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IAHS Newsletter

www.iahs.info NL107 January 2014

11th Kovacs Colloquium, Paris, 16–17 June 2014

Hydrological Sciences and Water Security: Past, Present and Future

This colloquium is the continuation of a series of biennial international scientific meetings organized jointly by the *International Hydrological Programme* (IHP) of UNESCO and the *International Association of Hydrological Sciences* (IAHS) in the most challenging fields of water resources research. The meetings commemorate the late George Kovacs, an established authority on hydrology, who served as Chairman of the Intergovernmental Council of IHP and as Secretary General and President of IAHS.

The Kovacs Colloquium will be jointly organized by UNESCO IHP and IAHS and will take place at UNESCOâ€™s Paris headquarters prior to the 21st Session of the Intergovernmental Council of IHP in June 2014. The Colloquium will run from **9 am Monday 16 June to 1 pm Tuesday 17 June** and will comprise several invited lectures, an interactive panel session plus a poster session.

Water Security is defined by IHP as: *the capacity of a population to safeguard access to adequate quantities of water of acceptable quality for sustaining human and ecosystem health on a watershed basis, and to ensure efficient protection of life and property against water related hazards: floods, landslides, land subsidence and droughts*: (IHP VIII (2014-2012) Strategic Document, Water Security: Responses to Local, Regional and Global Challenges).

The Colloquium will address the emergence and development of water security concepts over the **past** decades, the state of **present** day ideas and opinions, and will look to likely developments in the **future**. Of particular importance will be inclusion of the new IAHS decade of research Panta Rhei: Change in Hydrology and Society and its relevance to Water Security.

All interested hydrologists are invited to participate; **registration is free of charge**. The abstract submission will open soon with detailed instructions for oral as well as poster sessions.

ABSTRACT DEADLINE: 15 April 2014.

Contact: Ms Barbara Lwanga Kavuma, IHP Secretariat, b.lwanga@unesco.org

FACETS OF UNCERTAINTY, STAHY'13 Workshop

STAHY'13 Workshop, Kos Island, Greece, 17–19 October 2013

The topical workshop of the *International Commission on Statistical Hydrology* (ICSH-IAHS, formally STAHY) was held in Kos Island, Greece, 17–19 October 2013, jointly with two prestigious events: the annual *EGU Leonardo Conference*, and the *Hydrofractals Conference* that takes place every 10 years. Each of the above events had its own dynamic, but they all focused on a common idea: the uncertainty in natural processes. The different views of the three components were apparent during the Kos convention. Uncertainty has often been regarded as an opponent of science, whose task is to eliminate it or reduce it as much as possible. However, it has also been argued that uncertainty is intrinsic in nature, impossible to eliminate, and a quality with positive aspects. Understanding and quantifying uncertainty could make the understanding of Nature more feasible and its modelling more realistic. Therefore, the focus of the Kos convention was not only to contribute to uncertainty elimination, but to show how modelling can be combined with uncertainty estimation to improve the quality of models and predictions.

The Round Table panel: from the left: Alberto Montanari, Tim Cohn, Salvatore Grimaldi, Harry F. Lins, Stephen Hurst, Enda O'Connell, Demetris Koutsoyiannis, John Sutcliffe and Ayman Georges Awadallah**.**

One of the important highlights of the scientific programme was the Round Table entitled â€œThe legacy of Harold Edwin Hurst in hydrological stochasticsâ€ ogist. He spent 60 years studying the Nile for the Egyptian government, during which he laid the foundation of a monumental set of hydrological records and investigations. His studies of the size of reservoir needed to maintain a given supply from natural Nile flow series showed that this was significantly greater than that based on random series. This finding, known as the Hurst phenomenon, was confirmed in other natural series and, in connection with advances in theoretical and practical mathematics and statistics (illustrated by the works of Kolmogorov and Mandelbrot), has been fruitful in many scientific disciplines including economics, electronics and recently climatology. The Round Table, chaired by **John V. Sutcliffe**, aimed to celebrate Hurstâ€™s legacy; the participants focused on (a) his life and career, (b) his scientific contribution and (c) the links of his work to the advances to which it gave rise.

STAHY workshop participants at Asclepion.

Of significant importance also was the Poster Session, held at the archaeological site of Asclepion, a

sacred and important monument recognized as a World Cultural Heritage site. About 50 posters were presented and many of the authors gave short oral overviews of their contributions, which were videoscoped and made available online at the IAHS/STAHY web site (http://www.stahy.org/Events/ReportKOS2013/tabid/115/Default.aspx).

