



REPORT OF ACTIVITIES: APRIL, 2014 – MAY, 2015

SUMMARY OF THE REPORT

1. ICSH VISIBILITY IN THE SCIENTIFIC COMMUNITY;
2. ICSH WORKSHOPS AND SESSIONS ORGANIZED IN THE PERIOD APRIL, 2014- MAY, 2015;
3. FORTHCOMING EVENTS;
4. UPDATE ON ICSH INITIATIVES IN PROGRESS.

1. THE ICSH VISIBILITY IN THE SCIENTIFIC COMMUNITY

Until now, ICSH collected 171 registered active participants from 54 countries plus many other “friends”.

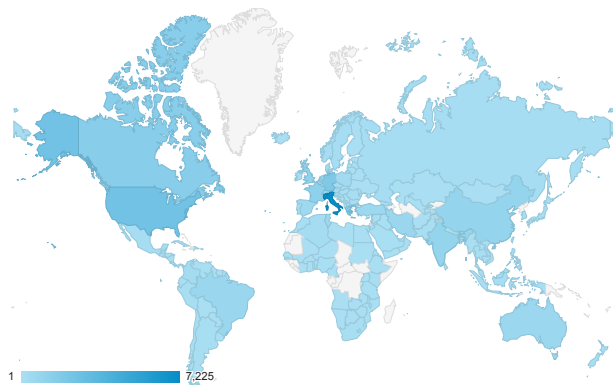


Figure: Geographical distribution of STAHY website visitors.

Since January 2010 the Google Analytics service was linked to the STAHY website. It was useful to monitor the site visitors. Until now we had 31,578 visits and 17,098 unique visitors from 154 countries with an average of 20 visits per day.

Furthermore, in more than 30 scientific papers the STAHY website is mentioned in the text and suggested as focal point for statistical hydrology.

2. THE ICSH WORKSHOPS AND SESSIONS ORGANIZED IN THE PERIOD APRIL, 2014 – MAY, 2015

April 27- May 2, 2014

Vienna, EGU - General Assembly 2014

HS7.5/NP8.3

Hydroclimatic stochastics

Convener: Xiaolan L. Wang | Co-Conveners: Salvatore Grimaldi , Alin Andrei Carsteanu , Demetris Koutsoyiannis , Simon-Michael Papalexou

HS3.3

Open Source Computing in Hydrology PICO Session

Convener: Attilio Castellarin | Co-Conveners: Jan Seibert , Ann van Griensven , Paolo Paron , Martinus van den Berg , Luigia Brandimarte

28 July -1 August 2014

Short Course "Copula for hydrology and climate applications"

The Henry Samueli School of Engineering, University of California Irvine, USA

website: <http://climate.eng.uci.edu/copula/>

Instructors:

Salvatore Grimaldi, University of Tuscia, Italy.

Ivan Kojadinovic, Université de Pau et des Pays de l'Adour, France.

Gianfausto Salvadori, Università del Salento, Italy.

Dr. Amir AghaKouchak, University of California, Irvine, United States



Irvine Short Course Group

10-11 Nov 2014

STAHY'14 WORKSHOP

Abu Dhabi



Abu Dhabi STAHY workshop Group

December 15-18, 2014

CRM-CANSSI Workshop on New Horizons in Copula Modeling



Centre de recherches mathématiques
Montreal, Canada
Invited speakers of ICSH-IAHS Commission

April 12-17, 2015
Vienna, EGU - General Assembly 2015

HS7.7/NP3.8 Hydroclimatic and hydrometeorologic stochastics: Extremes, scales, probabilities (co-organized)
| PICO Session
Convener: Xiaolan L. Wang | Co-Conveners: Salvatore Grimaldi , Alin Andrei Carsteanu , Demetris Koutsoyiannis , Simon-Michael Papalexou

HS3.3 Open Source Computing in Hydrology. PICO Session.
Convener: Attilio Castellarin; Co-Conveners: Jan Seibert , Ann van Griensven, Paolo Paron, Martinus van den Berg , Margherita Di Leo , Luigia Brandimarte.

