

# EWRA news

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### EWRA news: The bulletin of EWRA

Responsible: Prof. G. Tsakiris, President of EWRA  
Editor: B. Charalambous, Secretary General of EWRA  
Assistant Editor: Dr D. Alexakis  
Publishing Editors: D. Tigkas & H. Vangelis  
[www.ewra.net](http://www.ewra.net)

### International Symposium:

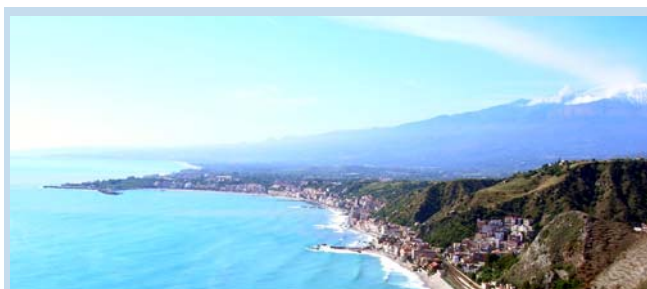
**'Water Engineering and Management in a Changing Environment'**  
(Taormina, Sicily, 29 June – 2 July 2011)

The 6<sup>th</sup> International Symposium of the European Water Resources Association will be held in Taormina - Sicily from 29<sup>th</sup> June to 2<sup>nd</sup> July 2011. The objective of the Symposium is to review the latest developments of water resources management worldwide.

The Symposium will include reports on the developments of the application in the European countries of EU directives on water resources management WFD 2000/60 and on floods 2007/60 as well as the preparations for the droughts directive. Further topics such the advances and interesting cases of water engineering worldwide will be presented in the Symposium.

The Symposium will be organised for EWRA by a local organizational scientific committee mainly from the University of Catania with the coordination of Prof. A. Cancelliere.

The full announcement of the Symposium (topics, committees, deadlines etc) and the call for papers will be circulated in April 2010.



## EWRA

6<sup>th</sup> International Symposium  
**Water Engineering and Management  
in a Changing Environment**

Taormina - Sicily, Italy  
29 June - 2 July 2011

<http://www.ewra.net>

## Copenhagen UN Summit Climate Change and Global Water Security

*G. Tsakiris*

The Copenhagen world climate summit organized by the United Nations is taking place with the aim of agreeing on a successor to the Kyoto Protocol. The talks in Copenhagen are widely viewed as the last chance for humanity to curb soaring carbon dioxide and other greenhouse emissions which are blamed for global climate change.

International research centers and scientific committees have shown that due to increasing emissions, sea levels will rise and temperature and precipitation patterns will be substantially disturbed in many parts of the world. Some recent reports include projections that are really frightening. If they are confirmed, by the end of this century, they will create very adverse conditions jeopardizing life and development in most parts of the world. Extreme events will multiply, causing natural catastrophes along with widespread poverty and disease.

The results of climate change will hit the developing countries hardest due to their high vulnerability to these changes and their very fragile environments and economic weaknesses.

The principal negotiators appear to support views that do not merge into a single, conclusive line. To some extent negotiators still lack global thinking and come to talks eager to support their country's interests. Blocs of countries, as expected, are still far from a binding treaty at the December summit in Copenhagen.

Obviously, various interests are at stake in the climate talks in Copenhagen. Environmental groups, companies and states seem to have conflicting views. Companies conceive global change as a new opportunity for boosting earnings. Industrialized states fear negative impacts for their welfare systems, whereas countries with booming production are seriously considering the possible negative effects of their rates of growth. Influential environmental groups from the north are seeking cuts in emissions regardless of the individual status of each country.

What seems logical to expect at this stage is that talks will be based on the previous agreement which was signed by 186 countries and commits all the world's rich nations (except the US) to cut gas emissions. However, as is clear from last week's news reports, the views of a number of diplomats indicate reluctance to accept even the basics of the Kyoto Protocol.

Although current US policy on climate issues is more flexible and promising than in the past, it seems that, due to internal difficulties on the one hand and the interests of the industry on the other, it is most probable that US diplomats will continue with the rhetoric in favor

of a nonbinding loose agreement and avoid tackling some hot issues. As for the other players – China, India, the G77 and EU – it often appears that they still do not share the same principles.