Presentation of the STAHY Best Paper Award: from the left**,** Ebru Eris, Salvatore Grimaldi, Emna Gargouri, Shih-Chieh Kao (co-author of the prize-winning paper), Christophe Cudennec.

The first STAHY Best Paper Award was presented during the IAHS-STAHY workshop. This award was recently established by the ICSH-IAHS Commission and is particularly competitive. The award was made for the best paper published in 2009–2010–2011 and listed at the STAHY website, www.stahy.org website. The selection procedure includes three steps: the first ranks all the papers in term of SCOPUS citations (excluding self-citations). Then the first 20 are evaluated by the ICSH-IAHS Commission in order to identify a short list of five papers. A final deeper evaluation allows selection of the winner. This first award was assigned to the paper by *S.-C. Kao and R.S. Govindaraju: A copula-based joint deficit index for droughts (2010) Journal of Hydrology 380 (1-2), 121–134*. Dr Shih-Chieh Kao gave an invited lecture during the STAHY workshop.

The team at the National Technical University of Athens tried to combine an interesting scientific programme with pleasant social activities during the Kos convention. A high attendance in all sessions continued during the breaks and social events with socializing and networking of the delegates. It was unanimously agreed that this was a successful conference.

Demetris Koutsoyiannis & Salvatore Grimaldi

A detailed report is in progress at www.stahy.org

Hydrological Sciences Journal Editorial Retreat

Prior to the *Facets of Uncertainty* meeting in Kos, the Co-editors of *HSJ*, Zbyszek Kundzewicz and Demetris Koutsoyiannis, convened an Editorial Retreat with 17 of the journal'sÂ Associate Editors, Frances Watkins and Cate Gardner from *IAHS Press* and representatives from *Taylor & Francis*, to focus on the journal. It was the first event of this type and made possible because T&F provided funding.

The Retreat dinner was held at a mountainside restaurant as the sun set over the islands of Kalymnos and Pserimos to the north.

Previously, group editorial discussions about *HSJ* have been limited to working lunches or dinners every two years, fitted in during IAHS assemblies. That format will continue, but the duration of this Retreat enabled in-depth discussion and more Associate Editors to put faces to names that hitherto they only knew in emails.

In the last five years the number of submissions to *HSJ* has more than doubled. The journal has just increased in size: the 2014 volume (59) will have 12 issues, cf. 8 in 2013 (vol. 58), but there will still only be space to publish a fraction of the very many papers that are submitted; clearly excellent papers have to be the priority. There is a backlog of accepted papers now, so larger future volumes will reduce the queue. The need to maintain/improve the quality of *HSJ* (and the IF) and support the publication of research papers from developing countries was considered, and a suggestion to publish an editorial to assist such researchers to improve the chances of getting their work published is being implemented. An editorial guest-edited by Denis Hughes, Kate Heal and Christian Leduc will appear later in 2014 (likely in issue 59(5)).

Ways to reduce the time required for reviewing of papers, i.e. between submission and acceptance/rejection, were considered. The time from acceptance to publication is now shorter because accepted papers can be initially published as author manuscripts, with a DOI, and when ready for publication are replaced with the final paper, even if it is not yet assigned to a volume/issue. Discussion also covered features to make *HSJ* attractive to even more readers but no decisions were made. It is hoped that as the Panta Rhei initiative progresses, *HSJ* will be the primary outlet for publication of the programme results.

The Retreat was felt to have been worthwhile, especially for the newer Associate Editors. A similar retreat is scheduled for 2016, but there will probably be a working lunch/dinner for Associate Editors at the IAHS Assembly in Prague in 2015.

Cate Gardner and Frances Watkins IAHS Press

MOXXI: Measurements and Observations in the XXIst century

The MOXXI Working Group has been set the task to “promote the advancement of novel observational techniques that leads to new sources of information to help better understand the hydrologic cycle” by the IAHS bureau. The MOXXI Working Group will provide a friendly place to share, collect, promote, discuss, test and improve observational techniques.

Hydrology is, at its core, an empirical science in which heterogeneity is found from the pore, all the way up to the catchment and global scale. To adequately deal with this heterogeneity numerous

observations are needed.
Nowadays there is an increasing interest on new technologies or multidisciplinary initiatives for providing new hydrological observations*. Science Questions 1 and 4 of Panta Rhei, the New Scientific Decade of IAHS, 2013–2022 Science Plan includes and underlines the importance of new observations. The new MOXXI WG will coordinate and emphasise this multidisciplinary topic.

