for 3-5 March 1987 at the premises of the Federal Institute of Technology in Zurich, Switzerland.

The "EMC 1987" will be organized under the auspices of the Director General of the Swiss PTT by the Institute for Communications Technology of the Swiss Federal Institute of Technology in Zurich. It is sponsored by the Swiss Electrotechnical Association and cosponsored by URSI. The official conference language is English.

Prospective authors are invited to submit an abstract and summary of up to 5 pages in 10 copies to:

Technical Programme Committee EMC 87
ETH Zentrum-IKT
CH-8092 Zurich, Switzerland

so that they arrive not later than 14 March 1986.

For anonymity of reviewing quote addresses, affiliations, telephone and telex numbers of all authors on a separate sheet. Submissions should clearly describe work done, including results and conclusions and should preferably be accompanied by graphs and figures. Only papers not published or submitted elsewhere will be considered.

Authors will be notified by 23 June 1986, author's kits will be included. Photo-ready manuscripts will be due by 31 October 1986. All accepted papers will be published in a Symposium Record. The best papers will receive special citations, the first three will be awarded monetary prizes of Swiss Francs 2,500, 1,500 and 1,000 respectively.

For further information contact Symposium Chairman, Prof. Dr. T. Dvorak in Zurich at (..411) 256-2790 or, in the USA, Prof. Dr. R.M. Showers (Programme Chairman) at (215)898-8123.

BOOKS PUBLISHED BY URSI PERSONALITIES

K. RAWER (former Chairman, URSI Commission G)

Modelling of Neutral and Ionized Atmospheres

in: Handbuch der Physik, vol. XLIX/7, pp. 223-535.
ISBN 3-540-11425-4, Springer Verlag, Berlin, 1984.

RECENTLY PUBLISHED PROCEEDINGS

Proceedings of the 6th Zurich Symposium on Electromagnetic
Compatibility, 5-7 March 1985.

The 680-page book is available, at the price of Swiss
francs 100,- (incl. mailing), from:

Dr. T. Dvorak
ETH Zentrum-IKT
CH-8092 Zurich
Switzerland.

Proceedings of the 1985 International Symposium on
Antennas and Propagation (ISAP), 20-22 August 1985.

The three volumes of approximately 1,200 pages are
available, at the price of 165.00 dollars (including surface
mail postage), from:

MYU Research
2-32-3-303 Sendagi
Bunkyo-ku, Tokyo 113
Japan.

LIST OF FUTURE SYMPOSIA AND MEETINGS

Note: Events marked by an asterisk are sponsored or co-sponsored by URSI.

Asia-Pacific Microwave Conference⁺
New Delhi, India, 24-28 February 1986.

Contact Address: Mr. O.P.N. Calla
Asia-Pacific Microwave Conference
c/o Delhi Earth Station
SAC, ISRO
P.O.Box 5227
Sardar Patel Marg
New Delhi 110 021
India.

Phone: 3015791
Telex: 31-65552 DES IN

International Zurich Seminar on Digital Communications⁺
Zurich, Switzerland, 11-13 March 1986

Contact Address: Secretariat '86 IZS
Zellweger-Uster AG
CH-8634 Hombrechtikon
Switzerland.

Phone: (41) 55 41 61 11.

International Conference on Optical and Millimeter Wave
Propagation and Scattering in the Atmosphere
Florence, Italy, 27-30 May 1986.

Contact Address: O.I.C./O.M.P.S.A.
via Gustavo Modena 19
I-50121 Florence
Italy.

Phone: (39-55) 57 72 71
Telex: 580071 OIC I.

8th Annual Meeting of the Bioelectromagnetics Society
Madison, Wisconsin, USA, 1-5 June 1986.

Contact Address: The Bioelectromagnetics Society
1 Bank Street
Gaithersburg, MD 20878
USA.

1986 International IEEE A/P-S Symposium and National Radio
Science Meeting, Philadelphia, Pennsylvania, 9-13 June 1986.

Contact Address: Mr. Charles C. Allen
General Electric Co.
Valley Forge Space Center
Room U4018
P.O.Box 8555
Philadelphia, PA 19101
USA.

