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COMMITTEE ON DATA FOR SCIENCE AND TECHNOLOGY

41 CODATA NEWSLETTER

JULY 1987

Highlights

The **Committee on Data for Science and Technology (CODATA)** was established in 1966 by the International Council of Scientific Unions.

Working on an interdisciplinary basis, CODATA seeks to improve the quality, reliability, processing, management, and accessibility of data of importance to science and technology.

11th International CODATA Conference 1988

The 11th International CODATA Conference, "Scientific and Technical Data in a New Era" will be organized by DECHEMA (Deutsche Gesellschaft für Chemisches Apparatewesen, Chemische Technik, und Biotechnologie). It will be held from 26-29 September 1988 at the Karlsruhe Congress and Exhibition Centre, Karlsruhe, Federal Republic of Germany. The aim of the Conference is to discuss the requirements for and the sources, applications, and handling of data in the field of science and technology, especially those aspects which are of importance in a changing modern world.

The scientific program will consist of oral presentations (both invited and contributed) as well as poster presentations. Approximately 60 invited lectures focus on the following seven topics:

- **Biosciences and Biotechnology**

Data and data banks on sequences, hybridomas, enzymes, microbial strains, environmental impact, fermentation technology, artificial organisms, etc.

- **Industry and Technology**

Data collection and prediction in thermodynamics, kinetics, process design and simulation, mechanical and electrical engineering data and databases, materials data, data for analytical chemistry, etc.

- **Safety and Environmental Protection**

Data sources and needs for data on industrial hazards and safety, environmental protection, toxicology, etc.

- **Geo- and Space Sciences**

Astronomical data and data networks, astrophysical data, space and time dependent data, oceanography, environmental disasters, satellite data, weather forecasting, climate, ocean modeling, mapping, etc.

- **Scientific Aspects of Collecting and Distributing Data**

Exchange formats, evaluation, reliability, validation, correlation of data.

- **Legal and Social Aspects of Data Dissemination**

Copyright, liability, transborder data flow, privacy considerations, social status, and implications of data.

- **Innovations in Data Handling**

Expert systems, multimedia, data management, data storage and distribution, human factors in user interfaces, very large databases, databases in teaching, CD-ROM's and other storage devices.

In addition **a biological nomenclature symposium** and a **panel discussion on copyright issues affecting scientific databases** are scheduled.

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Data for Decisionmaking

Piecing the Puzzle Together

The U.S. National Committee for CODATA, together with the National Governors' Association (NGA), the Integrated Data Users Workshop (IDUW), and other executive, legislative, and professional organizations held a conference: "Piecing the Puzzle Together", May 27-29, 1987, in Washington, D.C., on the integration of information for decisionmaking. Over 250 conference attendees representing government, science, and technlogy, examined the issues of data management, the organizational roles, responsibilities, and technological use associated with data integration techniques and applications.

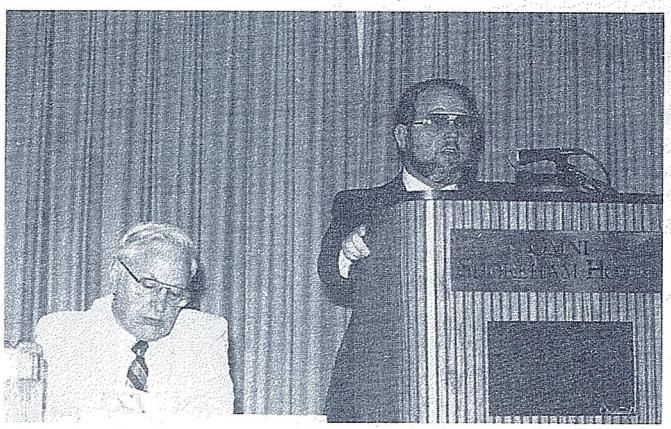
In addition to terminal plenary sessions, the conference program was organized into three concurrent tracks which focused on databases containing scientific/engineering knowledge, geographic information systems, data integration tools, and state and intergovernmental management structures and activities.

"... the perception of having access to data.

is a powerful management tool."

Discussed in detail were:

- Data compatibility issues (G.C. Carter, Chair)
- Data standards and quality, financial, organizational issues and current activities to improve data compatibility, as well as effective information use (R.J. Olson, Chair)
- Building databases and networks, integration and compatibility in the sciences (E.F. Westrum, Jr., Chair)
- Geographical information systems: overview, current capabilities, and implementation issues (Ken Green, Chair)
- Governmental level actions: management tools, techniques in dissemination, and compatibility (Jane Zacek, Chair)
- Environmental, life science, and geological databases: size, integration, and compatibility (Carl Bowen, Chair)
- Cross disciplinary integration (John Belshe, Chair)
- Interstate data networks (Richard Hayes, Chair)
- User graphics, data analysis, and capture (Barbara Cerny, Chair)
- Expert systems and artificial intelligence: realization of practical expert systems (S.S. Alexander, Chair)
- Data integration: standards, data quality, and use issues (J.S. Hanna, Chair)
- Cooperation/Competition: optimal balance in several quarters (W.W. Havens, Alan Wolsky, Chair)



R.T. Gillaspy addresses the closing plenary sessions on issues of overiding concern and suggestions for follow-up actions while Dr. J.H. Westbrook awaits his turn to do likewise for the scientific sector.

A series of papers on data integration along scientific, spatial, and policy orientation led into enthusiastic discussion on initiatives, coordination mechanisms, and future directions in both scientific and economic data futures.