- The (starting) focus of this Working Group (WG) is to connect those working on observational techniques in hydrology to share their experiences. To achieve this, the WG will:
- Setup a website to archive and centralise all important publication and online resources related to observations and observational techniques in hydrology.
- Send out regular information bulletins to interested hydrologist to update them on new developments relating to observational techniques. Different media (email newsletters, twitter) will be used.
- Organise an annual topical conference on novel observational techniques in hydrology. This conference will include live demonstrations, hands-on workshops, as well as keynote speakers from outside of hydrology to introduce new observational techniques and encourage multidisciplinary collaborations.
- Sponsor, encourage and co-ordinate the organisation of scientific sessions on observational techniques in hydrology at major geo-scientific conferences (such as the different IAHS events, the EGU general assembly and the AGU fall meeting).

The MOXXI WG executive team consists of: **Rolf Hut** (Delft University of Technology, Chair), **Theresa Blume** (GFZ German Research Centre for Geosciences, Potsdam) and **Flavia Tauro** (Sapienza University of Rome).
Please regularly check the MOXXI web page for updates:
http://www.iahs.info/Commissions--W-Groups/Working-Groups/MOXXI.do

*This is confirmed by several special sessions proposed during some Scientific Assemblies (EGU, AGU), by seminal papers or special issues (for example, special issue of *WRR*: http://dx.do1.org/10.1029/2009WR007966 and an upcoming special issue in *Hydrological Processes*)

Groundwater @ Global Palaeoclimate Signals (G@GPS Africa)

The 2013 ICSU-INQUA-IGCP-GRAPHIC Groundwater @ Global Palaeoclimate Signals (G@GPS) Workshop and Training Course, G@GPS Africa: Long-term recharge of large groundwater basins, was held in Bobole, Mozambique, 14–19 October 2013.

Set in rural Africa, the workshop revolved around identifying rates and times of recharge, for the dual purposes of seeking information about past climates and determining aquifer vulnerability. Participants from 15 countries on five continents discussed a variety of topics, with particular emphasis on development and water resource management issues in African nations.

The topics covered were:

- groundwater-surface water interaction
- strategies for mapping hydrogeologic basins in developing countries
- sustainability assessments
- distinguishing temperature and amount effects in isotopic data
- identifying variations in recharge in large groundwater basins

The meeting also served as a training course on *use of isotopes in hydrologic studies, determining groundwater recharge rates from isotopic and geochemical studies*, and *determining groundwater age*. Nearly half of the meeting participants had limited experience of using isotopes as tracers, making this an excellent capacity building opportunity.

Basic theory and application examples were followed by hands-on demonstrations and practice sampling in the conference centre. A day-long trip was organized to provide practical experience sample regional monitoring wells within the critical Maputo groundwater basin. The first well sampled was located in a school yard, much to the amusement of the local children. Combined with additional samples collected after the meeting by meeting participants, these samples will be analysed for a wide range of major and trace elements, and stable and radioactive isotopes to provide one of the first views of groundwater age in a basin that provides water to over 3 million people.

To complete the training course, participants were required to develop a proposal to identify recharge locations and rates in a potential water supply aquifer of interest, with the assistance of more experienced mentors.

Finally, the meeting provided the opportunity to assess progress towards identifying changes in climate and recharge on broad spatial and temporal scales. The G@GPS group is working to collect this information from large groundwater basins with long residence times around the world. Efforts in several large basins were updated, followed by discussions that provide a framework for the group to move forward. Possible cross-basin climate correlations were discussed, although several important issues and gaps exist that still prevent definitive identification of regional/global changes in paleoclimate patterns. Issues include needing better control and understanding of the origin of the oxygen isotopic signature, and better understanding of how mixing within different aquifers would affect correlations. Unfortunately, very little information from aquifers in the Middle East or South America was available. Closing this gap will be part of the focus of the next workshop and training course, which will be held in Argentina in 2014.

Overall, the organizing committee did an excellent job managing a variety of meeting goals and provided an environment conducive to learning and fostering collaboration. IUGG was a sponsor of this workshop through the International Commission on Groundwater (ICGW) of IAHS. **Randy Stotler**, an isotope hydrogeologist at the University of Kansas in the USA, served as the representative of the ICGW president, **Jim Butler**, at the meeting and is the author of this report.

