

## Family News Convocation 2001 General Members Assembly

All IAHR members are cordially invited to attend the IAHR General Members Assembly that will be held on Friday, 21 September, 2001, Beijing, China

Venue: Beijing International Conference Center (BICC),

Time: 14:00-15:00h

### AGENDA

1. Opening
2. Announcements
3. Minutes of the 2000 General Members Assembly, 28 July, Iowa City, USA  
The minutes will be published in the next issue (Issue 3)
4. 2000 Financial Report
5. 2000 Annual Report Association Activities
6. Announcement Result Elections of IAHR council 2001 - 2003
7. Approval of Amendment to the Constitution
8. Closure

Dr. Christopher George  
Executive Director

## We'll meet again, don't know where don't know when, but I know we'll meet again some sunny day.

They say that all good things come to an end and so it is with my career with IAHR.

The choice for IAHR to move to Spain was inevitable as was my choice to stay in Holland. Having just become a grandmother of a beautiful baby girl, how could I leave?

I have worked for IAHR for 10 years and have enjoyed every minute of it. I loved travelling to conferences to represent IAHR and meeting our members. My favourite conferences were, of course, our Biennial ones. Meeting old friends and making new ones was always something I enjoyed immensely.

I shall miss the hectic work and trying to keep to the deadlines of the Journal, Newsletter and NewFlash. One of my favourite sayings was: "I love deadlines. I especially like the whooshing sound as they go flying by"!!!

However, as the headline says we'll meet again because from April 8, I have a new job with Delft Hydraulics here in Delft. My new job is with SOBEK, the general one-dimensional modelling system of Delft Hydraulics. As sales and marketing support assistant it will ensure that I remain active in the water related sector



and can use the knowledge I have gained whilst working for IAHR. I will be changing my name from Cheryl van der Zee back to my maiden name Cheryl Boud, in memory of my father. My new e-mail address will be Cheryl.Boud@wldelft.nl and our website: <http://www.sobek.nl/>.

Until the office has been fully installed in Spain

our Executive Director, Christopher George will take up my heavy duties.

**I would like to thank you all for making my time with IAHR enjoyable, it has been great!!**

**Thanks for the memories and until we meet again:**

*May the road rise to meet you.  
May the wind be always at your back.  
May the sun shine warm upon your face.  
And rains fall soft upon your fields.  
And until we meet again,  
May God hold you in the hollow of His hand.*

Cheryl



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Our monthly electronic newsletter "NewsFlash" complements the bi-monthly IAHR Newsletter. "NewsFlash" publishes information which would be outdated if published only in our bi-monthly Newsletter "NewsFlash" is available free of charge to anyone interested in hydraulics; if you know of anyone who would like to receive it please ask them to forward their e-mail address to us. "NewsFlash" is also available on our homepage: <http://www.iahr.org>

Editor Newsletter / Newsflash:  
Cheryl van der Zee

# Council Election 2001 - 2003

## New Election Procedure

In Newsletter 5/2000 you were informed about the new Council Election Procedure, which Council adopted at its meeting in July 2000 in Iowa City, USA. For the first time, Council appointed the Nominating Committee one-year ahead of the biennial congress. Members of the 2001 Nominating Committee are:

A.H. Cardoso, Portugal  
J.W. Kamphuis, Canada  
H. Kobus, Germany (Chairman)  
R. Lopardo, Argentina  
A. Petitjean, France  
A. Salih, Sudan  
A. Wada, Japan  
Xia Shileng, China  
B. C. Yen, USA

Vice President Dr. A. Mueller, Switzerland, who led the development of the new procedures, serves as the Council contact person in this inaugural implementation of the procedures for election of the new Council for the two-year period 2001 – 2003.

### Selection Process

The Nominating Committee has collected proposals from Individual and Corporate Members, searched itself for candidates and evaluated the performance of present Council Members in view of their possible re-election. Furthermore, it had to consider the alignment of candidates with Council composition requirements and define a list with a right balance between the possibly conflicting requirements of a world-wide representation of the membership and yet at the same time an active group which is capable of leading the Association and of fulfilling Council assignments, a continuous renewal with new members yet with assurance of the necessary continuity, and adequate representation of academia and hydraulic engineering practice.

In Newsletters 5 and 6/2000, all IAHR members have been invited to submit suggestions regarding possible nominees or nominations by petition to the Nominating Committee before March 1, 2001. All nominations submitted from the

membership have been considered by the Committee in the nomination process. There was no nomination by petition.

After careful consideration of all criteria and boundary conditions and taking into account all suggestions received from the membership, the Nominating Committee proposes the following slate of candidates for the election of the IAHR Council 2001 – 2003:

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### Slate of candidates

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**For President:**  
**Prof. Forrest M. Holly Jr., USA**

Iowa Institute of Hydraulic Research, University of Iowa, USA

The next two years are extremely important ones for IAHR. We now have over two years of experience with a full-time Executive Director, and as a result we are poised to pursue many new initiatives in publishing, student chapters, support for activities of Corporate Members, etc. At the same time we are in the midst of a relocation of the Secretariat to our new host CEDEX in Madrid, with many personnel and administrative details demanding careful attention. It is especially important that, while assuring a smooth relocation, we continue to pursue the new initiatives. I am committed to continuing to work closely with our Executive Director and Council to assure that quality member services are maintained during the relocation, while the visibility, role, and influence of IAHR on the global water scene continue to increase.



**For Vice President:**  
**Dr. Etienne Mansard, Canada**

Canadian Hydraulics Centre, National Research Council of Canada, Ottawa, Canada

Etienne Mansard is the Executive Director of the Canadian Hydraulics Centre of the National Research Council of Canada and a Vice President of IAHR. Being active in IAHR for nearly twenty years, he has facilitated international collaboration in waves and more recently he has been part of the various decision-making processes related to changes in the IAHR organisation. Regarding future plans, he wishes to continue to foster international collaboration and work hard to raise IAHR's profile as both a research and application-oriented organisation. He will strive to make it as an umbrella organisation for many of the activities in the field of hydraulics and also as a forum for facilitating decisions on important global issues related to hydraulics.



**For Vice President:**  
**Prof. Mikio Hino, Japan**

I would be one of the oldest IAHR members, now working as an active researcher. So, I shall be able to act as a liaison person to bridge between younger members and the old generation, not only for the research problem (I know the classical ones and continue to have interests in new ones, such as ecohydraulics, coherent structures of turbulence, satellite hydraulics and hydrology); but also for the past discussions of IAHR organisation and policies. I will contribute to activate the research of hydraulics especially related with APD (Asia and Pacific Division), taking a close contact with IAHR members in this region. I would like also to promote the world-wide activity of IAHR, stressing the importance of water problems in this new 21 century.



**For Vice President:  
Dr. Jean-Paul  
Chabard, France**  
Electricité De France  
(EDF) – Division  
Recherches et  
Développement, Dept.  
Transferts Thermiques  
et Aérodynamique, Chatou, France

Planned contribution as Council Member:  
I shall continue, as a Council Member, to  
act in the following directions:  
Bridging the gap between researchers and  
engineering practitioners, developing the  
IAHR membership by clarifying and  
increasing the value of being a member of  
our association, especially concerning  
Corporate Members, combining a  
traditional science such as Hydraulics with  
new technologies for information and  
communication as an opportunity for  
creating an active community sharing

valuable information and working in  
network.  
Developing links with other associations:  
at European level with ERCOFTAC and at  
a French national level with SHF.  
As a Council Member, I shall let IAHR  
benefit from my experience as a manager  
at different positions in a large organisation.