On Friday, May 29, New Hampshire's Governor John Sununu addressed the conference. The Governor prefaced his remarks by stating that while making a good policy decision depends mainly on the skills, talent and background of the individual, better decisions can be promoted by using information from many sources, analytical tools, and systems for making decisions, which allow policymakers to consider in-depth detailed information. Today's technology, Sununu pointed out, allows public policymakers the use of accurate and timely information, on a daily basis, in adjusting and implementing long-range planning.

The Governor believes that "the reality of information systems is important, but the perception of having access to the information itself is a powerful management tool."

U.S. Representative George E. Brown, Jr. (California) who addressed the closing plenary session, has introduced a bill: "The Government Information Act of 1987" to restructure the National Technical Information Service (NTIS) into a core dissemination agency coordinated with other data access outlets.

Conference Proceedings will be available in early 1988 from the National Governors' Association for $25 per copy with a discount of 10% for orders of 11 or more copies. The document will include an executive summary, papers submitted by speakers and poster presenters, and a list of conference attendees/speakers. Further information is available from Lorraine Amico of NGA, 444 N. Capitol, Washington, DC 20001, U.S.A.

Far Eastern Data

Since many compilations and evaluated compendia of scientific and technological data generated by research in the Orient are expressed in native languages, these databases and printed volumes are relatively inaccessible even in CODATA Directories of Sources of Data for Science and Technology. To remedy this situation, the Executive Committee in February 1987 established a Working Group on Data Sources in Far Eastern Countries. The composition of this Working Group is indicated below.

Chairman

Prof. Jiro Osugi, Research Institute for Production Development, Kyoto, Japan

Members

Mr. Jiang Chusheng, Bureau of Science & Technology, Ministry of Chemical Industry, Beijing, China

Prof. M. Kizawa, University of Library and Information Science, Ibaraki, Japan

Prof. Mu Shik Jhon, Korea Advanced Institute of Science & Technology, Korea

Dr. H. Sugawara, Institute of Physical and Chemical Research, Saitama, Japan

Prof. K. Takayanagi, Institute of Space & Aeronautical Science, Tokyo, Japan

Prof. M. Tasumi, University of Tokyo, Tokyo, Japan

Ms. Hu Yaruo, Chinese Committee for CODATA, Beijing, China

Prof. M. Kotani (Honorary Member), Japan Academy of Science, Tokyo, Japan

Prof. A. Tsugita (Ex-officio Member), Science University of Tokyo, Chiba, Japan

Prof. E. F. Westrum, Jr. (Liaison Member), University of Michigan, Ann Arbor, U.S.A.

Their tasks include:

- Collection of information on all databases established in the computer centers of major universities.

(continued on page 3)

Thermodynamics of Natural Processes

IAGC * IGCP * 7-1988
MA * CODATA
TNP 1
STRASBOURG

The First International Symposium on Thermodynamics of Natural Processes, will be held in Strasbourg, France, July 25-28, 1988. It is being organized by the subgroup, Correlation Techniques and Computer Simulation of Natural Processes of the Working Group on Thermodynamics of Natural Processes (NG-TNP) of the IAGC) in collaboration with the Centre de Sedimentologie et de Geochimie de la Surface (CNRS) and the Institute de Geologie Université Louis Pasteur. The Symposium is sponsored by CODATA, International Mineralogical Association (IMA), International Geological Correlation Program (IGCP), International Association of Geochemistry and Cosmochemistry (IAGC)

The Symposium hopes to provide all scientists studying the thermodynamics of natural process in geology, an opportunity to present and discuss the most recent results on:

- Thermodynamic data for minerals, fluids, and gases
- The procurement, consistency, tabulation, and critical evaluation thereof
- Use of thermodynamic data in geochemical models for mass transfer calculations
- Equilibrium or kinetic control-steady state . . .
- Applications of geochemical models as predictive tools, and their validation . . .

All abstracts will be published in a special issue of Terra Cognita (the Journal of the European Union of Geosciences).

Entire papers can be deposited during the conference for publication in an international journal after normal peer review. Several journals have been contacted and have agreed to discuss the publication of special issues. The final arrangements will depend on the proposals of participants and will be given in the second circular. Also, with the second circular, will be recommendations for preparing the submitted papers and abstract forms. The conference language will be English.

A limited number of oral presentations will be selected for morning sessions; afternoon sessions will be devoted to poster presentations followed by synthesis and discussion led by working groups.

After the conference, a three-day field trip will be organized in Alsace (Rhine Valley) and in the Vosges Massif. The trip will cross a geologically interesting area with Middle Age ambiance.

For more information or first and second circulars, contact: Dr. Bertrand Fritz, Secretary General TNP_1-1988, Institut de Geologie, 1 rue Blessig, F-67084 Strasbourg Cedex, France. Phone: (33) 88 35 85 73. Telex: ULP 870260 F or CNRSCRO 890032 F.

Far Eastern Data

(continued from page 2)

- Collection of information on all the databases published in scientific journals in native languages.
- Collection of pertinent information by contacting scientific journals and through personal contact with individual scientists.
- Organization of this information into easily readable format.

The final collection will be available as a CODATA Directory.

The first meeting of the Working Group will be in Tokyo October 28-30, 1987 and involves members from Japan, Korea, China, and possibly from other Oriental countries.

CODATA Calendar

1987

August

26-28 CODATA Task Group on Chemical Thermodynamic Tables, Boston, U.S.A.