Symposium on Ionospheric Studies using Satellite Radio Beacons⁺
Oulu, Finland, 9-14 June 1986.

Contact Address: Prof. Dr. A. Tauriainen
University of Oulu
Department of Electrical Engineering
SF-90570 Oulu 57
Finland.
Phone: (358) 81-352735.
Telex: 32375 oylin sf.

International Conference on Communications '86
Toronto, Canada, 22-25 June 1986.

Contact Address: Prof. A.N. Venetsanopoulos
IEEE International Conference on Comm. '86
1450 Don Mills Road
Don Mills, Ontario
Canada M3B 2X7.

Conference on Precision Electromagnetic Measurements (CPEM)⁺
Gaithersburg, MD, USA, 23-27 June 1986.

Contact Address: Ms J. Wilson
National Bureau of Standards
Gaithersburg, MD 20899
USA
Phone: (301) 921-2727.

8th International Wrocław Symposium on Electromagnetic
Compatibility⁺

Wrocław, Poland, 24-26 June 1986.

Contact Address: Dr. W. Waszkis
EMC Symposium
Box 2141
51645 Wrocław 12
Poland.

URSI Symposium on Wave Propagation: Remote Sensing and
Communications⁺

Durham, NH, USA, July 1986.

Contact Address: Prof. R.K. Crane
Dartmouth College
Hannover, NH 03755
USA.

COSPAR XXVI Plenary Meeting and Associated Activities
Toulouse, France, 30 June-12 July 1986.

Contact Address: Mr. Z. Niemirowicz
Executive Secretary, COSPAR
51 boulevard de Montmorency
F-75016 Paris
France.

SCOSTEP International Symposium on Solar-Terrestrial Physics⁺
Toulouse, France, 30 June-5 July 1986.

Contact Address: Prof. B. Hultqvist
Kiruna Geophysical Institute
P.O.Box 704
S-981 27 Kiruna
Sweden.

COSPAR 86: Symposium 1 - Active Experiments⁺
Toulouse, France, 30 June-3 July 1986.

Contact Address: Dr. G. Haerendel
MPI für extraterrestrische Physik
D-8040 Garching bei München
Federal Republic of Germany.

International Symposium on Surface Waves in Solids and Layered Structures⁺ (ISSWAS)

Novosibirsk, USSR, 1-4 July 1986.

Contact Address: ISSWAS Organizing Committee
Institute of Semi-conductor Physics
Siberian Branch of USSR Academy of Sciences
Prospekt Lavrentyeva 13
630090 Novosibirsk 90
USSR.

Phone: 35 75 78.

COSPAR 86; Symposium 5 - Synopsis of the Solar Maximum Analysis⁺

Toulouse, France, 2-5 July 1986.

Contact Address: Prof. C. de Jager
Laboratory for Space Research
Beneluxlaan 21
3527 HS Utrecht
Netherlands.

COSPAR 86: Workshop 5 - Quantitative Radar Remote Sensing of Land and Oceanic Surface Features⁺

Toulouse, France, 4-5 July 1986.

Contact Address: Dr. H. Ottl
DFVLR
Oberpfaffenhofen
D-8031 Wessling
Federal Republic of Germany.

COSPAR 86: Symposium 9 - Physics of the Thermal Plasma in the Magnetosphere

Toulouse, France, 7-8 July 1986.

Contact Address: Dr. C.R. Chappell
Space Science Laboratory
Code ES-51
NASA/ Marshall Space Flight Center
Alabama 35812
USA.

COSPAR 86: Workshop XIII - Thermospheric Mapping Study (TMS)⁺
Toulouse, France, 7 July 1986.

Contact Address: Dr. W. Oliver
MIT Haystack Observatory
Route 40
Westford, Mass. 01886
USA.

COSPAR 86: Workshop XI on the International Reference
Ionosphere (IRI)⁺
Toulouse, France, 8 July 1986.

Contact Address: Dr. L. Bossy
Université Catholique de Louvain
174 avenue W. Churchill
B-1180 Brussels
Belgium.