**For Secretary  
General:  
Dr. Cristóbal Mateos,  
Spain**  
Centro de Estudios y  
Experimentación de  
Obras Publicas  
(CEDEX) – Ministerio  
de Fomento, Laboratorio de Hidráulica,  
Madrid, Spain

Born 1938. In 1963 he finished his studies  
in Civil Engineering, at the Polytechnic

University of Madrid. He received  
Mathematics and Statistics degrees in  
1964 (Madrid University), and received a  
doctorate in 1965.  
Since 1960 he has worked in the  
Hydraulics Laboratory of CEDEX, from  
1986 as its Director. During this time he  
has been responsible for 200 technical  
reports. Since 1969 he has been a part-  
time professor of Hydraulics and  
Mathematics in the Civil Engineering Dept.  
at the Polytechnic University of Madrid.  
Prof. Mateos has published three books  
and 60 papers on Waves, stratified flows,  
vibrations, stability, sedimentation and  
energy dissipators.  
In IAHR he is a member of the Hydraulic  
Structures Section, has contributed with  
papers to 14 Congresses and participated  
in the organisation of the Madrid Congress  
and in several meetings of IAHR  
committees.  
I believe that in the future the IAHR must

## In this issue

### Family News

*Only solitary men know the full joys of  
friendship. Others have their family; but to  
a solitary and an exile, his friends are  
everything.* - Willa Cather  
page 17

### Thanks for the Memories

*True friendship is like sound health; the  
value of it is seldom known until it be lost*  
- Charles Caleb Colton  
page 17

### Convocation 2001 - General Members Assembly

*You can either take action, or you can  
hang back and hope for a miracle.  
Miracles are great, but they are so  
unpredictable* - Peter Drucker  
page 17

### In this issue

*Journalism is the ability to meet the  
challenge of filling space.* - Rebecca West  
page 19

### Introducing:

*Marian Muste, New Chairman of the  
Hydraulic Instrumentation Section, and  
Andrej Predin, New Secretary of the  
Hydraulic Instrumentation Section*  
page 22

### Journal of Hydraulic Research (JHR)

page 23

### XXIX IAHR Congress, Beijing

page 24

### Constitutional Changes

*To climb steep hills requires slow pace at  
first.* - William Shakespeare  
page 26

### Droplets

**Just Published**  
*Action springs not from thought, but from  
a readiness for responsibility-*  
Dietrich Bonhoeffer  
page 27

### Job Announcements

*Ambition never comes to an end.*-  
Yoshida Kenko  
page 27

### New Events

*Reading makes a full man, conference a  
ready man, and writing an exact man.*-  
Sir Francis Bacon  
page 28

### Roll of Honour

*Take time to deliberate; but when the time  
for action arrives, stop thinking and go in.*  
*One man with courage makes a majority* -  
Andrew Jackson  
page 28

### Winner of the Roll of Honour Lottery

*Dreams come true; without that  
possibility, nature would not incite us to  
have them* - John Updike  
page 30

### Abstracts of papers in JHR Volume 39 (2001) Issue 2

*A man is the sum of his actions, of what  
he has done, of what he can do, nothing  
else*- Andre Malraux  
page 30

strive to maintain the quality of its publications, and increase their number and dissemination with a greater emphasis on interdisciplinarity. Through these means I believe the vitality of IAHR will be maintained and its membership will increase.



**For Council member:  
Prof. Roger Falconer,  
UK**

Cardiff School of Engineering, Cardiff University, UK

I have been actively involved with the IAHR for over 20 years. I was honoured to receive the IAHR Ippen Award in 1991 and have been privileged to serve on the Council for the past two years.

If chosen to serve again on Council, I would wish to continue to promote closer links with related learned societies, such as the IWA and IAHS. I believe that the distinctions between hydraulics, hydrology, water resources and water and wastewater treatment processes are increasingly less pronounced and, if we are to survive as an independent association in the 21<sup>st</sup> Century, then we need to focus our future strategy on forming closer associations, and possibly even explore partial mergers, with other water-related learned societies.



**For Council member:  
Prof. Jacques Ganoulis, Greece**

Dept. of Civil Engineering, Aristotle University of Thessaloniki, Greece

Professor of Hydraulics and Director of Hydraulics Laboratory, Dept. of Civil Engineering, Aristotle University of Thessaloniki, Greece

Jacques Ganoulis has more than 20 years of professional and research experience on water resources management.

He is advisor of local authorities on flood protection and environmental impact assessment.

His research interests include multicriteria decision-making and fuzzy logic modelling. He has more than 150 papers published in scientific journals and conference

proceedings, is the editor of three books, the author of the book Engineering Risk Analysis of Water Pollution (WILEY-VCH, 1994) and the co-author of the book Fragile Méditerranée (EDISUD, 1996). Prof. Ganoulis is co-ordinator of INWEB (International Network of Water-Environment Centres for the Balkans). He is one of the organisers of the IAHR 2003 Biennial Congress in Thessaloniki, Greece.



**For Council member:  
Prof. Li Guifen, China**

China Institute of Water Resources and Hydropower Research (IWHR), Beijing, China

Professor, Senior Engineer, IWHR. Member and Chairperson of Hydraulic Committee of CHES. Prof. Li has been engaged in hydraulic research. Prof. Li has mainly carried out research in areas such as high velocity flow, flow fluctuation, flow energy dissipation, hydrodynamic loads on beds of stilling basins and plunge pool, wind wave on the surface of reservoir, etc. She has worked more than 40 years in IWHR and was former Director of the Dept. Hydraulics of IWHR.

Since joining the IAHR, she has attended 12 times IAHR Congress, and two times has stood on the Nominating Committee of IAHR. She is also a member of the Ice Engineering and Research Section, and a member of Hydraulic Structures Section of IAHR. She and others have organised 13 international symposia in China in the past 13 years.

Prof. Li, as Executive Vice-Chairman, is currently preparing for the 29th IAHR Congress, in Beijing, 2001.



**For Council member:  
Prof. Gerhard Jirka,  
Germany**

Institute for Hydromechanics, University of Karlsruhe, Germany

Following undergraduate studies in Vienna, Austria, and graduate studies at MIT in the USA, I joined the IAHR in 1974 and have been an active member ever since. This

includes the convening of several specialty symposia, participation in the planning and organisation of two IAHR Congresses, and a six-year chairmanship of the Committee of Fluid Mechanics. As a researcher, educator and engineering consultant I am interested in the application of fluid mechanics and hydraulics to environmental and energy problems, such as turbulent transport and mixing processes, stratified flows, water quality and groundwater management. As a global organisation IAHR plays an important role in providing research, education, training and leadership for managing the Earth's finite water resources in a socially equitable and environmentally responsible manner. As a member of Council I will work with enthusiasm and fairness toward achieving these goals.



**For Council member:  
Dr. Gaele Rodenhuis,  
Netherlands**

Delft Hydraulics, The Netherlands

I am presently a member of the Board of Directors of Delft hydraulics, responsible for operations, research and development. With an education in applied mathematics and computer modelling this implies also a responsibility for the Delft Systems - the large modelling systems that Delft Hydraulics markets world-wide. I also worked for many years for the Danish Hydraulic institute and the Danish Maritime Institute - and sometimes I feel to be competing with my past self! I am currently helping IAHR develop as a professional forum for our corporate members - including organising a Symposium concurrently with the IAHR Beijing Congress for the Directors of the world's water research institutes.



**For Council member:  
Prof. David Stephenson, South Africa**

University of Witwatersrand, Water Systems Research Group, Dept. of Civil Engineering, Wits, South Africa

David Stephenson rose from the bottom end of Africa to become Chairman of the African Division and subsequently a Council member of IAHR. His interests and aspirations are broad in the field of water engineering. He is particularly keen to integrate potential members from developing countries. Ways of incorporating such people either via a free internet newsletter or by sponsorship are sought. The expansion of the name of the IAHR to include hydraulic engineering as well as research should encourage a greater membership from developing countries where often the sponsorship comes from Government departments. It is hoped that industries and consultants involved in water engineering will now clamour for membership. The Association could become a meeting place for consultants, contractors, suppliers and researchers in the field of hydraulics. It is anticipated that peripheral organisations such as water engineers and scientists involved in water resources planning and dam design as well as hydraulic machinery and instrumentation will form their own subdivisions of the Association, but above all they will be able to meet regularly to interface on a commercial and technical level.

David Stephenson's private research and teaching is in the field of hydraulics of water supply and water resources management. His research group is involved with modelling such systems and he publishes and consults in this field.