September

6- 8 Third CODATA/IUPAC Symposium on Phase Equilibrium, Budapest, Hungary

October

5- 6 CODATA Industrial Data Commission, Paris, France (Tentative)

19-20 CODATA Officer's Meeting, Moscow, U.S.S.R.

28-30 Working Group on Data Sources in Far Eastern Countries, Tokyo, Japan

1988

March

3- 5 CODATA Task Group on Coordination of Protein Sequence Data Banks, Paris, France

3- 5 32nd CODATA Executive Committee, Paris, France

July

21-24 CODATA Task Group on Geothermodynamic Data, Strasbourg, France

25-28 First International Symposium on Thermodynamics of Natural Processes, Strasbourg, France

September

26-29 11th International CODATA Conference, Karlsruhe, F.R.G.

30- Oct. 1 CODATA General Assembly, Karlsruhe, F.R.G.

Protein Sequence Data

The Task Group on Coordination of Protein Sequence Data Banks met in Nice, January 23-27, 1987.

Members of the Task Group photographed in the garden of the Picasso Museum in Antibes. From left to right (1st row): Dr. W. Barker, Mrs. C. Gombeil, Prof. M. Kotani, Dr. R. Simpson, Dr. G. Cameron; (2nd row): Dr. K. Loening, Dr. A. Lesk, Prof. A. Kolaskar, Prof. A. Tsugita, Dr. M. Krichevsky, Prof. B. Keil, Dr. A. Henschen, Mrs. P. Glaeser. Missing from the photo: H.W. Mewes, J.-M. Claverie.

Materials Database Newsletter

The CODATA Task Group on Materials Database Management concluded that a central resource providing regular information of work on standards, network developments, new databases, etc. would help to establish a regular dialogue between database managers and with users on an international scale and that without such a central resource only a few managers have access to such information via personal contact or through sporadic attendance at international workshops and committees. Existing bulletins, such as those prepared by VAMAS and MTDS, serve part of this purpose in their own specialized fields but there is no simple international resource covering the needs of database management throughout the CODATA nations.

In each issue of the quarterly CODATA Newsletter, a materials database newsletter will be issued as a separate insert. The first issue is to accompany the CODATA Newsletter scheduled for October, 1987. The scope of the newsletter will include information on new materials databases and systems, development of relevant standards, government programs, meetings, conferences, workshops, new reports, standards, books and short notes on issues which need to be made more visible to materials database managers and users.

Additional copies of the insert will be printed for mailing to Associates of the Task Group including database users and managers who would not normally receive the CODATA Newsletter. Copies will also be sent to publishers and societies, world-wide, with the invitation to reproduce it in appropriate professional journals and thus reach a further extensive body of users and managers. Translations into languages other than English will be left to the discretion of the CODATA National Committees. Continued receipt of the newsletter by those on the associate mailing list would be made conditional upon their response to periodic requests for information and surveys, or otherwise indicating their positive involvement with the work of the Task Group.

Gmelin Online Bases

As the government of the Federal Republic of Germany prepares to honor Leopold Gmelin, German chemist and physician, with a postage stamp to be issued in 1988 on the occasion of his two hundredth birthday, they also are establishing a new online Gmelin database.

Leopold Gmelin's pioneering work started in the years 1817 to 1819 with the publication of a three volume handbook of chemistry. Gmelin's work established itself as the most comprehensive and significant reference work in inorganic chemistry, and today has the longest tradition of any handbook in all of science.

The Gmelin Handbook published by the Gmelin Institute of the Max Planck Society is the most comprehensive reference work for inorganic, organometallic and physical chemistry with over 550 volumes and 173,000 pages. It covers the literature up to 1986. In 1987 the Gmelin Handbook celebrates its 170th anniversary.

In order to meet the increasing information requirements, the Gmelin Institute, with the support of the Ministry for Research and Technology, is preparing a new information system. The goal of this project is to make the data contained in the Gmelin Handbook, as well as actual data, available as an online database. Thanks to a sophisticated data structure, the database (designated as "Gmelin Online Data System") will produce a multidimensional register with completely new access possibilities. An outside user will have the possibility not only of looking up specific compounds but also searching for specific properties. Such access possibilities have not only purely scientific interest but they are also of great economic significance.

(continued in next column)

In the production of the Handbook, EDP-accessories (Electronic Data Processing) will facilitate the work of the authors through improved literature procurement and manuscript preparation. The system accepts the content of the manuscript furnished by the authors in a mode suitable for printing as well as for the direct transfer into a Gmelin refined database.

The Gmelin Formula Index (GFI) is one of the new files available on STN since March 1987 and contains the Gmelin Formula Index supplemented by the complete catalog. It is the computerized version of 20 Gmelin Handbook index volumes plus the abstracts and bibliographic information from the Gmelin Catalog. The file is produced by the Gmelin Institute for Inorganic Chemistry. It can be searched in a variety of ways and contains information in English from 1924 to the present. The database supplier is Springer-Verlag GmbH & Co. KG.

China Conference on Computers

'87

The 8th International Conference of Computers in Chemical Research and Education (ICCCRE) was held under the auspices of the Chinese Academy of Sciences and the Chinese Chemical Society in cooperation with the Chinese CODATA Committee in Beijing from June 15 to 20, 1987; it was an unusually successsful meeting. More than 200 scientists--a good third of whom came from outside China--worked for five days within a most efficiently organized framework. Participants were housed in the Friendship Hotel on the outskirts of Beijing and the conference was held nearby.