There are several political games being played between the major players, particularly regarding whether the new treaty should be binding or not, what level of reduction of gas emissions will be decided, how this reduction will be allocated between the countries etc. Although all these questions are important for the future of the planet, there are some additional important issues which should be also addressed. These include: a) how the rich nations will support developing countries to combat climate change and its impacts; and b) how to lower the consumption of natural resources and commodities in the developed world.

Regarding the former, all the rich nations should acknowledge their responsibility since they are responsible for the vast majority of accumulated greenhouse gases. Rich countries should help developing countries adapt to the new adverse conditions. In this context, EU leaders have agreed to pay a share into a global fund that would amount to \$100 billion annually by 2020. Although this was a promising move, the same leaders have not yet clarified the size of the contribution from public funds, to the disappointment of UN officials. However, regardless of certain internal disagreements, the EU seems to be heading toward an agreement through a structured dialogue under the umbrella of the UN, which is undoubtedly the most appropriate forum for these talks. This may be seen as an achievement, especially when compared to other strong players, for example US and China, which are pursuing somewhat obscure bilateral negotiations.

As far as consumption in the industrialized world is concerned, there is an urgent need for all parties to accept the fact that this is one of the major causes of the deterioration of global conditions. It is also the reason why poor nations increase production for their rich counterparts, using high carbon technologies that destroy their environment and contribute to global warming.

In talks held in Lemesos, Cyprus, last June, during the General Assembly of the European Water Resources Association (EWRA), it was concluded that European scientists should be more insistent on issues relating to climate change and water resources which affect rich and poor countries alike. In short, these issues include "Global Water Security", "Mitigation and Adaptation" and "Transboundary Cooperation".

European water scientists are today sending their message to diplomats negotiating at Copenhagen that a just agreement for the poor nations should be reached. Water security will be the key issue in the coming years since climate change is expected to affect water availability and water quality patterns in a large number

of countries that are already facing acute water problems. Serious droughts and catastrophic floods will pose an increasing threat to the vulnerable systems of the poor countries.

World leaders should promote programs funded by rich countries for assessing the impacts of climate change, for preparedness plans for facing natural disasters (including early warning systems), and for the transfer of knowledge and adaptation technologies in various sectors (agriculture, forestry, energy, fisheries and aquaculture). Particular attention should be given to water scarcity problems which are expected to be even more destructive for the societies of the developing countries. Water is a central issue and should be addressed directly at the Copenhagen talks. Global Water Security is already at risk with or without climate change.

In order to help poor nations prevent catastrophes involving their resources, several "soft" activities should also be promoted such as networking and facilitating access to the information systems and technological innovations of the industrialized world. As far as this issue is concerned, the scientific community has its own responsibility.

In the hope that a binding new treaty will be signed in Copenhagen, the European Water Resources Association is sending a clear message to all participants: "Think globally – act now".

December 2009



*George Tsakiris is professor of water resources management at the National Technical University of Athens and Director of the Centre for the Assessment of Natural Hazards & Proactive Planning.  
E-mail: gtsakir@central.ntua.gr*

## Management Strategies to reduce Leakage in Urban Water Networks

*B. Charalambous*

Water shortage and the future threat posed by changing climatic conditions has intensified the need for the development of appropriate water management approaches, which aim in keeping a balance between water supply and demand.

Losses from urban water networks must be of concern to every water utility, especially in areas of our planet where water is found in very limited quantities. It is therefore imperative that water utilities apply simple and effective methodologies in accounting for water losses from their transmission and distribution systems. Water utilities need to establish a water audit method which traces water from its source right through the system

and to derive at the end the revenue and non-revenue components, in other words to establish a methodology for water accountability and an integrated approach to water loss control.

The importance and significance of establishing a proper water audit system in order to account efficiently and accurately for all water produced, stored and distributed is paramount and a must be the foundation stone for any Water Loss Control strategy. Reduction and control of water losses are achieved through the application of a holistic strategy based on the following actions:

- Active Leakage Control
- Pressure Management
- Speed and Quality of Repairs
- Pipeline Rehabilitation and Renewal

Active Leakage Control is required to be implemented in order to reduce leakage to level below which is not economically viable to do so. When first undertaking leakage detection it will be relatively easy to locate and repair leaks. Once the 'easy' find leaks are found and repaired a greater level of effort will be needed to find further leaks.