**For Council member:  
Prof. Eduardo Varas,  
Chile**

School of Engineering,  
Catholic University of  
Chile, Santiago, Chile

Graduated from the Catholic University of Chile in 1965 with a Civil Engineering degree. Obtained a M.Sc. (1967), Engineer (1969) and Ph.D. (1976) degrees from Stanford University, California. Presently, Professor of the School of Engineering at Catholic University of Chile. Research and teaching interests in simulation in hydrology, probabilistic hydrology, mathematical and physical modelling in hydraulic engineering. Has been actively engaged in teaching,

research and consulting since 1965. Regarding my contribution to the Council, I would be interested to increase the involvement of the Latin American professional community in IAHR. The regional Division has been very active for four decades, holding congresses where members present more than 300 papers, however, few persons are active members of IAHR and very few participate in International Congresses, present papers to the journal or are active in work groups. However, LAD members have made advances and significant technical contributions in hydraulic design, hydrology, fluvial hydraulics and other matters which could enrich IAHR activities.



**For Council member:  
Prof. Tae Hoon Yoon,  
Korea**

Hanyang University,  
Dept. of Civil  
Engineering, Seoul,  
Korea

He is a native Korean and studied at the Hanyang University in Seoul, University of Houston and Korea University for BS, MS and Ph.D. He is a professor at the Department of Civil Engineering and a former dean of College of Engineering at the Hanyang University. He was visiting professor at the Technical University of Denmark and State University of New York. He was vice president of the Korean Society of Civil Engineers and Korea Water Resources Association, a member of Executive Committee of APD-IAHR, and a member of Continuing Education and Training Section of IAHR. He is a Fellow of ASCE. His major research interests are scour countermeasures at bridge piers, flow structure of settling tanks and numerical flood inundation modelling, etc.

**Regional Division Chairmen (2001 – 2003):**

The following Chairmen of the Regional Divisions will be co-opted members of Council:

Latin America Division:  
Prof. Raul Lopardo, Argentina

Asia and Pacific Division:  
Prof. Sri Harto Br., Indonesia

African Division:  
Dr. Mohamed B. Saad, Egypt

European Division:  
Prof. J. J. Peters, Belgium  
(Chairman, Task Force)

**Voting Procedure:**

Each member receives a ballot sheet with an envelope at least 2 months prior to the Beijing Congress. The ballot form is included with this Newsletter. Please make use of your voting right and submit your vote by mail to the IAHR Secretariat as soon as possible to reach the Secretariat by September 8, 2001 at the latest. Ballots can also be submitted at the Beijing Congress up to the deadline on Wednesday, September 19, 2001.

**How to use the ballot sheet:**

In order to give your vote to the proposed candidate; mark the box "yes vote" after the candidate's name.

If you do not give your vote to the proposed candidate, you may give your vote to an alternative candidate (optional) by putting his name and country in the column "Write-in Candidate".

Each candidate can only receive one vote per ballot sheet.

The ballot contains 13 votes. Ballot sheets with less than 13 votes will also be valid.

After marking your ballot sheet, please fold, seal it and return it to the Secretariat in the envelope provided.

**Final Remark:**

The Nominating Committee has prepared the proposed slate of candidates, the ballot form and this presentation of candidates and procedures according to the new election procedures of the Association in the interests of securing a democratic election and of recommending a Council which holds the best potential for future growth and strengthening of our Association. We urge all members of IAHR to support these efforts by making use of your election rights and submitting your written vote at your earliest convenience.

**Your vote counts:  
fill in your ballot now!**

For the Nominating Committee:  
Helmut Kobus, Germany (Chairman)

# Introducing:

## **Marian Muste, New Chairman of the Hydraulic Instrumentation Section, and Andrej Predin, New Secretary of the Hydraulic Instrumentation Section**

Following the IAHR Council meeting in Iowa City (July 28-29, 2000), the Hydraulic Instrumentation Section (HIS) has undergone a number of significant changes including the new Chairman and Secretary, and several new section members.

Currently, HIS has the following members: M. Muste (new Chairman, U.S.A.), A. Predin (new secretary, Slovenia), K.-U. Graw (Germany), I. Fujita (new member, Japan), R. Klasinc (Austria), U. Liiv (Estonia), A. Müller (Switzerland), V. Nikora (new member, New Zealand), J.J. Peters (Belgium), J. Pollert (Czech Republic), D. Prodanovic (new member, Yugoslavia), M. Berezowsky Verduzco (Mexico), T. Utami – Wakayama (Japan).

The section would like to commend and thank K.U. Graw (former Chairman), T. Utami (former Secretary), C. Maksimovic (former member, UK), K. Michioky (former member, Japan), and R.H.J. Sellin (former member, UK) for their numerous contributions and commitment to the section. As new Chair and Secretary, we would like to introduce ourselves and to highlight important item actions on the section agenda.

### **Marian Muste**



#### **Education**

Ph.D. Civil and Environmental Engineering, The University of Iowa, U.S.A. (1995). Thesis title: Particle and Liquid Velocity Measurements in

Sediment-Laden Flows with a Discriminator Laser-Doppler Velocimeter

M.S. Civil and Environmental Engineering, The University of Iowa (1993).

M.S. Civil and Structural Engineering, The Polytechnic Institute Cluj-Napoca, Romania (1980).

Marian's main research interests include: experimental methods and measurement techniques in hydraulics and fluid mechanics (particularly, particle imaging techniques and laser-Doppler velocimetry),

hydraulic modelling, environmental fluid mechanics, sediment transport, and river mechanics. Currently he is a Research Engineer at the Iowa Institute of Hydraulic Research (IIHR), The University of Iowa, Iowa City, U.S.A (e-mail address: marian-muste@uiowa.edu).

### **Andrej Predin**



#### **Education:**

D.Sc. Mechanical Engineering, University of Maribor, Faculty of Mechanical Engineering, Slovenia, (1994). Thesis title: Contribution to the analysis of the acting

forces on the shaft of the model guide-vane of reversible pump-turbine.

M.Sc. Mechanical Engineering, University of Maribor, Faculty of Mechanical Engineering (1990).

Andrej's main research interests include: turbomachinery, fluid and solid interactions, vibrations, operating noise, two phases flow (cavitation flow). His current position is an Assistant Professor at the Faculty of Mechanical Engineering, University of Maribor and Head of Laboratory for Turbine Machines at the Institute for Energy, Process and Environment Engineering at the same university (e-mail address: andrej.predin@uni-mb.si).

The committee has developed a new strategy driven by the 1999 IAHR Research Agenda "Bridging the Gap between Research and Application". The key activities for the nearest future include: Setting up an internet-based database for hydraulic instrumentation. This action item is a regeneration of an older section initiative aiming at creating a world-wide forum for users and manufacturers of hydraulic instrumentation. The central idea is to create an open platform for continuous monitoring of the balance between users' needs and manufacturers' capabilities in hydraulic instrumentation. The database will include a comprehensive list of commercially available instrumentation and their main metrological characteristics. We also plan to provide practical guidelines for selection of instruments, setting instrument operational parameters for measurements in

various flow conditions, and conducting uncertainty analysis. We expect that following the site establishment, the users and manufacturers in the area of hydraulics will be active contributors in updating and enhancing the data-base.

Organisation of scientific meetings in support of research and knowledge dissemination.

HIS will organise a Special Seminar proposed by A. Muller titled "Instrumentation for Hydraulic Measurements and Experimental Methods" at the XXIX IAHR Congress in Beijing, September 2001.

The section will co-sponsor ASCE's Conference "Hydraulic Measurements and Experimental Methods" Estes Park, Colorado, U.S.A., July 2002. (please contact C. Pugh at [cpugh@do.usbr.gov](mailto:cpugh@do.usbr.gov) for more details about the event).

HIS will organise a workshop "Hydraulic Instrumentation – Needs and Tools" at the XXX IAHR Congress, Thessaloniki, 2003. Increased collaboration with other societies in the area of hydraulic engineering and research. As an example, several joint IAHR-ASCE activities were initiated at a special meeting with ASCE's Hydraulic Measurements and Experimentation Technical Committee at the 2000 ASCE Conference in Minneapolis (U.S.A). Discussions during the meeting revealed areas of common interest such as elaboration of standardised procedures for field measurements using ADCPs, investigation of modern approaches for remote river flow diagnostic, and implementation of uncertainty analysis in hydraulic measurements. Establishment of an efficient interactive webpage for HIS.