In addition to the 18 plenary lectures, the most up-to-date topics were addressed during small round table discussions led by a chairman with two or three speakers. These were called keynote and focussed discussions. The subjects were introduced by brief (20-25 minute) presentations called keynote lectures. 33 of these were thus presented. Five microsymposia were held on the following subjects: Molecular Design of Drugs and Compounds with Desired Properties; Numerical Data Acquisition, Evaluation, Dissemination, and Retrieval Systems; Advances in Computer Aided Process Design; Quantum Chemistry and Other Computational Methods; Advances in Chemometrics; Representation and Retrieval of Chemical Structures and Reactions; and, The Future of Computer Chemistry. Furthermore, more than 180 posters were presented during five sessions.

The number and quality of the Chinese participants bore witness to the presence of Chinese scientists in all areas of computational chemistry. The official members of CODATA were especially active in the organization of the meeting and, by their participation, effectively contributed to its success.

There was among the participants consensus on and appreciation for the relevancy of the Conference covering--as it did--the essential areas of research and teaching in computer science.

Particular attention was paid by many to progress in individual microcomputers, and great hope was expressed that individual graphic work stations operating in the range of 10 MIPS-50 MFLOPS would soon be a reality.

After the 8th ICCCRE proper, many foreign participants were able to visit the Institute of Organic Chemistry in Shanghai and were thus able to gauge the important progress made in spectroscopic data banks that had been perfected and set up locally. All in all, it was a thought-provoking and fruitful meeting and we tender our sincere thanks to the Chinese organizers.

-- *Jacques-Emile Dubois*

W. W. HUTCHISON 1935 -- 1987

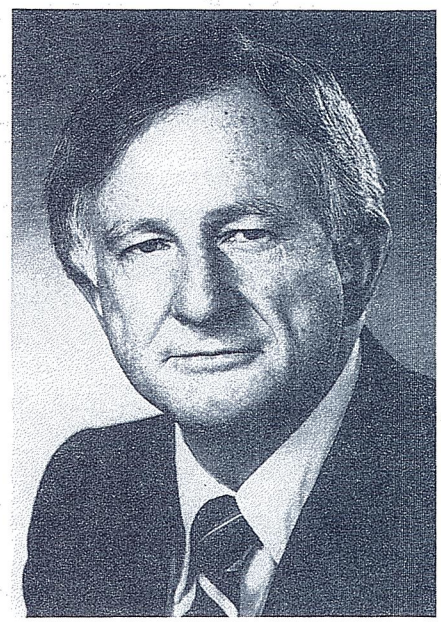
The international scientific community lost one of its outstanding leaders through the death of William Watt Hutchison on July 3, 1987, just one year after completion of his term as President of CODATA.

Born in Scotland in 1935, Bill Hutchison, known as Hutch to friends and colleagues everywhere, graduated from the University of Aberdeen in 1957, undertook postgraduate studies at the University of Toronto, Canada, and received his doctorate in geology in 1962. After a brief period in industry, he joined the Geological Survey of Canada and began geological mapping of the Coast Range Plutonic Complex of British Columbia on Canada's west coast. His flair for developing methods of handling and displaying complex data led to his appointment in 1974 as Head of the Geological Survey's Data Systems Group in Ottawa.

He was appointed January 1, 1981 to the position of Director General of the Geological Survey of Canada and shortly thereafter was promoted to Assistant Deputy Minister in the Department of Energy, Mines, and Resources. From that time until his death, he had a far-reaching influence on Canadian science, serving on numerous advisory boards and panels. He was particularly active in fostering multinational scientific cooperation--for example, by representing Canada on bodies such as the Circum-Pacific Council for Energy and Mineral Resources.

From 1976 to 1980, Dr. Hutchison served as Secretary General of the International Union of Geological Sciences (IUGS), one of the largest, most active and influential nongovernmental international scientific associations in the world. His term as Secretary General was marked by dynamic enterprise and initiative: he expanded the scope of the IUGS scientific program significantly, improved communications in the Union which includes the membership of just under a hundred countries and started publishing EPISODES, now well-known as the newsmagazine for international geoscience. These activities brought honor to Canada's role in international science, and in 1980, Dr. Hutchison received the Bancroft Award from the Royal Society of Canada for his accomplishments. At the XXVII International Geological Congress held in Moscow in August 1984, he was unanimously elected President of IUGS for a five-year term.

His first association with CODATA came at the Symposium on Man-Machine Communication for Scientific Data Handling, sponsored by the CODATA Task Group on Computer Use, at Freiburg, FRG, in 1973. He remarked later that this meeting opened his eyes to the commonality of data management problems in different scientific disciplines. He became delegate of IUGS to CODATA in 1974 and was elected to the Executive Committee the same year.



After his election as President in 1982, he instituted a reappraisal of CODATA objectives and priorities. An Executive Committee study session at La Gaillarde, France, in 1983 led to a restatement of CODATA goals, which culminated in the adoption of a new Constitution at the 1984 General Assembly in Jerusalem.

All his friends in CODATA and elsewhere will remember Hutch for his buoyant personality, his sense of humor, and his care in expressing appreciation for the efforts and contributions of others. He had a knack for recognizing the talents of his colleagues and motivating them to contribute these talents to worthy endeavors. Most important, he was able to keep his sights on the ultimate goal in spite of the petty problems and rivalries prevalent in international collaborative efforts. We are indebted to him for his hardwork, vision, and contagious optimism.