*A leaking pipe joint*

Pressure Management is often applied where networks operate at high pressure, often not needed, thus causing more pipe bursts. It has been established that pressure is related to leakage, the higher the pressure the higher the volume of water which leaks. In addition pressure affects the number of pipe bursts, the lower the pressure the fewer the number of new pipe bursts.

Speed and Quality of Repairs is an action which must be taken seriously because the longer a leak runs the higher the volume of the water being lost. In addition of repairing the leak as soon as it is identified it is equally important to repair it well, using good quality and materials, so that it will sustain the integrity of the pipe.

Pipeline Rehabilitation and Renewal needs to be considered as an option in order to avoid system failure due to the high levels of leakage. This action however is costly and needs to be carefully considered because it may not yield the required results in terms of leakage reduction.

Today, there is a water crisis in many parts of the world

and it is imperative that water is managed correctly irrespective of its use. Reducing losses from distribution networks is of the utmost importance and water utilities must recognise this and respond positively. In addition we must all use water wisely and avoid wastage. Unfortunately water is wasted, and as long as people are not facing water scarcity, they believe access to water is an obvious and natural thing. With urbanisation and changes in lifestyle, water consumption is bound to increase and a combined effort by all concerned is very much needed in order to address the problem and to have encouraging results.



Pipeline renewal

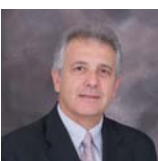
Efficient and effective water loss control should be recognised as a first priority for improving potable water supply. Decision makers at all levels in water utilities must understand that any water loss control strategy in order to be effective must be a continuous activity based on a long term strategy and should form an integral part of the utility's vision. The success of the strategy will inevitably depend on the commitment and dedication at all levels within the utility and of course on the adoption of appropriate strategies and techniques.

The benefits of a water loss control strategy could be summarised as follows:

- Saving a precious and valuable resource
- Increasing the efficiency of existing systems
- Delaying huge infrastructure investments
- Increasing the life expectancy of the systems
- Increasing the revenues for the water utility
- Reducing energy requirements
- Improving the Carbon Footprint of the utility

The efforts need to be continued and intensified by all concerned in all areas of water management including water loss control striving towards water sustainability through better planning, management, innovation and technological advancements.

February 2010



Mr Bambos Charalamabous is the Secretary General of EWRA and Director of Technical Services of the Water Board of Lemesos. E-mail: Bambos@wbl.com.cy

## Evaluating published research II

G. Tsakiris

Editor-in-chief of the journal *Water Resources Management*

In the last issue of EWRA News (June, 2009) I presented a note proposing a new index for evaluating published research. The proposed index called L-index was announced and discussed in the General Assembly of EWRA in Lemesos - Cyprus (June 2009). From that event on, I received a number of comments concerning the L-index and its use. Summarizing the basic aspects of the L-index is useful for all those who commented on the index during the last 6 months of 2009.

1. The L-index was proposed as quantitative index for assessing published research by counting both number of papers published in scientific journals (n) and the number of citations in other papers (N). The L-index is calculated by multiplying the number of papers times the logarithm (base 10) of the average number of citations per paper published, and rounded to the nearest integer number. That is:

$$L\text{-index} = [n \cdot \log N/n]$$

The calculation refers to all cases with  $N/n > 1$ . In case  $N/n \leq 1$  then a different procedure is described in the previous note (Tsakiris, 2009)\*. In any case L-index can be considered also as the highest integer which can be obtained from the statistics of someone's published research.

2. L-index is proposed for replacing h-index which is less sensitive and somewhat unfair to scientists and papers with an overwhelming recognition. It was noticed that h-index remains practically the same if a paper is cited 20 or 200 times. It is also unfair for scientists with breakthrough research results concentrated in a small number of papers. To illustrate the difference of the two indices a representative sample of academics was examined and both L-index and h-index were calculated. Figure 1 shows the comparison of the two indices. It is clearly shown that the L-index is much more sensitive compared to the h-index.