Randy Stotler

Managing Groundwater Quality to Support Competing Human and Ecological Needs (GQ13)

Summary of GQ13 held at the University of Florida

The 8th IAHS Groundwater Quality Conference (GQ13) was held at the University of Florida, J. Wayne Reitz Union, in Gainesville Florida, 21–26 July, 2013.

This triennial conference was hosted in the USA for the first time, and only the second time in North America. Previous GQ Conferences have been held in Tallinn, Estonia (1993), Prague, Czech Republic (1995), Tubingen, Germany (1998), Sheffield, United Kingdom (2001), Waterloo, Canada (2004), Fremantle, Australia (2007), and most recently in Zurich, Switzerland (2010).

The conference theme was *Managing Groundwater Quality to Support Competing Human and*

Ecological Needs. A wide range of session topics were organized that included many aspects of groundwater quality that link acrossÂ hydrogeologic, ecological and human interfaces. Conference participants had positive experiences both on a social and technical levels bringing them up-to-date on the latest issues related to Groundwater Quality, including the latest approaches for measuring, modelling, and managing groundwater quality. The three year period between GQ conferences allows time for advances in approaches and tools for managing our water quality challenges. The GQ conferences also provide an opportunity to build new collaborative relationships and to maintain existing contacts as well as formulate new ideas and directions for future work.

The conference kicked off with a session on *Energy Storage in Geologic Formations and Biofuel Production Implications for Water Quality* and a talk by **Avner Vengosh** of Duke University on 'Hydraulic fracturing impact on groundwater quality'. This session included talks on thermal energy storage in aquifers. The second session focused on *Aquifer Recharge and Aquifer Storage and Recovery Impacts on Groundwater Quality*. **Henning Prommer** of CSIRO gave a talk on 'Modeling the fate of arsenic during ASR of potable water'. Other sessions during the conference included *Water Quality at the Groundwater-Surface Water Interface*. Here **Mario Schirmer** of the University of Neuchatel gave a talk on 'River restoration with complex hydrological and ecological interactions'.

The main theme of the GQ3 conference was addressed in a session titled *Ecological Links with Groundwater Quality* and **Poul Bjerg** gave a talk on 'Linking groundwater contamination and stream water quality: scientific and regulatory challenges'. During the conference, the 2013 Darcy Lecture was presented. This talk was open to the University campus and drew in an additional group of about 30 students and faculty. The title of the talk was 'Managing groundwater beneath the agricultural landscape'. Two sessions were held related to *Non-aqueous Phase Liquids (LNAPLS and DNAPLS)* and **Tissa Illangasekare** from the Colorado School of Mines presented 'Vapor intrusion from entrapped NAPL sources and groundwater plumes: factors contributing to uncertainty'.

During the conference, poster sessions with plenty of food and drinks were held at the end of each day to provide time to network and establish new collaborations. Following one of the poster sessions, a group of about 30 international conference attendees walked across campus to experience American Baseball as the University of Florida Gators took on the Bulls of the University of South Florida. On the third night of the conference a group of attendees walked to a local restaurant for the traditional GQ conference dinner.

The final day of the conference saw the session on *Groundwater Quality under Development Demands* where **Suresh Rao** from Purdue University gave a talk on 'Unsustainable groundwater exploitation: converging constraints and stochastic regime shifts'. The final session was on *New Measurement Methods for Quantity and Quality* and **Kirk Hatfield**, University of Florida, gave a talk on

'Characterizing contaminant and water flux in fractured rock systems'.

Following the technical sessions, on Friday the conference hosted a technical tour as is the tradition with GQ meetings. A group of about 40 participants from all areas of the world joined the tour. The day started with a short bus ride to Paynes Prairie Preserve State Park and a hike along the La Chua Trail. The Sweetwater stream can be seen flowing into a small sinkhole pond and directly recharging the Floridan Aquifer. Ponds and streams along the hike provided many opportunities to see alligators sunning on the banks.

The next stop was at the Cabot Koppers EPA Superfund site contaminated with creosote in a complex hydrogeologic setting with active remediation systems. During the visit we were able to see multilevel samples being collected using the Westbay System. The group also saw direct pumping of DNAPL from a recovery well recently installed on site.

The third stop on our tour was the Newberry Bat Cave. This is a facility is managed by the University of Florida Geology department and incudes a natural entrance to a karst cave (see photo). The natural entrance involves crawling and sliding through an opening about 30-cm thick to enter a large cavern that the entire group could stand in.