The actions described above are the result of interactions with colleagues interested in hydraulic instrumentation. They present first steps in the activity of renovated HIS and we plan continuous development of our activity. We believe that the HIS would greatly benefit from your comments and suggestions. Your thoughts on these and other potential activities of the section are welcome at [marian-muste@uiowa.edu](mailto:marian-muste@uiowa.edu) or [andrej.predin@uni-mb.si](mailto:andrej.predin@uni-mb.si).

# Journal of Hydraulic Research - an Update

In Issue 2, 2000 we promised a detailed report on developments in the IAHR Journal of Hydraulic Research.

## Processing Time

As a result of considerable efforts at the Secretariat during the last year under the guidance of the Editor and Associate Editors and with the support of the existing and many new reviewers we are able to report that the average processing time for papers submitted has reduced considerably - as is shown in the figure below:



An analysis has been carried out from published information for other Journals of interest to IAHR members showing average times for decision making, and the results indicate a spread from 6 - 12 months as typical. These averages are shown in the accompanying figure.

## Waiting Times for Publication

The waiting time for accepted papers before publishing is also obviously highly important for authors - and the accompanying figure shows that times vary considerably between Journals - from 2 months to 12 months in our sample. In the case of JHR as a result of our success in reducing the processing times we have seen an increase in the backlog of accepted papers awaiting publishing. This now stands at around ten months. As reported in Issue 1 of the Newsletter, we have increased the size of JHR from 80 to 112 pages, which will enable us to reduce this backlog during the course of 2001.

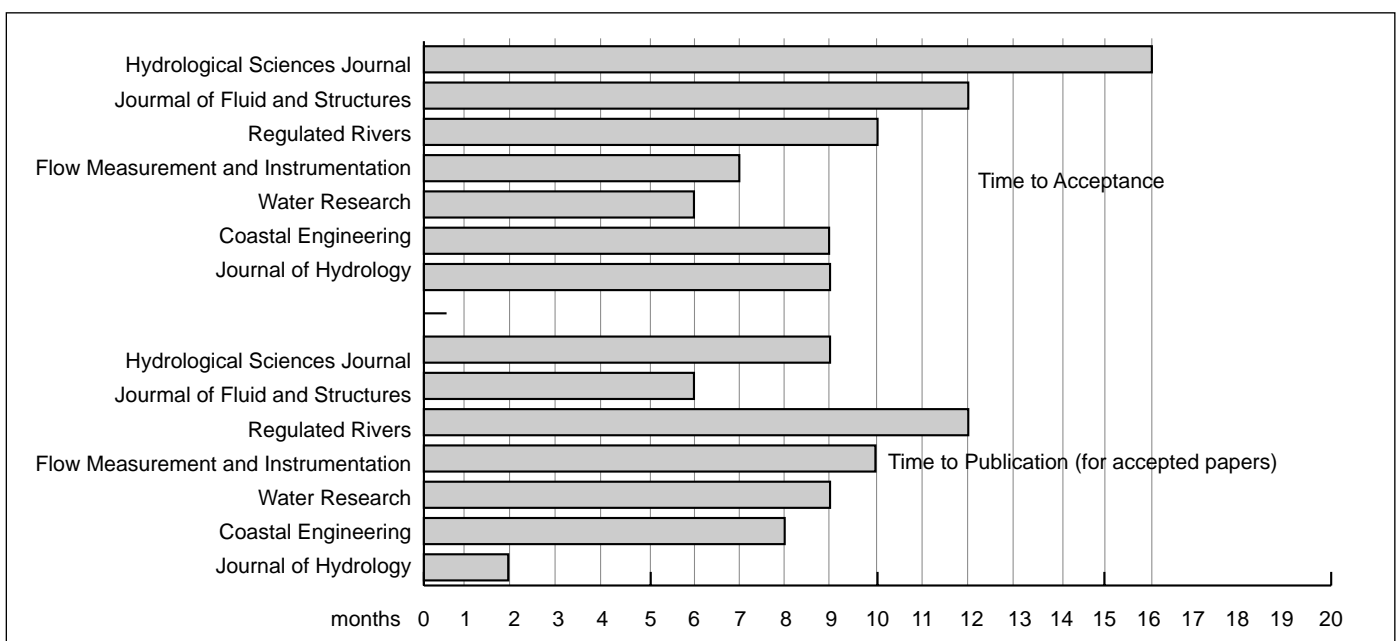
### Processing time

Date of Submission	Papers Recd.	Average Time to Decision (months)
Jan.- Mar. 1999	21	17.0
Apr.- Jun. 1999	48	12.6
Jul. - Sep. 1999	35	12.0
Oct.- Dec. 1999	19	8.5
Jan.- Mar. 2000	26	7.1
Apr.- Jun. 2000	34	6.4

The second half of 2000 indicates a further drop in processing times (although as many papers are still under review results are unreliable).

*Christopher George*

### Waiting times for Acceptance and Publication in other Journals



Please remember to send in your Ballot form to vote for the 2001 - 2003 IAHR Council



**Register before June 30,  
and save \$75,-!!!**

# XXIX IAHR Congress, September, 2001 News from Beijing

REGISTRATION FEES (In USD)				
	Before 30 June, 2001		After 1 July, 2001	
	IAHR member	Non-IAHR member	IAHR member	Non-IAHR member
Regular Participant	500	600	575	660
Student	250	270	280	300
Accompanying guest	200	200	230	230
Daily registration	200	200	200	200
Student session only	50	50	50	50

Up to the end of January 2001, there were 558 papers submitted paper to the congress technical sessions:

Title	Papers Recd.
Development, Planning and Management of Surface- and Ground-water Resources	Theme A 70
Environmental hydraulics and Eco-Hydraulics	Theme B 89
Forecasting and Mitigation of Water-related Disasters	Theme C 75
Hydraulics of Rivers, Water Works and Machinery	Theme D 255
Hydraulics for Maritime Engineering	Theme E 69



The distribution of papers among countries and regions is as follows:

Argentina 6	Chile 4	Germany 15	Italy 15	Russia 9	Taiwan, China 15
Armenia 3	China 157	Greece 14	Japan 69	Singapore 9	Thailand 1
Australia 12	Croatia 2	Hong Kong, 7	Korea 13	Slovakia 1	The Netherlands 18
Austria 7	Denmark 2	China 7	Kuwait 1	Slovenia 2	Turkey 1
Bangladesh 6	Ecuador 1	Hungary 2	Malaysia 1	South Africa 2	UK 24
Belgium 6	Egypt 4	India 9	Mexico 2	Spain 3	USA 31
Brazil 7	Estonia 1	Iran 16	New Zealand 2	Sri Lanka 3	Yugoslavia 1.
Bulgaria 3	France 7	Ireland 1	Norway 2	Sweden 2	
Canada 11	Israel 1	Portugal 5	Switzerland 12		

A list of accepted papers is now listed in the Congress Website [www.2001iahr.iwhr.com](http://www.2001iahr.iwhr.com).

If you did not receive a confirmation letter from LOC, nor find your paper in the above website, please contact the LOC.

A range of interesting activities are being organised for the XXIX IAHR Congress delegates in addition to the technical program. Delegates can also choose from a variety of fascinating and unforgettable pre and post- Congress study tours.

Why not combine your visit to the Congress with for example the following trips? The IAHR Congress will provide one of the last opportunities to visit the Three Gorges Project before impoundment starts.

### The Yangtze Three Gorges and the Three Gorges Project (post Congress Tour 2)

The Three Gorges is the most spectacular section of the Yangtze River, stretching some 193km long and integrating itself with the majestic Qutang, the deep and quiet Wuxia and the shoal and rapid Xiling Rivers. It is suffused with so much myth, legend and glory. A natural gallery is described in such enthusiastic details. Qutang Gorge boasts the grandest landscape in the world with sheer cliffs and steep Mountains on either side of the river. Wuxia Gorge extends 53 km winding its way through twelve peaks, veiled with clouds and mists all year around. The legend of the nymph peak adds to its beauty and grandeur of the spectacle. Xiling Gorge is full of more shoals and rapids .