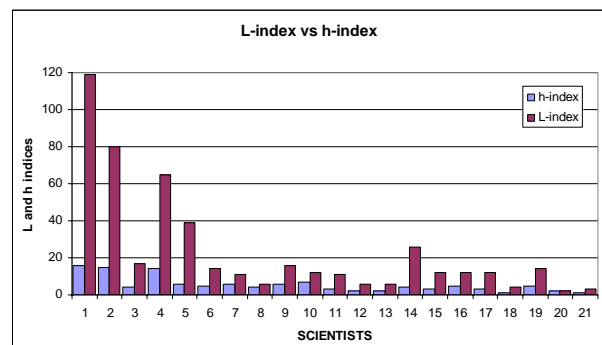


Fig.1. Comparison of L-index and h-index using a sample of academics

3. For those who ask for the appropriate L-index levels for the academics at various levels the answer is that it is difficult to have global L-index thresholds because each country and each university has its own standards.



Anyhow, considering technological institutions of many Mediterranean Universities, it seems that a general rule for the level of Assistant Professor is that the L-index could be greater than 5 and for the Associate Professor and Professor the L-index can exceed 10, measured on the most strict scale (e.g. scopus.com). It should be mentioned that the above border lines of the L-index can be achieved by several combinations of number of papers ( $n$ ) and number of citations ( $N$ ). As example the curves of L-index 5 and 10 are plotted in Fig.2.

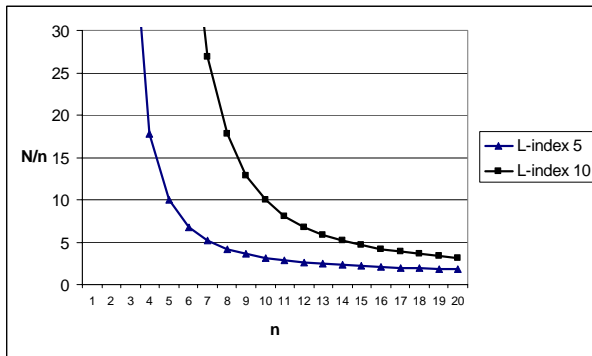


Fig.2. L-index 5 and 10 curves

4. The comprehensive evaluation of a scientist's research activities cannot be based only on the published research in international scientific papers and certainly cannot be represented by a single figure. His performance should be evaluated against a multiple set of criteria the most important of which are:

- i. Papers in journals
- ii. Conference papers and book chapters
- iii. Research projects undertaken as project leader or leader of a partner
- iv. Citations

In Fig.3 an illustrative example of such multiple criteria evaluation is presented. Note that the selected scales are different indicating the weight of each criterion. In the example presented in Fig.3 the scores on the above criteria are 32-30-10-100. Needless to say that the L-index refers only to the first and the last criterion.

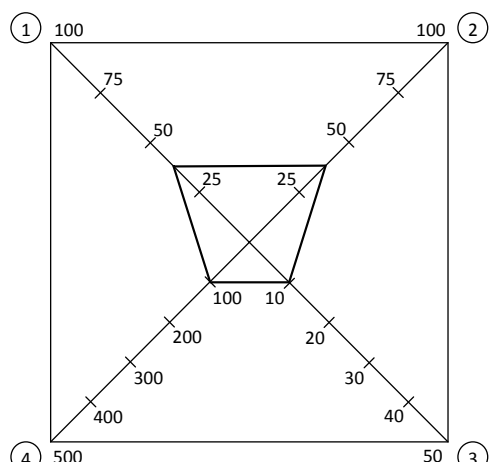


Fig.3. Multiple criteria evaluation of research activities

\* Tsakiris G. 2009. Evaluating published research. EWRA News, June 2009

## Top-thirty journals in the subject category: WATER RESOURCES

D. Alexakis

One of the quantitative tools for evaluating scientific journals is the impact factor, often abbreviated IF. Eugene Garfield who was the founder of the Institute for Scientific Information (ISI) has introduced the impact factor. Now ISI is a part of Thomson Reuters.

In fact, the impact factor is a measure of the frequency with which "the average article" in a journal has been cited in a given time period.