Our final stop was where the groundwater emerges into a clear cold water spring at Blue Spring. Here the water exits through a karst vent into a beautiful blue swimming hole. The water then flows through the spring run entering the Santa Fe River about 500 m downstream. The group hiked the boardwalk above the crystal clear water to see it merge with the tannic waters of the Santa Fe.

Mike Annable and Jim Jawitz (Conference Chairs)

Discounts on journals and books for IAHS members

Hydrological Sciences Journal

Although the *Hydrological Sciences Journal* has now grown from 8 to 12 issues per volume, the IAHS membership **subscription prices remain the same**:
£27.00 for an online subscription and **£48.00** for an online + print subscription (**£32.40** and **£53.40,** respectively, inclusive of VAT, for EU members).
Note IAHS members in poorer countries continue to receive online access to *HSJ* free of charge.
Contact jilly@iahs.demon.co.uk to subscribe.

Urban Water Journal

IAHS members continue to be eligible for a discounted subscription for *Urban Water Journal*. The price for a print *OR* an online subscription is **£45.00** (**£54.00** inclusive of VAT for EU members).
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Expiry date, 31 December 2014.

PALAEOHYDROLOGY, latest IAHS Benchmark publication

PALAEOHYDROLOGY Selection, Introduction and Commentary by Victor R. Baker

Reproduces the Benchmark Papers that have and still influence palaeohydrological research, with commentaries on their significance
Palaeohydrology originated with and continues to have a strong focus on palaeofluvial processes, especially palaeoflooding, and this is reflected in eight sections:

- **Channel Patterns and Regime** commences with Davisâ€™s 1913 paper on underfit rivers, classics by Dury (1954, 1965) and Schumm (1968), and an important Polish contribution, Korzarski and Rotnicki (1977).
- **River Floodplains and Terraces** illustrates how mapping and quantitative description became the basis for palaeoÂ¬hydrological interpretation of the landscape.
- **Alluvial Chronology** considers how the development of dating aided studies that identified major changes driven by climate.
- **Sediment Transport** shows how engineering/geomorphologic underÂ¬standing of sediment processes was initially used to back-calculate the flows associated with fluvial events.
- **Megafloods** are high-discharge flood flows now known to have been especially important at the end of the Pleistocene, but in 1923, Bretzâ€™s hypothesis of such â€œcataclysmic flowsâ€ was controve
- **Palaeoflood Hydrology** brings together the papers that mark the development from geological investigation of flood-scarred landscapes to a broader, global science rooted in environmental change studies.
- **Palaeobotanical** evidence to aid palaeohydrological work originated in the 1960s, and Sigafoos (1964) is a significant contribution.
- **Palaeolakes** were found to afford information central to understanding past climate in the 1960s and three seminal papers are included.

An excellent resource for graduate and post-graduate level courses in hydrology and hydro-geomorphology, reproducing many important papers that are otherwise difficult to access.
IAHS BM9 ISBN 978-1-907161-30-8 (2014) 494 + x pp. A4 format, hardback £75.00 (incl. postage)

The scientific decade of IAHS Panta Rhei (everything flows) 2013-2022

The call for Research Themes and Working Groups of Panta Rhei published on 30 October 2013 marked the start of the involvement of the community in Panta Rhei.
The deadline for proposing Research Themes and Working Groups is 31 January 2014
Alberto Montanari, Chair of Panta Rhei

See *Hydrological Sciences Journal:* Volume 58, Issue 6, 2013
Panta Rhei "Everything Flows: Change in hydrology and society" The IAHS Scientific Decade 2013–2022

Climate Change, Water Resources and Disasters in Mountainous Regions

Report on the International Conference on Climate Change, Water Resources and Disasters in Mountainous Regions: Building Resilience to Changing Climate, Kathmandu, Nepal, 27â€“29 November 2013
The conference was organized Jointly by the S*ociety of Hydrologists and Meteorologists Nepal*, the *Department of Hydrology and Meteorology Government of Nepal*, and *UNESCO International Hydrological Programme Nepal National Committee*, in association with the *Department of Irrigation/Adaptation to Global Change in Agricultural Practices*, the *International Association of Hydrological Sciences* and the *International Water Management Institute*.
The conference was attended by some 275 participants from 24 countries. Invited overview papers were presented including:

- *Challenges related to global changes and water resources* by **Stefan Uhlenbrook**
- *South Asian monsoon systems* by **Robert Gillies**
- *Water Security in the Asian Pacific region* by **Shabhaz Kahn**
- *Climate Change insights from IPCC 5th assessment* by **Kirk Smith**
- *Contribution to High Asian Runoff from Ice and Snow (CHARIS)* by **Richard Armstrong**

My own contribution was on opportunities for high mountain research within a new decade of research, outlining the Panta Rhei initiative with an emphasis on mountain regions. A further 70+ papers focused largely on the Himalaya but extended geographically from Iran to China. Most were concerned with floods, droughts and water supply and many dealt with the implications of climate induced changes in snow and ice resources as affecting the incidence of floods and impact on water supply.
In summary: this was a very effective regional conference.

Gordon Young

ICSW Commission Meeting Minutes

26 July 2013, Gothenburg, Sweden, IAHS Assembly

Participants: All ICSW commission members:

- President, *Eric Servat*, France, Eric.Servat@univ-montp2.fr
- PE, *Hafzullah Aksoy*, Turkey, haksoy@itu.edu.tr

- VP, *Walter Collischonn*, Brazil, collischonn@iph.ufrgs.br
- VP, *David Hannah*, UK, d.m.hannah@bham.ac.uk
- VP, *Hege Hisdal*, Norway, hhi@nve.no
- S, *Yan Huang*, China, y.huang.ctw@gmail.com

Chair: *Hafzullah Aksoy*

1 General

All ICSW commission members participated in the commission meeting chaired by Prof. Hafzullah Aksoy (PE).
During the meeting, the chairman reported the past activities and near-future activities (the report presented during the first IAHS Bureau meeting). In addition, attention was given to the following particular issues:

- The ICSW website needs to be updated: the chairman pointed out flaws in the current website, e.g., the vision involves too many organizations and too many subjects, it is unclear which ones are relevant and which ones are not. Meanwhile, updating with more recent activities is also needed to keep the momentum going.
- Discussion is required from the floor on how ICSW should contribute to Panta Rhei, which is a new-raised program following PUB (Prediction in Ungauged Basins),mainly addressing change in hydrology and society. Comments and ideas are invited from the floor on how ICSW can contribute to bring science and society together.

2 Symposiums

Symposiums that shall be convened or co-convened by ICSW at the next IAHS meeting in Prague in 2015. The following were discussed.

2.1 Symposium

The symposium of addressing changes in flood risk and perception in catchments and cities, is proposed to be co-convened by ICWRS, ICSH and ICSW. H. Aksoy from ICSW is proposed as co-convener of the symposium. It is suggested that there be a simpler title for this symposium at a later stage.

2.2. Symposiums that ICSW shall convene/co-convene

The following symposiums were discussed in which ICSW shall convene or co-convene once it is accepted by the general conference.
–Topic 1: observations of variability and extremes of hydrological systems: How to manage or collect data/information, using Remote Sensing (space) technology. The Remote Sensing Commission will lead the symposium, while ICSW agree to co-convene this symposium.
–Topic 2: Development of mitigation / adaptation engineering / non-engineering measures for water security under global changes. It has been pointed out that this topic is overlapping with Social-Hydrology Modelling and Water Resources Control which are to be convened by / with ICWR.
Change and Uncertainty in Surface water (Demetri, Taha, with ICSH) to be convened by ICSH.

2.3 WORKSHOP from ICSW

Two workshops are proposed by ICSW:
– Runoff Prediction in Ungauged Basins / Runoff Prediction Under Change (ICSW lead convener, H. Aksoy and then co-convene several workshops).
– Minimize impact from human activity to protect Lakes, Wetlands, Estuaries, Deltas for future generations as these mentioned water bodies are under threat. It is suggested that the title is changed to Maintain Surface Water of Wetland, Lakes, Estuaries etc., for Future Generations. This workshop is proposed to be a joint symposia with another association other than IAHS. H. Aksoy and Matt Hapacy from Australia are nominated to co-convene the workshop.

2.4 Symposium proposed by ICSW

ICSW also proposed a symposium to address particular issues or interests or development needs related to surface water, including the following:
â€¢ To address predictions under change considering hydrological interfaces (lead convener David

Hannah ICSW, with ICCLAS, ICGW). It is encouraged to engage other people from other disciplines and take into consideration the interface at continental scale. It is also suggested to involve broader concepts such as quality issue, sediment, etc. The title is suggested to be more mutual and involving hydrology on the interfaces; it is suggested that it be a potential joint symposia with other associations. Surface Water Quality Issue (co-convene with ICWQ, ICCE). As this has been addressed by water quality commission, co-convene might be possible.