One of Dr. Hutchison's last wishes was to establish, under IUGS auspices, a memorial fund called the "Hutchison Young Scientist Foundation", to assist the professional development of meritorious young geologists through participation in IUGS-sponsored meetings and conferences. Contributions to this fund may be addressed to IUGS Hutchinson Young Scientist Foundation, c/o Scott and Aylen, Barristers and Soliciters, Attn.: Mr. Laird J. Rasmussen, 170 Laurier Avenue West, Rm. 1200, Ottawa, Ontario K1P 5V5, Canada.

Fundamental Physical Constants Adjustment: Comments

CODATA has presented a list of newly calculated fundamental constants of physics and chemistry.[1] Traditionally the calculation is based on the randomization of so-called (unknown) systematic errors, in consonance with the recommendations of the Bureau International des Poids et Mesures (BIPM) Working Group on the Statement of Uncertainties.[2] These recommendations made no distinctions in principle between "random" and "systematic" uncertainties (at the same time, the term "error" disappeared from official linguistic usage).

However, there are many doubtful consequences connected with that proposal, in particular with respect to the least squares adjustment of fundamental constants; i.e., if one is not willing to accept the quite formal mode of acting to randomize (unknown) systematic errors, there are other criteria for data selection and evaluation procedures, which generate an essentially different set of fundamental constants.

Clearly, one has to decide which one to choose.

The CODATA Task Group has not discussed this problem, thereby expressing its opinion, not to alter the traditional approach, going back to R.T. Birge.[3]

For some people, it is immaterial whether (unknown) systematic errors are randomized or not: They are content if every one does the same thing. However, the numbers of the fundamental constants are unique, and the differences between the two procedures prove to be intolerable; i.e., the intervals associated with a given constant do not overlap.

Others claim that (unknown) systematic errors are of random origin, since their assessment included subjective components, touching the personal responsibility of the experimenter. At this point, we must not forget, that laws given by nature never comprise subjective components. But this becomes true, if fundamental constants are determined by such a formalism. Furthermore, there is no responsibility with respect to a physical state given in advance: the constant systematic error exists just like any law of nature, and the problem of finding a correct assessment has to be checked with respect to reality--but not with respect to the responsibility of the experimenter.

According to the fundamental chain of reasoning of the exact sciences, I come to the following conclusions:

- The exact sciences describe only facts.
- From the repetition of facts they deduce laws.
- (Unknown) systematic errors are not repeatable
- Consequently, the necessary condition for the existence of a (n objective) distribution law is not fulfilled.
- Without a distribution law, a randomization is not feasible: theory and experiment coincide only if randomization is given up, which implies that (unknown) systematic errors have to be considered and treated as unknown constants--but not as random variables.

(Some people might argue that--according to the fourth thesis, the non-repeatability of (unknown) systematic errors also implied a law, in contrast to the statement, that laws can only be inferred from repeatable facts. This is doubtlessly true, but, evidently, this other law is not a distribution law and is, therefore, of no use for metrology, except to show that a distribution law for non-repeatable events constitutes a contradiction in term.).

Consequently, I am not in a position to accept the numerical values presented in the CODATA BULLETIN.

Notwithstanding that, I express all due respect to the members of the Task Group in view of their painstaking work, lasting for longer than a decade, to compile, to investigate, and to combine the many experimental data, and to present a set of adjusted, self-consistent fundamental constants, the need and importance of which lies beyond all doubt.

However, I wish to see that, someday all these compiled data be evaluated according to the procedures outlined in (4).

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1. "The 1986 Adjustment of the fundamental physical constants", prepared by E.R. Cohen and B.N. Taylor, CODATA Bulletin, No. 63, November 1986.

2. Proces verbaux des seaces of CIPM 49, 70e session: BIPM, Sèvres, France: 1981.

3. Birge, R.T.: Probable Values of the General Physical Constants, Rev. Mod. Phys. 1 (1929) 1-73.

4. Grabe, M.: Principles of "Metrological Statistics", Metrologia, 23 (1987) 213-219.

5. Grabe, M.: On the Assignment of Measurement Uncertainties Within the Method of Least Squares, Poster Paper, Conference on Precision Measurement and Fundamental Constants II, Gaithersburg, MD, 1981.

6. Bender, P.L., Taylor, B.N., Cohen, E.R., Thomsen, J.S., Franken, P, Eisenhart, C: Should Least Squares Adjustment of the Fundamental Constants be Abolished? In Precision Measurement and Calibration, NBS Special Publication 343, Washington, D.C. 1971.

--Dr. M. Grabe,

33 Braunschweig, Sauerbruchstrasse 43, F.R.G.

Israel's COSTI Program

Israel's National Center of Scientific and Technological Information (COSTI) has provided online searches from vendors abroad, renders SDI services from magnetic tapes, original documents from a variety of sources, organization of local information sources and listing them in directories, as well as advice and instruction on the creation of special databases and information centers.

In addition to these services, the Center plans to offer its clients direct access to a series of computerized data bases and has a VAX 780 with the necessary peripherals for this purpose. A Micro VAX II is being installed and an additional VAX 8600 has been ordered. In addition, input and retrieval programs are being examined for use.

The database under consideration will cover social, political and economic aspects as well as scientific and technological subject areas. The following are processed for input:

News and Press Releases of the Israeli Government Press Office, "Commerce Business Daily" Database (CBD), NTIS Database, Energy Database which covers Israeli Research Documents, Daily Electronic Edition of the "Jerusalem Post", "Kompass" Directory of Israeli Commercial Firms.