The Three Gorges Project is the biggest dam ever built in the world, situated at Sandouping, the middle section of the Qutang Gorge, 40 km from the Gezhouba Dam (the first dam build on the Yangtze River). The project is composed of a dam, power plant and navigation facility. The dam is of concrete gravity type, 2309m long, with the crest elevation at 185m a.b.s.. Twenty six generator units are located on both sides of the dam, 700 MW for each unit with a total capacity of 1,820MW. The navigation facility is composed of a permanent ship lock and a ship-lift. The ship lock is designed as a double-way and five-step locks, with each chamber dimensioned of 280×34×5m, passing which a barge fleet of 10,000 t can reach Chongqing City. The Ship-lift is of the one-way vertical hoisting type with a container sized 120×18×3.5m. One 3000 ton passenger or cargo boat can pass through it each time. The project will

last 17 years in total and the construction schedule is divided into 3 periods: 1993 to 1997, 1998 to 2003 and 2004 to 2009. The main course of the Yangtze was blocked in 1997, the first turbine generator will be put into operation by 2003, and the whole project will be completed by 2009.

The most important benefits are flood control, power generation and navigation. The total storage capacity of the reservoir will be 39.3 billion m<sup>3</sup>, with its flood control storage capacity of 22.15 billion. The Jingjiang section of the Yangtze River will be able to raise its flood control capability from the present 10 year frequency to 100 year. And the 600km long waterway from Yichang to Chongqing will obviously be improved.

### About Tibet (post Congress Tour 6)

Tibet is the so-called "third pole of the Earth". It was, until recently, one of the few places in which time has not changed. The biggest charm of Tibet is probably its unique geophysical environment and the special ecological character derived from the former.

Tibet has an area of 1,200,000km<sup>2</sup> with the lowest population density in China. The central part where most people live is along the middle reach of the Brahmaputra River with an elevation 3,700 a.b.s. (around Lhasa). Tibet is diversified and colourful in all seasons. The best season to visit the Lhasa is July, August and September. You can enjoy a great vertical-

level contrast in climate and vegetation between the top of the mountains and the bottom of the canyons. Tibet attracts visitors also with its full-bodied culture with religious hue. Tibetan music and song are resounding and elegant. Tibetan dance shows composure, fortitude, freedom, passion and vitality. The Tibetan indulges in Buddhism deeply, especially the old generation. Temples and monasteries are to be found throughout Tibetan. The Potala Palace is one of the most beautiful and magnificent buildings in China with its style, and setting. The people living in the river valleys are engaged in producing crops and those living in high tableland in grazing, but wherever you go, you could come across yak (wild or domestic).

## Beijing Congress - Introduction to Speakers

### Brief Introduction to General and Keynote Speeches at XXIX IAHR Congress



#### General Speaker: "World Water Vision."

Presented by **Mr. William J. Cosgrove**, Vice-President of the World Water Council, former Vice-President of the World Bank and

former Director of the World Water Vision Unit. Mr. Cosgrove received his M. Eng. from McGill University in 1962. With over forty years' experience in Canada and around the world, his primary fields of consulting are in strategic planning, institution building and sustainable development in the water and power sectors.



#### General Speaker: "Recent Progress of Water Science-and-Technology in China."

Presented by **Zhu Erming**, Technological Advisor of Ministry of Water Resources,

President of Council of Chinese Hydraulic Engineering Society, Guest Academician of Russian Academic of Engineering. Mr. Zhu graduated in the Department of River Engineering, East China Institute of Water Engineering in 1963.



#### Keynote Speaker: "Hydraulic Engineering and Poverty Reduction."

Presented by **Dr. S. T. Su**, Vice President and Area Manager for Asia for Harza Engineering

Company International, USA and Past President of Chinese American Water Resources Association. Dr. Su received a Ph. D. Degree in Water Resources Engineering from Colorado State University and has over 28 years experience in water resources development.



#### Keynote Speaker: "Water in Rivers."

Presented by **Hideaki ODA**, Secretary General, 3<sup>rd</sup> World Water Forum. Formerly Director of the Rivers Bureau, Ministry of Construction, Japan.



#### Keynote Speaker: "Sustainable Groundwater Management – Problems and Solutions"

Presented by **Prof. Wolfgang Kinzelbach**,

Professor, Institute of Hydromechanics and Water Resources Engineering at the ETH Zurich, Switzerland. He earned a doctorate from the University of Karlsruhe in the fields of environment engineering. He has been a professor working at the University of Kassel and then Heidelberg. His current focus is on soil and ground water, including the sustainable management of water resources in semi-arid and arid regions.



#### Keynote Speaker: "Sedimentation Studies in China – Past and Future"

Presented by **Dr. Zhaoyin Wang**, Professor of Tsinghua University, Deputy

Secretary General of International Research and Training Center on Erosion and Sedimentation, Editor in Chief of International Journal of Sediment Research. Dr. Wang has been working in China Institute of Water Resources and Hydropower Research, Karlsruhe University of Germany. He earned his doctor degree in the field of river dynamics in China Institute of Water Resources and Hydropower Research. This speech is co-authored by Dr. Binnan Lin, Academician of Chinese Academic of Science.

# Council proposal for amendment to the Constitution to the General Members Assembly in Beijing, September 2001, and change to the text of Constitution Articles 5, 7, 23, 13.

The present text of the Constitution runs as follows:

*quote*

## **Membership**

### **Article 5**

Membership of the association shall comprise:

- a. individual members (ordinary, junior, senior)
- b. corporate members
- c. corporation members
- d. sustaining members
- e. associate members

### **Article 7**

Corporate membership shall be open to the following types of corporations:

- a. hydraulics laboratories and other organisations involved in research and development of hydraulics and hydrodynamics in all its aspects, including policy analysis, water resources management, industrial applications and the environment.
- b. educational institutions dealing with hydraulics and hydrodynamics and their practical applications;
- c. organisations, institutions or companies which promote, design, execute or supervise hydraulic engineering works, perform management tasks, carry out surveys or industrial projects, develop, supply or apply relevant equipment, instrumentation, hardware or software.

### **Article 23**

Resolutions at the general members assembly and at the meeting of the council and of the executive committee shall be decided by a simple majority of votes except for the cases in which this constitution prescribes otherwise.

At a general members assembly each individual member, corporation member, sustaining member, or associate member present, shall have one vote and each

represented corporate member shall have six votes. The president decides how the votes are cast. However, voting by acclamation is permitted provided none of the voting members present objects to this method.

*unquote*

## **Council proposes to amend articles 5, 7 and 23 and have them run as follows:**

*quote*

## **Membership**

### **Article 5**

Membership of the association shall comprise:

- a. individual members (ordinary, junior, senior)
- b. institutional members
- c. corporation members
- d. sustaining members
- e. associate members

### **Article 7**

Institutional membership shall be open to the following types of organisations:

- a. hydraulics laboratories and other organisations involved in research and development of hydraulics and hydrodynamics in all its aspects, including policy analysis, water resources management, industrial applications and the environment.
- b. educational institutions dealing with hydraulics and hydrodynamics and their practical applications;
- c. organisations, institutions or companies which promote, design, execute or supervise hydraulic engineering works, perform management tasks, carry out surveys or industrial projects, develop, supply or apply relevant equipment, instrumentation, hardware or software.

### **Article 23**

Resolutions at the General Members

Assembly and at the meeting of the Council and of the Executive Committee shall be decided by a simple majority of votes except for the cases in which this constitution prescribes otherwise.

At a General Members Assembly each individual member, corporation member, sustaining member, or associate member present, shall have one vote and each represented institutional member shall have six votes. The president decides how the votes are cast. However, voting by acclamation is permitted provided none of the voting members present objects to this method.

*unquote*

**Council** agrees on suggestion to unite the categories of Honorary Membership and Extraordinary Membership of Distinction (was for non-IAHR members). This requires a Constitution change. Council therefore submits a proposal for amendment to the constitution to the General Members Assembly in Beijing, September 2001, and change the text of article 13.

The present text of the Constitution runs as follows:

*quote*

## **Honorary members/Extraordinary Members of Distinction**

### **Article 13**

Individual members and corporation members may be awarded honorary membership, upon the unanimous recommendation of the council, by the general members assembly of the association that coincides with the biennial congress. Not more than three honorary members may be nominated at this general members assembly. Individuals or entities outside IAHR may be awarded extraordinary membership of distinction, upon the unanimous recommendation of the council, by the

general members assembly of the association that coincides with the biennial congress.