COSPAR 86: Topical Meeting A.3 - Satellite Observations of
Ocean Colour for Dynamic and Biological Studies⁺
Toulouse, France, 9-10 July 1986.

Contact Address: Dr. J.F.R. Gower
Institute of Ocean Sciences
P.O. Box 6000
Sidney B.C.
Canada V8L 4B2.

Workshop on Practical Aspects of Ionospheric Modelling⁺
Boulder, CO, USA, 12-14 July 1986.

Contact Address: Dr. Charles Rush
National Telecommunication and Inf.Adminis-
tration
Institute for Telecommunication Sciences
325 Broadway
Boulder, CO 80303
USA.

URSI Symposium on Electromagnetic Theory⁺
Budapest, Hungary, 25-29 August 1986.

Contact Address: Prof. T. Berceli
Research Institute for Telecommunications
H-1525 Budapest
Hungary.

8th Colloquium on Microwave Communication⁺
Budapest, Hungary, 25-29 August 1986.

Contact Address: Secretariat of the 8th MICROCOLL
H-1525 Budapest, 114, POB 15
Hungary.

16th European Microwave Conference⁺
Dublin, Ireland, 8-12 September 1986.

Contact Address: Conference Chairman: Prof. J.O. Scanlan
University College
Upper Merrion Street
Dublin 2, Ireland.

Phone: (0001) 761584
Telex: 25278.

12th European Conference on Optical Communication (ECOC'86)
Barcelona, Spain, 22-25 September 1986.

Contact Address: Secretariat of ECOC'86
Telefonica
R & D Department
Lérida 43
28020 Madrid, Spain.

XXXVII Congress of the International Aeronautical Federation
Innsbruck, Austria, 6-11 October 1986.

Contact Address: Convention Centre Innsbruck
XXXVII IAF Congress
POB 533
A-6020 Innsbruck, Austria.

International Conference on Semiconductor and Integrated
Circuit Technology
Beijing, China, 19-26 October 1986.

Contact Address: Zhou Mengqi
The Chinese Institute of Electronics
P.O.Box 139
Beijing, China.

4th International Conference on Optical Fibre Sensors (OFS'86)⁺
Tokyo, Japan, 7-9 October 1986.

Contact Address: OFS'86 Secretariat
OITDA, 20th Mori Bldg
7-4, Nishi-Shimbashi 2-chome
Minato-ku, Tokyo 105, Japan.

Phone: 03-508-2091.

11th IEEE International Conference on Infrared and Millimeter Waves⁺

Tirrenia, Italy, 20-24 October 1986.

Contact Address: M. Inguscio and F. Strumia
Dipartimento di Fisica dell' Università di
Pisa

Piazza Torricelli 2
I-56100 Pisa
Italy.

Phone: 050/45222
Telex: PSA FIS 500319.

Latin American-African Workshop on Tropical and Subtropical Radiopropagation Research and Applications

Buenos Aires, Argentina, September or October 1986.

Contact Address: Prof. S. Radicella

PRONARP
J. Alvarez 1218
1414 Buenos Aires
Argentina.

International Symposium on Antennas (JINA' 86)

Nice, France, 4-6 November 1986.

Contact Address: Secrétariat JINA '86
CNET/PAB Centre de la Turbie
F-06320 Cap d'Ail
France.

Phone: 33 (93) 41 17 17.

URSI Symposium on Microwave Signatures in Remote Sensing⁺
Göteborg, Sweden, January or February 1987.

Contact Address: A. Blomquist and F. Eklund
National Defence Research Institute
FOA 3
S-581 11 Linköping
Sweden.

International Workshop on Ionospheric Informatics⁺
Novgorod, USSR, May 1987.

Contact Address: Dr. T.L. Gulyaeva
IZMIRAN
USSR Academy of Sciences
142092 Troitsk
Moscow Region
USSR.

XXII General Assembly of URSI
Tel Aviv, Israel, 24 August - 4 September 1987.

Contact Address: URSI Secretariat
32 avenue Albert Lancaster
B-1180 Brussels
Belgium.

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