In addition, the ISI, INSPEC, and Engineering Information databases should be implemented by the end of 1987.

For details of access for local or international customers apply to: The National Center of Scientific and Technological Information, (COSTI), POB 20125, Tel Aviv 61201, Tel: 972 3 297881; Telex: 032332 CSTI IL; Fax: 972 3 294619.

IUBS Delegate

The new delegate to CODATA from the International Union of Immunological Societies (IUIS) is Dr. Jean-Claude Jaton, Department of Biochemistry, Faculté de Medecine, 1 rue Michel Servet, CH-1211 Geneva 4, Switzerland.

CODATA Books

CODATA Thermodynamic Tables - Selections for Some Compounds of Calcium and Related Mixtures: A Prototype Set of Tables. (Report of the CODATA Task Group on Chemical Thermodynamic Tables.) Editors: D. Garvin, V. B. Parker, and H. J. White, Jr. CODATA Series on Thermodynamic Properties, 1987.[a]

Computer Handling and Dissemination of Data - Proceedings of the Tenth International CODATA Conference, Ottawa, 1986. Editor: Phyllis S. Glaeser.[b]

Books and Computer Services

Electronic Databases in Japan. By J. Sigurdson and R. Greatrex.[c]

Handbook of the Thermodynamics of Organic Compounds. By R. M. Stephenson, S. Malanowski. *(Section on Vapor-Liquid, Critical Constants of Fluids by D. Ambrose.)*[d]

Plenum Publications:[e]

Statistical Thermodynamics of Alloys. By N. A. Gokcen.[e,f]

Data Base Administration. By J. L. Weldon.[e,g]

Data Analysis in Astronomy, I and II. Editors: V. DiGesu, L. Scarsi, P. Crane, J. H. Friedman, and S. Levialdi.[e,h] & [e,i]

DECHEMA Chemnistry Data Series:[j]

Critical Data of Pure Substances, Vol. II of Series. K. H. Simmrock, R. Janowsky, A. Ohnsorge.[j,k]

Recommended Data of Selected Compounds and Binary Mixtures, Vol. IV of Series. K. Stephens, and H. Hildwein.[j,l]

Liquid-Liquid Equilibrium Data Collection, Vol. V of Series (in prep.). W. Arlt, M. E. A. Macedo, P. Rasmussen, and J. M. Sorensen.[j,m]

PVT Data und Equations of State for Liquids, Vol. VII (in prep.). E. Kuss[j,n]

Solid-Liquid Equilibrium Data Collection, Vol. VIII (in prep.). H. Knapp, R. Langhorst, M. Teller.[j,o]

Activity Coefficients at Infinite Dilution, Vol. IX. J. Gmehling, D. Tiegs, A. Medina, M. Soares, J. Bastos, P. Alessi, I. Kikic.[j,p]

Longman Research Reference:[q]

European Sources of Scientific and Technical Information, 7th edition. Editor: A. P. Harvey[q,r]

Engineering Research Centres. Editors: T. Archbold, J. C. Laidlaw and J. McKechne.[q,s]

Materials Research Centres, 2nd edition.[q,t]

Electronics Research Centres, 1st edition.[q,u]

Agricultural Research Centres, 8th editio.[q,v]

Medical Research Centres, 7th edition[q,w]

Pacific Research Centres.[q,x]

European Research Centres, 6th edition.[q,y]

Industrial Research in the United Kingdom, 11th edition.[q,z]

International Who's Who in Energy and Nuclear Sciences.[q,aa]

Who's Who in Science in Europe, 4th edition.[q,bb]

Footnotes

[a] CODATA, 1987. xx + 356 pp. US $69.95. Available, North America: Hemisphere Publishing Corp., ISBN 0-89116-730-7. Outside North America: Springer-Verlag, ISBN 3-540-17788-4.

[b] CODATA, 1987. xvi + 424 pp. US $90.00. Available, North America: Elsevier Science Publishing Co., Inc., 52 Vanderbilt Ave., New York, NY 10017, USA. Outside North America: Elsevier Science Publishers B.V., P.O. Box 1991, 1000 BZ Amsterdam, The Netherlands. ISBN 0-444-70221-0.

[c] University of Lund, 1986, viii + 143 pp., paper, SKr 100. Lund, Sweden.

[d] Elsevier Publishers, 1987. Approx. 550 pp., hardbound, US $69.00. Available in North America: Elsevier Science Publishing Co., Inc., P.O. Box 1663, Grand Central Station, New York, NY 10163-1663. Outside North America: Elsevier Applied Science Publishers, Crown House, Linton Road, Barking, Essex, U.K. IGII 8JU. ISBN 0-444-01240-0. The Handbook provides the parameters of the correlating equations required to utilize that data in engineering design. The Handbook includes physical properties for more than 5,000 organic and organometallic compounds, including the following essential data: melting and boiling points at one atmosphere pressure, liquid molar volume, calculated from the density, critical temperature, pressure and volume, Antoine vapor pressure constants, toxicity and hazard indications. It lists compounds by chemical formula, with the name, important synonyms, and Chemical Abstracts entry number given for each. Antoine constants are included for all compounds. In addition, a separate table provides all known experimental critical property data for organic, inorganic, and organometallic compounds.

[e] Plenum Press: Plenum Publishing Corp., 233 Spring Street, New York, NY 10013.