*unquote*

Council proposes to amend Article 13 and have it run as follows:

*quote*

#### **Honorary members**

##### **Article 13**

Individual Members and Corporation Members, as well as Individuals outside IAHR, may be awarded honorary membership, upon the unanimous recommendation of the council, by the

General Members Assembly of the Association that coincides with the biennial congress. Not more than three honorary members may be nominated at this general members assembly.

*unquote*



## Droplets

### Just published

IAHR Council Member, Pierre Louis Viollet, of EDF, France, has written a well-researched new book in French on the history of hydraulics in ancient civilisations "**L'Hydraulique dans les Civilisations Anciennes**" published by Presses Ponts et Chaussees in paperback ISBN 2-85978-335-0. For more information visit: <http://192.70.63.40/presse/present.htm> or [pierre-louis.viollet@edf.fr](mailto:pierre-louis.viollet@edf.fr)

#### **Shock-Capturing Methods For Free-Surface Shallow Flows by E. F. Toro,**

The first of its kind in the field, this title examines the use of modern, shock-capturing finite volume numerical methods, in the solution of partial differential equations associated with free-surface flows, which satisfy the shallow-water type assumption (including shallow water flows, dense gases and mixtures of materials as special examples). Sample computer programs and accompanying numerical software (details available at [www.numeritek.com](http://www.numeritek.com)) published by Wiley and Sons Ltd, 0-471-98766-2 Hardcover: GB£80.00 est. Copyright: 2000 website: <http://www.wiley.co.uk>.

#### **Interdisciplinary Perspectives on Drinking Water Risk Assessment and Management**

*Edited by Eric G. Reichard, Fred S. Hauchmann & Ana Maria Sancha*  
IAHS Publ. no. 260; ISBN 1-901502-11-2; 178 + xiv pp.; price £33.00

#### **The Hydrology–Geomorphology Interface: Rainfall, Floods, Sedimentation, Land Use**

*Edited by Marwan A. Hassan, Olav Slaymaker & Simon M. Berkowicz*  
IAHS Publ. no. 262; ISBN 1-901502-21-X; 572 + xii pp.; price £74

#### **The Role of Erosion and Sediment Transport in Nutrient and Contaminant Transfer**

*Edited by M. Stone*  
IAHS Publ. no. 263; ISBN 1-901502-26-0; 308 + xii pp.; price £48.00

#### **Debris-Covered Glaciers**

*Edited by M. Nakawo, C. F. Raymond & A. Fountain*  
IAHS Publ. no. 264; ISBN 1-901502-31-7; 288 + viii pp.; price £44.00

#### **Calibration and Reliability in Groundwater Modelling: Coping with Uncertainty**

*Edited by F. Stauffer, W. Kinzelbach, K. Kovar & E. Hoehn*  
IAHS Publ. no. 265; ISBN 1-901502-36-8; 524 + xii pp.; price £69

For all the above IAHS books Contact: Mrs Jill Gash, e-mail: [jilly@iahs.demon.co.uk](mailto:jilly@iahs.demon.co.uk) web site: <http://www.cig.ensmp.fr/~iahs>



### Sightseeing

**WaterForum - A Worldwide Water Discussion website:**  
[www.waterdowers.com](http://www.waterdowers.com)

### Jobs

#### **Coastal Ocean Modelling: The next generation, Delft, The Netherlands**

Ever thrown a bottle overboard and wondered where the message went? Within TU Delft there is expertise on many aspects concerning your research. Your achievements are important to the group, you are expected to write journal papers and present your research at international conferences. There will be close co-operation with research groups inside and outside Delft University of Technology, notably The J.M. Burgers Center, Delft Hydraulics, Rijkswaterstaat and groups abroad. You can take courses relevant to your research.

For this project we are looking for an enthusiastic scientist preferably with some experience with finite difference, finite volume or finite element methods. Our preferred candidate has a strong affinity with research, and has a broad interest in fluid mechanics ranging from oceanography to coastal engineering. You are able to work in a team, but also individually. A good degree in mathematics, physics, civil engineering, fluid mechanics or oceanography. Please send your application to: Faculty of Civil Engineering and Geosciences. Personnel Department, Stevinweg 1, 2628 CN Delft, The Netherlands, or send an e-mail: [DienstP&O@citg.tudelft.nl](mailto:DienstP&O@citg.tudelft.nl). Please quote vacancy number CiTG/00.56. For more information about this position please contact Dr. Julie Pietrzak, e-mail: [J.Pietrzak@ct.tudelft.nl](mailto:J.Pietrzak@ct.tudelft.nl), website: <http://fluidmechanics.tudelft.nl>

**Water Resources Engineers, Fairfax, VA; Atlanta, GA; Cleveland, OH; and Philadelphia, PA offices, USA**

Tetra Tech, a multi-disciplinary environmental consulting company seeks several highly qualified individuals in all areas of watershed management and modeling, storm water management, and database management and design. All positions require participation in a highly motivated team that provides innovative environmental solutions for federal, state, and local agencies throughout the United States. Key expertise areas of interest include: Hydrodynamic, Water quality and watershed models (e.g., EFDC, SWMM, QUAL2E, HSPF, WASP, RIV1)

Urban development and storm water management, land use planning, H&H modeling, design, and monitoring Data analysis, statistics, GIS, and programming and software development. Qualifications include: advanced degree in engineering or related science (M.S. or Ph.D.), highly relevant technical and project management experience, strong word processing and spreadsheet skills, and excellent verbal and written communication skills.

Send resume and references via mail, email, or fax to the attention of Steven Peene at the following: Tetra Tech, Inc., 2110 Powers Ferry Road, Suite 460, Atlanta, GA 30339. 770-850-0949 (phone), 770-850-0950 (fax), e-mail: speene@tetratech-ffx.com

## New Events

**European Flood Defence & Land Drainage Summit**

**May 31 - June 1, 2001· London, UK**  
Contact: Katie Blackburn, Marketing Manager, IQPC, Anchor House, Britten Street, London, SW3 3QL, tel.:+44 (0) 207 368 9357, Fax: +44 (0) 207 368 9303  
Website: <http://www.iqpc.co.uk>

**Water problems-2001 November 22-24,2001 in Yerevan, Armenia.**

Contact: Armenia, 375095, Yerevan, ave. M. Baghramyan, 19, National Assembly of the Republic of Armenia, Standing Committee on Social Affairs, Health and Environmental Protection, Water Law Reforms Committee, Tel. 524625, 588236  
e-mail: social@parliament.am

**Conference on Advances in Civil Engineering (ACE2002) 3-5 January 2002. Kharagpur, India**

Contact: Dr. D. Nagesh Kumar, Professor-in-charge of Water Resources Engg Section, Civil Engineering Department, Indian Institute of Technology, Kharagpur - 721 302, INDIA.  
Tel: ++91 3222 83436,  
Fax: ++91 3222 82254 or 55303  
e-mail: ace2002@civil.iitkgp.ernet.in  
website: <http://ace.2002.tripod.com/>

**River Flow 2002 International Conference on Fluvial Hydraulics**

September 4-6, 2002, Louvain-la-Neuve, Belgium  
Full and updated information is available through the Conference Web site : <http://www.gc.ucl.ac.be/riverflow/home.html>

**16th IAHR International Symposium on Ice, December 2002 (prov.), New Zealand**

For further information contact: Prof H.T.Shen, Chairman of IAHR Ice Engineering Section  
e-mail: htshen@clarkson.edu

**Third International Conference on Debris-Flow Hazards Mitigation: Mechanics, Prediction and Assessment September 10-12, 2003, Davos, Switzerland**

Dr. Dieter Rickenmann, Swiss Federal Research Institute WSL, Zürcherstr. 111, CH-8903 Birmensdorf, Switzerland  
e-mail: Rickenmann@wsl.ch.  
Website: <http://www.wsl.ch/hazards/3rdDFHM/welcome-en.ehtml>

## New members and Roll of Honour

**Welcome to New Members!**

We would like to warmly welcome the following new members who have recently joined IAHR. We invite you to take an active role in our Association and take full advantage of the services which we have to offer. We especially invite new members to join the activities of our sections.