Sediment Transport in Surface Water Systems: suggested to co-convene with ICWRS, ICCE, etc. It overlaps the symposium proposed by the sediment commission as The Role of Sediment as an Indicator of Hydrology and Social Change.

Hege Hisdal proposed a symposium on Hydrological Extremes Related with Climate Change Impact. Salvatore Grimaldi pointed out that he has received a couple of proposals on extremes particularly on water security issues.

Flood was discussed, but it has been found included in a symposium proposed by the Water Resources Commission.

Salvatore Grimaldi has recorded symposiums and workshops proposed during the ICSW commission meeting, and will look into other symposiums to avoid overlap.

3 **Panta Rhei working groups**

A new plan for the New Scientific Decade of IAHS of 2013-2022, the so-called Panta Rhei, addressing changing hydrology for a changing society, is proposed and accepted as the new plan for the next decade. Panta Rhei includes three targets, namely

- Understanding,
- Estimation and Prediction
- Science in Practice.

Each target is led by a Target Leader and a Target Co-Leader. Target Leaders are nominated for a biennium and their role is to assist the Panta Rhei Chair in overseeing the scientific activity that is carried out within Panta Rhei and to keep the links with the community. The tasks of the Target Leaders include the identification and preliminary approval of Research Themes and Working Groups (the final approval is formalised by the IAHS Bureau), the organisation of Panta Rhei initiatives (scientific session at conferences, educational initiatives, summer schools etc.) and the synthesis of the activity that is carried out under each target.

The Officers of Panta Rhei are nominated by the IAHS Bureau for a biennium. They are nominated in 2013, 2015, 2017, 2019 and 2021.

For the Biennium 2013-2015, during the General Assembly held in Gothenburg, Hafzullah Aksoy from ICSW is nominated as the leader of Target 2 - Estimation and prediction; Yan Huang from ICSW is nominated as co-leader of Target 3 - Science in Practice.

Hafzullah Aksoy, President-elect ICSW

Commission participants during the break, and President Eric Servat with PE Hafzullah Aksoy

ICCE: International Commission on Continental Erosion

Future meetings of ICCE
1. *2014 ICCE Symposium on Sediment Dynamics: From the Summit to the Sea*.
Session themes include:

- Monitoring and modeling erosion on hills, floodplains, and coastal shorelines;
- Monitoring and modeling sediment transport in streams, rivers, and estuaries;
- Erosion and sediment-associated chemical transport and pollution across landscape and waterscape;
- Land use and climate change effects on erosion and sediment transport and;
- Interactions between sediment hydrodynamics, channel morphodynamics, river delta, and coastal processes.

For more information visit the conference website http://www.rnr.lsu.edu/icce2014/
2. *Two ICCE sponsored workshops are proposed for the 26th IUGG Scientific Assembly, Prague 22 June-2 July 2015*
They include:

- The role of sediment as an indicator of hydrological and societal change (M. Stone, A. Collins, V. Golosov)Â
- Fingerprinting: Methodological problems, techniques and uncertainty (P. Porto and A. Collins).

Mike Stone, President ICCE

ICWRS, Bologna meeting, June 2014

EVOLVING WATER RESOURCES, *Bologna, June 2014*

Conference Attendance Award

On 6 January 2014, 10 young scientists from Algeria, China, India, Republic of Tajikistan, Russia, Syria and Tunisia were informed that they had each been awarded a *Conference Attendance Award*. These Awards cover the registration fee for the conference and three nights of accommodation in Bologna (single room with breakfast).

Sponsorship of the Awards by: International Union of Geodesy and Geophysics (IUGG); *European Geosciences Union* (EGU); and the *Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna* (DICAM), are gratefully acknowledged.

Final DEADLINE FOR ABSTRACT SUBMISSION: **15 March 2014**.
Further details on conference themes, invited speakers and focused debates are available at: www.iahs.info/bologna2014.