[f] 1986. xiv + 326 pp. US $49.50 ISBN 0-306-42177-1. Chapters on thermodynamic background, phase equilibria, and phase diagrams, statistical thermodynamics, theories of solutions, long-range order, interstitial solutions, semiconductors, as well as appendices on Engel-Brewer theories, estimation of enthalpy of alloy formation, correlation of thermodynamic properties in dilute solutions, selected properties of the elements, selected binary phase diagrams, and binary thermodynamic properties, et al.

[g] 1981. 262 pp. US $32.50 ($39.00 outside US. & Canada) ISBN 0-306-40595-4. DBA shows how to make the use of data processing systems by promoting data sharing, preserving data independence, increasing data availability, and reducing repetitive data storage. It includes several case histories of DBA in practice and provides a listing of many data base management system packages and data dictionary directory packages.

[h] 1985. proceedings, 554 pp. US $85.00 ($102.00 outside US. & Canada). ISBN 0-306-42018-X. Volume I explores recent exciting developments in data analysis. Discussed are data analysis methodologies, parallel programming, systems for data analysis and image processing. An edited panel discussion of the potential contribution of computer science to the solution of current problems in astronomy is featured.

[i] 1986. proceedings, 407 pp. US $69.50 ($83.40 outside US & Canada). ISBN 0-306-42473-8. Volume II presents an overview of the current status and trends in astronomical data analysis: data analysis systems for large projects, developments in parallel processing, methodologies for data analysis, expected evaluation of hardware and software, the use of artificial intelligence, the development of software for the new generation of hardware, and the methods for deriving astronomical results.

[j] DECHEMA publishers: DECHEMA, Theodor-Heuss-Allee 25, D-6000 Frankfurt (Main) 97, Germany.

[k] 1986, (Part I: 750 pp., Part II: 750 pp.). Vol. II complete, DM 555.00. ISBN 3-921-567-77-7

[l] In prep. (1987), (Part I: 300 pp., Part II: 460 pp.). Vol. IV complete, DM 365.00. ISBN 3-921-567-80-7.

[m] 1979-80, (Part I: 650 pp., Part II: 670 pp., Part III: 620 pp.). In prep., (Part IV: 300 pp.). Parts I-III, DM 612.00. ISBN (Pts. I-III) 3-921-567-17-3; 18-1; 19-X.

[n] In prep., 250 pp.

[o] In prep. (1987), 500 pp., DM 264.00 ISBN 3-921-567-75-0.

[p] 1986, (Part I: 460 pp., Part II: 495 pp.). Vol IX complete, DM 395.00. ISBN 3-921-567-79-3.

[q] Longman publishers: Alison Cowley, Longman Group U.K Ltd., 6th Floor, Westgate House, The High, Harlow, Essex, U.K., CM20 1NE.

[r] 1986. Approx. 380 pp. UK £10.00. ISBN 0-582-90153-7. A detailed guide to 1500 key information sources on science and technology in Europe. This 7th edition is arranged under 25 subject headings and information centers listed by country under each subject area. It includes details of national offices of information, patents and standards offices, and organizations active in identified scientific fields with library facilities available to the public. The book has been completely revised and is fully indexed.

[s] 1984. 1031 pp. UK £165.00. ISBN 0-582-90018-2. A comprehensive guide to the programs and staff of over 7300 engineering research and development establishments, including official laboratories, industrial research centers and educational establishments with research and development activity throughout the world, the directory is arranged geographically by country and is indexed by title of establishment and subject area.

[t] 1986. 822 pp. UK £150.00. ISBN 0-582-90031-X. This 2nd edition provides details on establishments worldwide which conduct, finance or promote research into materials science. It contains some 5,000 entries, covering corporate, official, and academic laboratories and deparments taken from over 75 countries. The subject matter includes industrial chemistry, chemical process engineering, refining technology, metallurgy, preparation of synthetic materials, and solid state studies. Arranged geographically by country, the book is indexed by establishment title and subject.

[u] 1986. 552 pp. UK £140.00. ISBN 0-582-90030-1. This 1st edition provides details of approximately, 3000 corporate and academic laboratories and testing houses which carry out research or innovative development in electronics and computer science, from over 70 countries worldwide. Subjects covered include control systems, navigation and guidance telecommunications, radar, cybernetics, laser technology, optics, ultrasonics, electronic engineering, and information service. The directory is arranged geographically by country and is indexed both by title of establishment and subject.

[v] 1986. 1152 pp. UK £210.00. ISBN 0-582-90033-6. This 8th edition provides details of around 8000 laboratories and departments which conduct or finance research in agricultural science. More than 130 countries are included with greater coverage of the Third World than in the previous edition. The subject matter has been more clearly defined to include environmental sciences, horticulture, veterinary medicine, forestry, fisheries, aquaculture, hydrology, agricultural engineering, plant production, food sciences, zoology, botany, wildlife studies, and marine biology. The directory is indexed by establishment title and subject.

[w] 1986. 1094 pp. UK £230.00. ISBN 0-582-90032-8. This 7th edition provides a comprehensive guide to around 9000 biomedical laboratories and departments which conduct or finance medical and biological research and development, from over 100 countries worldwide. The subject matter covers all biomedical sciences incorporating neoplasms, dentistry, human nutrition, pharmacology, biomedical technology and biochemistry, as well as the medical specialities. The directory is indexed by title of establishment and by subject.