Many thanks go to the IAHR members who are spreading the good news about our Association! We remind you that there will be a draw for a free trip in September this year to our next Biennial Congress in Beijing, China.

**New members**

- B. Hughes, Canada
- Yan Genhua, China
- Mehdi Shafieefar, Iran
- M. van Ledden, The Netherlands
- Nadim Copty, Turkey
- Seng Keat Ooi, USA

**introduced by:**

- A.F. Babb, Canada
- Guifen Li, China
- M. Ghodsian, Iran
- Z.B. Wang, The Netherlands
- H.J. de Vriend, The Netherlands
- A. Findikakis, USA
- L. Weber, USA

# Fundamental Hydraulic Research for Coastal Areas by using Large-scale Facilities of the Hydro-Lab-Cluster North Germany

- Supported by the European Community under the Enhancing Access to Research Infrastructures Action of the Improving Human Research Potential and the Socio-economic Knowledge Base Programme of the Fifth Framework Programme of the European Community -

## Third Call for Proposals

The European Community has signed a contract with the Franzius-Institute for Hydraulic, Waterways and Coastal Engineering of the University Hannover, financing access for user groups from the Member States and Associated States of the European Community to the "Hydro-Lab-Cluster North Germany", which is composed of physical and numerical modeling facilities offering the absolutely state-of-the-art and rather rare opportunity in the European Community to combine physical and numerical modeling in the fields of hydraulic (e.g. pump intakes, water inlet and outlet structures, scour and bed protection, weirs, ...) waterways (e.g. ship operation on rivers and channels, channel maintenance, ...) and coastal engineering (e.g. offshore structures, coastal protection, wave transformation and wave loads on structures, breakwaters, morphology of forelands, ...) at the same time. The project runs by April 2003 and provides access for user groups free of all charge, including all infrastructural, logistical, technical and scientific support.

In detail, within the "Hydro-Lab-Cluster North Germany" the Franzius-Institute for Hydraulic, Waterways and Coastal Engineering of the University Hannover offers access to the following facilities and to its State-of-the-Art measuring devices, data-acquisition and processing systems, and modern support facilities, such as a library.

- **Computer Facilities for Numerical Simulations:** This facility is composed of both commercial programme-systems for numerical simulations of hydrodynamics, waves, and sedimentation and erosion processes and a computer network of highest level of development.
- **Restricted-Water Ship Towing Tank Marienwerder:** A 52 m long and 3.75 m wide channel for variable water depths up to 0.45 m. The channel is equipped with a towing-unit for accelerating self-propelled and unpropelled model ships up to a velocity of 2.5 m/s.
- **2-D Wave Channel Schneiderberg:** A 110 m long and 2.2 m wide channel for variable water depths up to 2 m. The channel is equipped with

one wave-generator for regular and irregular waves. With wave periods between 1.5 s and 10 s, it is possible to generate wave heights up to 0.5 m.

- **3-D Wave Basin Marienwerder:** A 45 m long and 24 m wide basin for variable water depths up to 0.7 m. The basin is equipped with five wave-generators for regular and irregular waves. With wave periods between 1.5 s and 10 s, it is possible to generate wave heights up to 0.4 m.

User groups requesting access to the "Hydro-Lab-Cluster North Germany" are required to submit both proposals describing the project to be carried out in detail not exceeding more than ten pages and for each user the curriculum vitae and the main list of publications to the Franzius-Institute for Hydraulic, Waterways and Coastal Engineering of the University Hannover by **June, 30<sup>th</sup> 2001**. The proposals will be evaluated by an international user group selection panel and approved by the European Community. Evaluation criteria of the proposals include the scientific merit taking into account the interest of the European Community. Furthermore, priority will be given to user groups who have not previously used the "Hydro-Lab-Cluster North Germany" and who are working in regions of the European Community where few such research infrastructures exist. The selection will also take into account that visits up to three months are intended. Following a positive evaluation of any proposal details on the project will be discussed on a personal meeting in Hanover.

Further information on the contract between the European Community and the Franzius-Institute for Hydraulic, Waterways and Coastal Engineering of the University Hannover and the facilities of the "Hydro-Lab-Cluster North Germany", as well as general conditions for participation and detailed guidelines for proposals can be found on the Internet at <http://www.fl.uni-hannover.de/proj99/TNA.html> and/or will be specified upon request to the contact mentioned below.

Franzius-Institute for Hydraulic, Waterways and Coastal Engineering  
Att.: Prof. Dr.-Ing. C. Zimmermann / Dr.-Ing. A. Matheja / Dipl.-Ing. T. Linke

Nienburger Straße 4

30167 Hannover - Germany

Phone: +49 (0) 511 762 - 5481 / - 3738 / - 8942

Fax.: +49 (0) 511 762 - 4002

e-mail: sekretariat@fi.uni-hannover.de



Computer Facilities for Numerical Simulations



Restricted-Water Ship Towing Tank Marienwerder



2-D Wave Channel Schneiderberg



3-D Wave Basin Marienwerder



## And the winner is ...

### The Roll of Honour lottery winner is Jan M. Jordaan, South Africa

We closed the participation date as from March 31, 2001; members who had enrolled new members were eligible for the draw,

which was held on April 9, 2001 at the Secretariat. Marjorie Keuning and Cheryl van der Zee (Boud) drew the lucky winner.

Jan Jordaan, South Africa has won a free trip to the Beijing Biennial Congress

## Abstracts of papers in JHR Volume 39 (2001) Issue 2

### Beginning of sediment transport of incoherent grains in shallow shear flows

*Marco Pilotti, Giovanni Menduni*

In this paper the main results of an experimental investigation on the beginning of sediment transport of incoherent granular materials in shallow viscous flows are presented. The experiments, performed in a laboratory flume in both laminar and smooth turbulent flow conditions, complement the data already available in literature, and confirm that the hyperbolic trend shown by the Shields curve when the grain Reynolds

number  $X$  decreases to zero is not supported by experimental evidence. In addition, they confirm the Yalin and Karahan (1979) hypothesis on the existence of a distinct curve for the inception of sediment transport in viscous dominated flows. On the basis of the observed phenomenology, we propose to interpret the process as a function of the probability distribution of the repose angle of the grains of the erodible bed. Accordingly, a simple mechanical relation is derived that explains the pattern exhibited by the experimental data.

### The continuous measurement of bedload discharge in a large alpine gravel bed river

*H.M. Habersack, H.P. Nachtnebel and J.B. Laronne*

The objective of this paper is to analyze the efficiency of a bedload-measuring trap for continuous sediment measurements. The trap was constructed in the river-bed of the Drau, located in Southern Austria. At the trap site the mean annual discharge is  $64 \text{ m}^3 \text{ s}^{-1}$ , the slope is about 0.002 and the mean subsurface grain diameter is about 28 mm. Two criteria, hydraulic

efficiency and sampling efficiency, are used to evaluate the performance of the trap. The hydraulic efficiency as well as the sampling efficiency are shown to be high. The advantage of the trap is that continuous and automatic bedload transport measurements can be obtained even in wide, alpine gravel bed rivers. We demonstrate that continuous bedload data are useful with respect to identifying initiation of motion. The comparison with formulas shows significant deviations between measurements and calculations. In such a supply limited river-bed, where bedload often moves over an armour layer, it is apparent that local hydraulic conditions explain only a fraction, about one third of the variation in the weak bedload flux.

### Transport of sediment in large sand-bed rivers

*Albert Molinas, Baosheng Wu*

A sediment transport equation based on universal stream power is presented for the prediction of bed-material concentrations in large sand-bed rivers. The universal stream power, which is derived from the energy concept, has the advantage of eliminating the energy slope as a parameter. The energy slope, which is

in the order of  $10^{-5}$  for large rivers, is a major source of uncertainty in measurements. The analysis shows that relationships derived from flume experiments with shallow flows cannot be universally applied to large rivers with deep flows. Also the use of dimensionless homogeneous parameters in an equation is not sufficient to ensure its applicability to flow conditions where flow depths are several orders of magnitude larger. The comparisons between computed and measured sediment concentrations indicate that the commonly used Engelund and Hansen, Ackers and White, and Yang equations which were developed using mainly flume experiments are not applicable for large rivers with flow depths and Reynolds numbers up to 100 times larger than those found in flumes. The Toffaleti's method which was developed mainly from field data gives reasonable predictions of sediment transport rates for large rivers. Using the proposed equation, the computed sediment transport rates are in much closer agreement with the actual

measured values in large and medium rivers.