The impact factor 2008 for a journal is calculated by the number of times articles published in 2006-2007 was cited in indexed journals during 2008 (a) divided by the number of articles, reviews, proceedings or notes published during the same time period (b).

That is: 2008 IF = a/b

New journals can receive an impact factor after two years of indexing. The impact factors as well as the 5-year impact factors are included in the Journal Citation Reports (JCR).

Table 1. Top-thirty scientific journals for 2008

Rank	Abbreviated Journal Title	Impact Factor	5-Year Impact Factor
1	WATER RES	3.587	4.274
2	WATER RESOUR RES	2.398	2.801
3	J HYDROL	2.305	2.868
4	ADV WATER RESOUR	2.235	2.440
5	HYDROL EARTH SYST SC	2.167	2.131
6	J CONTAM HYDROL	2.106	2.313
7	HYDROL PROCESS	2.002	2.539
8	RIVER RES APPL	1.959	2.436
9	ENVIRON TOXICOL	1.899	2.274
10	IRRIGATION SCI	1.891	2.145
11	CATENA	1.874	2.290
12	AGR WATER MANAGE	1.646	1.829
13	AQUAT CONSERV	1.619	2.408
14	VADOSE ZONE J	1.441	-
15	WATER AIR SOIL POLL	1.398	1.779
16	WATER RESOUR MANAG	1.350	1.539
17	NAT HAZARD EARTH SYS	1.345	-
18	GROUND WATER	1.304	1.664
19	J WATER RES PL-ASCE	1.275	2.201
20	J HYDRAUL ENG-ASCE	1.272	1.885
21	ENVIRON GEOCHEM HLTH	1.238	1.467
22	HYDROLOG SCI J	1.216	1.876
23	J AM WATER RESOUR AS	1.208	1.451
24	NORD HYDROL	1.194	1.331
25	CLAY CLAY MINER	1.171	1.563
26	DESALINATION	1.155	1.394
27	CLEAN-SOIL AIR WATER	1.145	-
28	PHYS CHEM EARTH	1.138	1.362
29	J SOIL WATER CONSERV	1.121	1.647
30	HYDROGEOL J	1.100	1.597

Finally, the ISI indexes 60 scientific journals in the subject category of Water Resources. The Top-thirty of the scientific journals for this subject category according to JCR is tabulated in Table 1.

All the information was obtained from the following web address: <http://admin-apps.isiknowledge.com/JCR/JCR>

January 2010



*Dr D. Alexakis is an Associate Researcher at the Lab. of Reclamation Works and Water Resources Management of the National Technical University of Athens and an Assistant Editor of the EWRA news Bulletin  
E-mail: dial@survey.ntua.gr*

### 7th International Conference of EWRA: "Water Resources Conservancy and Risk Reduction under Climatic Instability" (Lemesos – Cyprus, 25-27 June 2009)

The Conference was successfully organised by the University of Cyprus (Department of Civil and Environmental Engineering).

About 200 participants from 24 countries actively participated in the various Symposia of the Conference. 130 papers (including keynote speeches) were presented in oral form in 3 parallel tracks during the 2 ½ days of the conference whereas a number of papers were presented as poster papers.



*The President of EWRA, Prof. G. Tsakiris.*



*From right to left: The chairman of the GA Nikos Tsiourtis ex vice president of EWRA and Miriam Balaban, Secretary General of the European Desalination Society*

Major contributions were made in the three thematic areas of the Conference:

- a) Water Related Natural Hazards: Proactive Planning and Crisis Management
- b) Water Conservation Management & Technology – Public Learning and Participation
- c) Macro-engineering and Environmental Governance



*Prof. S. Christodoulou  
Conference Host and Chair*



*Prof. A. Cancelliere  
Treasurer of EWRA*

Important contributions were also made by members of the SMART Research Consortium (Sustainable Management of Available Water Resources with Innovative Technologies) the meetings of which were held in parallel with the conference.

The volume of Proceedings includes the oral presentations was edited by Prof. S. Christodoulou (University of Cyprus). The volume has 1100 pages (ISBN 978-9963-671-94-6). The abstracts of the papers included in the Proceedings can be found at [www.ewra.net](http://www.ewra.net).