[x] 1986. 524 pp. UK £120.00. ISBN 0-582-90028-X. This provides detailed information on about 3300 organizations which conduct or finance research and development in Australia, China, Indonesia, Japan, Malaysia, New Zealand, and the Philippines. Industrial, governmental, and academic laboratories are included. Details given include address, size of organization, names of key personnel, and an overview of main research activities. The directory is fully indexed by establishment title and subject.

[y] 1986. 2453 pp. UK £220.00. ISBN 0-582-90027-1. This 6th edition provides detailed information on about 20000 research laboratories in science, technology, agriculture and medicine within Europe including EEC, EFTA, and all COMECON countries excluding USSR. It includes major industrial research laboratories in private and public corporations, government laboratories, research funding organizations, university research institutes, and university departments conducting research. Information is given for each center to indicate its size, its key personnel and to give an overview of its research activities, interests and major projects. The directory is fully indexed by establishment title and subject.

[z] 1986. 658 pp. UK £105.00. ISBN 0-582-90029-8. This 11th edition provides detailed profiles of research laboratories in the U.K., including addresses of trade associations and professional societies. It contains approximately 4000 entries covering industrial firms, nationalized companies, universities, government laboratories, research consultancies, and learned societies. The directory is fully indexed by names of scientific staff, establishment title, and subject.

[aa] 1983. 532 pp. UK £120.00. ISBN 0-582-90110-3. This is a biographical guide to over 3800 research chemists, research physicists, and development engineers in over 70 countries involved in the generation, storage, and efficient use of energy. The first part lists individuals, alphabetically giving personal and professional information, publications, and public appointments. The second part is a country and topic list of the same individuals.

[bb] 1984. 2556 pp. UK £325.00. ISBN 0-582-90109-X. This 4th edition provides professional and biographical details of over 25,000 senior scientists in government, industrial, academic and independent organizations.

Atomic Data Banks Conference

The GAPHYOR Data Center is organizing a two-day workshop at Cosener's House, Abingdon, U.K. on 4-5 August 1987 on the management of atomic data banks with application to astrophysics, fusion, laboratory plasmas, etc. This meeting will follow satellite meetings of the XVth ICPEAC, "Atomic Collisions in Fusion" (30-31 July) and the "Atomic Data Workshop" (2-3 August) to be held in Oxford. It is sponsored by CODATA and the U.S. National Bureau of Standards. A dozen participants are expected.

The meeting agenda includes a revision of the existing evaluated atomic data sets, examination of mechanisms expected to help promote the work of evaluation, and the choice of prioritized sets for astrophysics and fusion; a discussion of international collaboration in compilation, storage, and exchange of atomic data sets will also be included.

IUPAC VLE Workshop

The Third IUPAC Workshop on Vapor-Liquid Equilibria in alkane-alkanol mixtures will be held in Budapest, Hungary (9-11 September 1987) in conjunction with the Third CODATA Symposium on Critical Evaluation (6-8 September).

The objective of IUPAC Workshops is to develop a set of recommended data sets mainly on low-pressure vapor-liquid equilibria and related properties for binary 1-alkanol + n-alkane mixtures. During the previous meetings participants showed interest in extending the scope to high-pressure systems.

CODATA Conference 1988

(continued from page 1)

The Scientific Committee will be responsible for the selection of contributed papers and will decide in which sessions and in what form (oral or poster) they should be presented. Papers will be selected on the basis of the abstract submitted

In addition to an exhibition of equipment and services as well as of relevant scientific books, scientific and technical facilities required for database demonstrations during the Conference, will be provided. (For mainframe databases, these facilities will include use of a terminal and data networks for access to a host computer. For microcomputer databases, facilities will include table space and power.)

Karlsruhe is situated in the southwest of the Federal Republic of Germany just at the foot of the Black Forest and can be easily reached by plane to the Frankfurt international airport, by intercity train, by car via the German highway (Autobahn). Frankfurt, Heidelberg, Stuttgart, and Strasbourg are appoximately an hour away. Karlsruhe's museums, beautiful gardens and surroundings with a number of castles from various centuries offer a variety of opportunities for relaxation. Moreover, a number of social and cultural activities are planned for participants and accompanying persons.

The membership of the International Scientific Program Committee, chaired by Dr. H. Behrens (F.R.G.), includes Professor D. Abir (Israel), Dr. A. J. Barrett (U.K.), Dr. R. Eckermann (F.R.G.), Professor L. V. Gurvich (U.S.S.R.), Professor S. Iwata (Japan), Professor B. Keil (France), Professor H. Knapp (F.R.G.), Dr. M. I. Krichevsky (U.S.A.), Dr. B. B. Molino (U.S.A.), Professor R. Sinding-Larsen (Norway), Dr. G. H. Wood (Canada).

The Local Organizing Committee consists of Professor D. Behrens, Dr. H. Behrens, Mrs. C. Birkenberg, and Dr. R. Eckermann.

Extended abstracts of up to 800 words will be distributed at the beginning of the conference (preprint volume). Authors will be requested to submit their abstracts (camera ready copy) by 31 March 1988. The Proceedings will be published after the Conference. Manuscripts of 5 typewritten pages are required by 31 August 1988.

Authors wishing to present a paper are kindly requested to submit an abstract of at least 100 words by 15 September 1987. The names of all the authors should be indicated on the abstract and the speaker's name should be underlined. Such abstracts should be submitted to DECHEMA with an indication of the preferred presentation format and the relevant appropriate topic. Prospective exhibitors of equipment, books, and database demonstrations should do likewise. The address is:

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