Attilio Castellarin, Bologna LOC

RSHS'14 and ICGRHWE'14 *Call for abstracts*

http://hydroinfo.sysu.edu.cn/meeting

The 3rd Remote Sensing and Hydrology Symposium (RSHS'14) and the 3rd International Conference of GIS/RS in Hydrology, Water Resources and Environment (ICGRHWE'14)

Guangzhou, China, 24-27 August 2014
The conference is organized by the *International Commission on Remote Sensing* (ICRS) of IAHS and Sun Yat-Sen University, China; the co-organizers are the University of Swansea, UK and the University of Nebraska, USA.

There are four themes:

- ***Theme A***, GIS and Remote Sensing includes Data mining and assimilation, GIS and Remote sensing technologies and products, Hydroinformatics, Software and tools.
- ***Theme B***, Hydrology includes Hydrological modelling, Flood management, Global hydrologic cycle, Urban hydrology, Eco-hydrology.
- ***Theme C***, Water Resources includes Water resources modeling, Integrated water resources management and planning, Reservoir management, Water resources management system, Dam development, Water transfer.
- ***Theme D***, Environment includes Water quality modeling, Pollutant fate and transport in reservoirs, rivers and lakes, Groundwater quality modelling, River and dam restoration, Ecosystem diversity and integrity.

Papers on the conference topics are invited. Participants intending to present papers or posters are required to **submit abstracts online with no more than 300 words for review before 31 March 2014**. The abstract should clearly state the purposes, methods, preliminary results and conclusions, and indicate the conference topics and presentation method (oral or poster); figures, equations and tables are not allowed.

Authors will be **notified of abstract acceptance before 30 April 2014** and are required to **submit full length papers before 30 June 2014**.
The accepted abstracts will be pre-published, and the full papers will be included in a CD-ROM and distributed to the conference participants during the conference. Selected papers will be further reviewed and be published in the **IAHS Red Book**Â series and other internationally-refereed journals as special issues.

This event will have two phases:

- **The first phase:** the conference that will be held from 24 August to 27 August 2014 at Guangzhou City. Keynote speeches, invited lectures, parallel sessions, workshops and poster papers will be presented in this phase.Â
- **The second phase:**Â post conference technical visit to Three Gorges from 28 August to 31 August 2014, (optional, not included in the conference). Participants will fly from Guangzhou to Chongqing, the end of Three Gorges Reservoir, then board a cruise ship. They will sail though the Three Gorges Reservoir in the Yangtze River from Chongqing to Yichang where this visit ends. During this visit, round table discussions and invited presentations will be organized on the ship. Discussions with professionals from Three Gorges Project, visiting the Three Gorges Dam site and investigations of the submerged area will be arranged.

Conference Chairman: **Prof. Yangbo Chen**
Lab of Water Disaster Management and Hydroinformatics, School of Geography and Planning
Sun Yat-Sen University, Guangzhou, 510275 China
Fax: +86 20 8411 4269, E-mail: hydrolab@mail.sysu.edu.cn http://hydroinfo.sysu.edu.cn/meeting

Short course: Copula for Hydrology and Climate Applications

***International Commission on Statistical Hydrology* (ICSH-IAHS)**

- **Location:** The Henry Samueli School of Engineering, University of California, Irvine, USA

- **Date:** 28 July–1 August 2014
- **Instructors:** *Gianfausto Salvadori, Ivan Kojadinovic, Salvatore Grimaldi, Amir AghaKouchakÂ*
- **Website**: http://climate.eng.uci.edu/copula/ or www.stahy.org
- **Early Bird deadline:** 15 April 2014

Erasmus Mundus Masters Course in Flood Risk Management

UNESCO-IHE
Institute for Water Education

The Erasmus Mundus Masters Course on Flood risk management is offered by the consortium consisting of UNESCO-IHE (the Netherlands), TU Dresden (Germany), UPC Barcelona (Spain) and University of Ljubljana (Slovenia).

The programme starts **September 2014**. During the 2-year programme students follow semester one at TUD, semester two at UNESCO-IHE, semester three at UPC and University of Ljubljana, and semester four (thesis work) at one of the institutes or with an industrial partner. Successful candidates receive MSc degrees from TU Dresden, UNESCO-IHE and UPC, Barcelona. Language of instruction: English.

Interested candidates may apply online at http://www.floodriskmaster.org/.
The application deadline is **7 January 2014 for non-EU** and **26 January 2014 for EU** applicants. A limited number of Erasmus Mundus Scholarships are available on a competitive basis for EU as well as non-EU applicants. Applications especially from EU candidates are encouraged.

email: info@unesco-ihe.org

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International Association of Hydrological Sciences
Association Internationale des Sciences Hydrologiques