**KEY WORDS** Large river, Sediment transport, Alluvial river, Stream power, Universal stream power, Amazon river, Mississippi river, Deep river, Bed material load, Sediment transport capacity

### Height and wavelength of alternate bars in rivers: modelling vs. laboratory experiments

*M.A.F. Knaapen, S.J.M.H. Hulscher, H.J. De Vriend and A. Van Harten*

Alternate bars are large wave patterns in sandy beds of rivers and channels. The crests and troughs alternate between the banks of the channel. These bars, which move downstream several meters per day, reduce the navigability of the river. Recent modelling of alternate bars has focused on stability analysis techniques. We think, that the resulting models can predict large rhythmic patterns in sandy beds, especially if the models can be combined with data-assimilation techniques. The results presented in this paper confirm this thought. We compared the wavelength and height of alternate bars as predicted by the model of Schielen et al. [14], with the values measured in several flume experiments. Given realistic hydraulic conditions  $\sqrt{Re} > 2 \cdot 10^3$ , ( $R$  the width-to-depth ratio and  $Re$  the Reynolds number), the predictions are in good  $R Re$  agreement with the measurements. In addition, the model predicts the bars measured in experiments with graded sediment. If  $\sqrt{Re} < 2 \cdot 10^3$ , the  $R Re$  agreement between model results and measurements is lost. The wave height is clearly underestimated, and the standard deviation of the differences between predictions and measurements increases. This questions the usefulness of small flume experiments for morphodynamic problems.

### Flow structure of a plane turbulent impinging jet in cross flow

*Meilan Qi, Chicong Chen and Renshou Fu*

This paper presents both experimental and numerical simulation of a two-dimensional vertical impinging jet in cross flow. Intake pond of cooling water systems is a requisite component of thermal or nuclear power plant. But intake pond sediment

deposition is heavy. An impinging jet was provided in a nuclear power plant in China and found to have a significant impact on sediment suspension. However, before this investigation, little attention has been paid to the mechanism of this application case. In response to the demands of engineering design, was started this study.

Experiments are performed for different Reynolds number ratio of the jet-to-cross-flow  $R$  varying from 0.13 to 0.22. The measurement results of turbulent parameter and flow structure are obtained. Moreover turbulent parameters play an important role in sediment transportation. The experiment results also agree well with the calculations provided from  $K-\Sigma$  turbulence model.

**KEY WORDS** Normal impinging jet, cross flow, turbulence, velocity similarity

### Mixing with multiple circular turbulent jets

*Ahmed K. Moawad, N. Rajaratnam and S. J. Stanley*

This paper presents the results of a laboratory study investigating chemical mixing in an open channel with multiple circular turbulent jets. The experiments were carried out for  $\beta$ , which is the ratio of the velocity of the jets to that of the crossflow, varying from 8 to 16, with a combination of co-flowing and cross-flowing jets and only cross-flowing jets. The number of ports for the jets was varied from 20 to 36 and the spacing between the ports was varied from  $12d$  to  $24d$  where  $d$  is the diameter of the ports. Concentration measurements covered the relative distance  $x/d=2000$ , where  $x$  is the longitudinal distance from the diffuser. The dimensionless mixing distance  $\beta x_m/d$  at which the standard deviation of the concentration field reached a value of 5% was equal to 25000 where  $x_m$  is the mixing distance. The results indicate that a diffuser with turbulent cross-flowing jets could be an alternative to mechanical methods for achieving mixing of chemicals in open channels in water treatment plants.

**Integral model of shallow mixing layers***Robert Booij, Jan Tukker*

Mixing layers that develop downstream of the confluence between two flows of different velocity determine the lateral exchange of pollutants and sediment between both flows. The shallowness of most flows in the natural environment restricts the development of those mixing layers in two ways. First, the bottom friction has a stabilizing influence on the generation of large-scale turbulent structures in the mixing layer and in this way reduces the growth of the mixing layer. Second, the bottom friction leads to a decrease of the velocity difference between both flows, also leading to a reduced growth. This reduced growth results in a reduced lateral exchange between both flows which has consequences for the pollution and sedimentation of harbours and flood plains and for the longitudinal dispersion in rivers. To predict the development of mixing layers in shallow flows a simple integral model was developed in which both reduction mechanisms are incorporated. The model gives a fair reproduction of the downstream evolution of the width and the transverse displacement of investigated shallow mixing layers on laboratory scale. Simulation of river confluences yield very narrow mixing layers which corresponds to the often observed phenomenon that merging rivers hardly mix, but appear to flow alongside each other over a long reach.

**Friction velocity associated to a non-uniform flow and an intermediate scale roughness***Hossein Afzalimehr, François Ancill*

This work consists of an experimental study of the resistance associated with non-uniform flows over cobble-bed channels, leading to an intermediate scale roughness. Friction velocity is estimated for twelve cases of accelerating and decelerating flows. Four estimation methods are compared: Reynolds stress, logarithmic law, parabolic law and a global approach. They are all in close agreement. The observed mean longitudinal velocity profiles are consistent with observations

reported in the literature for non-uniform flows over gravel-bed channels with small relative roughness. Accelerating flows produce smaller friction velocities than decelerating flows, which is contrary to observations reported in the literature.

**Three-dimensional numerical simulation for an open channel flow with a constriction***N.J.Shankar, E.S.Chan and Q.Y.Zhang*

Flow characteristics in an open channel with a constriction are investigated numerically by using a three-dimensional multi-level hydrodynamic model. In this model, the two-step Euler predictor-corrector algorithm is introduced to predict and correct free surface water level. The momentum equations in horizontal directions are discretized in an explicit scheme for the component velocities  $u$  and  $v$ , and the continuity equation is discretized for the velocity  $w$  in an implicit scheme in uniform and non-uniform grid systems. The model has been tested against analytical solutions for two standard cases and used to study sudden contraction and expansion open channel flow. The numerical results are in good agreement with analytical and experimental data. Simulated flow patterns for the sudden contraction and expansion flow show reasonable flow characteristics downstream of an opening.

**Hydraulic condition for undular-jump formations***Iwao Ohtsu, Youichi Yasuda and Hiroshi Gotoh*

This paper presents the upper limit of the inflow Froude number for undular-jump formations in smooth rectangular channels. It has been found that the formation of undular jumps depends not only on the inflow Froude number but on the boundary-layer development at the toe of the jump under conditions in which the effects of the aspect ratio and the Reynolds number on the flow condition are negligible. The velocity of the first wave crest immediately before the breaking is at a maximum near the water surface and becomes a critical velocity. For undular jumps with the developing inflow, the upper limit of the Froude number  $F_{1\text{limit}}$

has been shown experimentally as  $F_{1\text{limit}} = 1.3-2.3$ . For the fully developed inflow,  $F_{1\text{limit}} = 1.7$  has also been obtained, and it shows the same value as described in many textbooks. The upper limit of the inflow Froude number for undular-jump formations has been derived by taking account of the boundary-layer development and considering the flow along the water surface immediately before the breaking. The predicted values agree with experimental results.

**Velocity profile of sediment suspensions and comparison of log-law and wake-law***Xingkui Wang, Zhao-Yin Wang, Zhong Yu and Danxun Li*

The log-law and wake-law of velocity profile of open channel flow of sediment suspensions are discussed and compared in the paper. Data from published literature are employed for comparison of the two laws and regression analyses are conducted on the main factors affecting velocity profile. Empirical formulas are obtained for estimation of the factors from the flow conditions. The elevation of the maximum velocity and the deviation of velocity from the logarithmic formula at the water surface are functions of the aspect ratio of the channel. The log-law is developed into Eq. (20) applicable to the whole flow including the region near the water surface for various boundary conditions. The wake law describes the velocity distribution below the maximum velocity point. The relative error of wake-law (11%) is larger than that of log-law (6%). Moreover, the wake coefficient must be determined by using the measured velocity profile because there is no reliable formula to estimate its value from the flow conditions.