### EWRA General Assembly (Lemesos, 25 June 2009)

#### 1) AGENDA

The General Assembly (GA) of the European Water Resources Association has been held in Lemesos (Cyprus), Hotel Elias Beach on Wednesday the 25th of June 2009, 16:00.

The agenda of the GA was as follows:

1. Account of activities of EC during the past term in Office
2. Preparation of EWRA's participation in the Copenhagen Summit (Keynote Speech: Prof. N. Dalezios, expert on climate change)
3. Reorganisation of EWRA / Amendments in the Statutes (Introduction: Prof. R. Maia)
4. New initiatives (Working groups, Services) (Introduction: Dr. B. Charalambous, Organising Committee of the 7th EWRA Conference)
5. New journals and publications (Introduction: Prof. A. Cancelliere)
6. Evaluation of scientific research (Introduction: Prof. G. Tsakiris)
7. Next Symposium (2011) and Conference (2013) venues (Introduction: Prof. S. Christodoulou, Host of the 7th EWRA Conference)
8. Elections of the new EC

## 9. Other items

### 2) EWRA EC 2010-2013

During the General Assembly of the European Water Resources Association held in Lemesos/Cyprus on the 25th of June 2009 a new Executive Committee was elected for a 4-year term in office January 2010 – December 2013.

The new EC is as follows:

- G. Tsakiris (Greece), President
- R. Maia (Portugal), Vice President
- B. Charalambous (Cyprus), Secretary General
- A. Cancelliere (Italy), Treasurer
- S. Hamilton (UK), Coordinator of Activities



*The new Executive Committee of EWRA  
(from right to left: B. Charalambous, G. Tsakiris,  
R. Maia, A. Cancelliere, S. Hamilton).*

The main activities discussed during the GA in Lemesos and confirmed during the EC meeting in Lemesos (June 2009) and Athens (Sept.2009) are briefly presented below:

### 3) AMENDMENTS IN THE STATUTES – NEW STRUCTURE OF EWRA

- i) GA confirmed the change in the Statutes proposed in a previous GA in Chania Crete for expanding the term in Office of each EC from 3 to 4 years in order to coincide with the International Conferences of EWRA held every 4 years.
- ii) The structure of EWRA is returned to its initial form with individual members from all European Countries and Associate members from all the other countries of the world. EWRA is governed by a 5-member Executive Committee and the General Assembly which is held every 2 years.

### 4) EWRA WORKING GROUPS

After the agreement obtained in the General Assembly in Lemesos (June 2009), the Executive Committee met in Athens on the 28th August 2009. One of the major issues discussed in that meeting was to propose the first 5 Permanent Working Groups of EWRA.

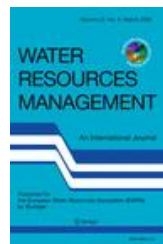
The following working Groups are proposed:

- Water System Efficiency
- Energy and Technology
- Climate Change, Extreme Events and Water Security
- Water Quality, Desalination and Non-conventional Water Resources
- Water Resources Management (Legislation-Best Practices)

The members of EWRA are invited to propose suitable

candidates for the above working groups for the period 2010 and 2013. Each group will consist of at least 5 members with one of them acting as the chairman. One member of each group will be also member of the EC of EWRA. The deadline for candidates will be the end of June 2010. Interested members of EWRA can communicate with the Secretary General Bambos Charalambous for any issue related to the Permanent Working Groups of EWRA.

## Water Resources Management: Rocketing impact factor



Water Resources Management the leading journal in the water sector is published now with 15 issues per year. The impact factor of the journal for the year 2007 has increased to 1.35, placing the journal in the first row of the international technical journals in the field of Water Resources. The inflow of articles submitted for publication has also significantly increased reaching about 800 for the year 2009. From those, 150-160 papers are published annually, which simply means that on average 1 out of 5 papers submitted, is finally published in the journal.

Special volumes of the journal are also published each year. For the year 2010 two special volumes are scheduled. The first is devoted to the Conference of EWRA held in Lemesos. A small number of papers selected from the conference will appear in this special issue. Prof. S. Christodoulou is the guest editor of this issue.

## European Water: Established



The European Water, the journal of EWRA devoted to interesting applications in water related topics, has been already established with its both types of publication (electronic and printed). More papers are submitted for publication and a double number of papers are published annually. An enhanced production with 4 issues per year instead of 2 is scheduled for the year 2010. Considering that the journal will continue its ascending way, European Water will apply for the impact factor after 2011. The editorial board was strengthened by active new members and two new Associate Editors were appointed (Prof. S. Christodoulou / University of Cyprus and Prof. A. Loukas / University of Thessaly) for assisting Prof. M. Benedini, the Editor of the journal.

## New journals from EWRA

Two new journals of EWRA will be launched in 2010. The journal of Macro-engineering and the Water Utilities

Journal. The scope and the audience of these two journals are completely different.

### **Macro-engineering**



Macro-engineering will be published once a year as a special volume covering all aspects of Macro-engineering as they are related to water resources, environment and development. Benchmark and Overview papers are invited by the journal Editors Prof. A. Cancelliere and Prof. R. Maia. A number of

profound scientists in the field will assist the editors in producing volumes of high quality which will review the progress in this new field of research and technology.

### **Water Utilities Journal**



The Water Utilities journal is launched aiming at covering more practical aspects of the water sector. The journal will present interesting solutions of real water related problems, technology innovations, practical guidelines for enhancing the efficiency of water systems as well as good practices and success stories of the water sector. B.

Charalambous will be the coordinating editor of the journal and authors should contact him or submit their articles in the journal's site ([www.ewra.net](http://www.ewra.net)).

### **International Conference: 'Drought Management, Economics of Drought and Drought Preparedness in the Mediterranean' Istanbul, Turkey (4-6 March 2010)**

The Second International Conference "Drought Management, Economics of Drought and Drought Preparedness in the Mediterranean" was held in Istanbul, Turkey (4-6 March 2010).

The President of EWRA, Prof. G. Tsakiris, has presented an invited contribution with the title: "Towards an adaptive preparedness framework" and two research papers:

- "Drought impacts on rainfed agriculture under climatic instability"
- "Proactive Management of Water Systems to Face Drought and Water Scarcity in Islands and Coastal Areas of the Mediterranean (PRODIM)"

Further information can be found at the conference's website: <http://www.iamz.ciheam.org/nemedca/istanbul2010/index.htm>

### **Encyclopedia of Lakes and Reservoirs**

Publication Year: 2010

Published by: Kluwer Academic Publishers Group

ISBN: 1402056168

Binding: Hardback

Pages: 800

This title will be a vital reference for hydrologists, civil engineers, ecologists and environmental scientists worldwide. The book contributes to the physical, chemical and ecological characteristics of lakes and reservoirs as well as describing their uses and environmental state trends in different parts of the world. Over 75 scientists from various countries have contributed in both large and small ways in this authoritative volume. Superbly illustrated throughout, it includes over 200 entries in a wide range of topics that include for example: climate change, effects, acidification, canals, artificialisation, chemical, biological, dams, dew ponds, drainage, ecological, eutrofication, evaporation, fisheries, geological, geographical, hydrological, hydro-electric power, nutrients, organic pollution, paleo-limnology, reservoir capacities and depths, sedimentation, water resources. These include many of the modern environmental and controversial problems.

### **Urban Hydraulic Works (in Greek)**

Tsakiris G. (Editor)

Alexakis D., Bellos K., Charalambous B., Geitonas A., Kanakoudis V., Nallbantis I., Papathanasiadis T., Spiliotis M., Tsakiris G.

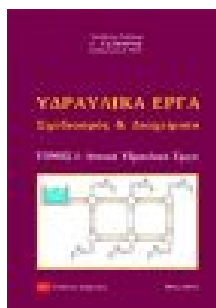
Publication Year: 2010

Published by: Symmetria Publications

ISBN: 9789602662892

Binding: Paperback

Pages: 714



This book provides a comprehensive review of the problems associated with the urban hydraulic works. It discusses design of water supply networks, water demand, water quality, water treatment, management of water networks, wastewater treatment and urban drainage networks. The book will be particularly valuable for practising planners and engineers and as main text for graduate students in water resources management and design of urban water networks.