3. FORTHCOMING EVENTS

June 22 - July 2, 2015.
26th IUGG General Assembly 2015 - Prague Congress Centre

ICSH Commission will lead and participate to the two following Workshops and Union Symposia:

U6 Data Assimilation and Inverse Problems in Geophysical Sciences
Convener: Alik Ismail-Zadeh, Karlsruhe, Germany (IUGG)
Co-conveners: Richard Essery, Edinburgh, U.K. (IACS); Alexandre Fournier, Paris, France (IAGA); Konstantin Belyaev, Moscow, Russia (IAPSO); Pavel Novak, Plzen, Czech Republic (IAG); Jeroen Tromp, Princeton, USA (IASPEI); Salvatore Grimaldi, Tuscia, Italy (IAHS); Craig Bishop, Monterey, USA (IAMAS)

HW03 Multivariate Analysis in Hydrological Modelling
Convener: Andras Bardossy (Stuttgart, Germany)
Co-conveners: Fateh Chebana (Quebec, Canada), Jose Luis Salinas (Vienna, Austria)

HW04 Hydrological Change in Statistical Perspective
Convener: Demetris Koutsoyiannis (Athens, Greece)
Co-conveners: Ebru Eris (Izmir, Turkey), Uwe Haberlandt (Hannover, Germany), Barry Croke (Canberra, Australia), Hafzullah Aksoy (Istanbul, Turkey)

July 6-10, 2015
Short Course "Copulas for hydrology and environmental sciences" (fifth edition)
Université de Pau et des Pays de l'Adour, Pau, France.
Instructors:
Salvatore Grimaldi, University of Tuscia, Italy.
Ivan Kojadinovic, Université de Pau et des Pays de l'Adour, France.
Philippe Naveau, Laboratoire des Sciences du Climat et l'Environnement, CNRS, France.
Gianfausto Salvadori, Università del Salento, Italy.

November 18-20, 2015 - Addis Ababa | Ethiopia |
STAHY'15 Workshop
joint to
10th Alexander von Humboldt Conference 2015 & EGU-GIFT Workshop & EGU Leonardo Conference 2015

"Water-Food-Energy River and Society in the Tropics"
see all details on: <http://avh10.eu/home.html>
Abstract submission deadline: June 30, 2015



4. UPDATE ON ICSH INITIATIVES IN PROGRESS

Monthly Collection Reference

The “Monthly Collection reference” initiative is growing up with enthusiasm. Every month, all STAHY members are invited to send to the Topic Coordinator all the references found in literature about a specific subject.

Until now six topics were launched:

- 1) Copula function – Coordinator: Jing Li, Australia;
- 2) Non stationarity – Coordinator: Ebru Eris, Turkey;
- 3) Regional Frequency Analysis – Coordinator: Emna Gargouri-Ellouze, Tunisi;
- 4) Entropy function in Hydrology – Coordinators: Simon Michael Papalexiou, Greece and Federico Lombardo, Italy;
- 5) Long memory and parametric models in environmental time series – Coordinator: Marcella Corduas, Italy.
- 6) Artificial Intelligence Models for Hydrological Applications. Coordinator: Hossein Tabari (KU Leuven).

R-library

This initiative has the aim to collect R-code (or routines in other languages) related to the ICSH topics. The Coordinator of this initiative is Martinus van den Berg (ICSH member from Ghent University)

“STAHY Best Paper” award

During the IAHS Bureau held in Delft on October 23, 2012 it was approved to establish a new IAHS Award promoted and managed by the International Commission on Statistical Hydrology (ICSH-IAHS).

The name of the award is: “STAHY Best Paper Award” of ICSH-IAHS.

The award consists in the IAHS Award Certificate and in the economical support (registration fee and accommodation) for one of the authors that will be invited lecture during the ICSH annual workshop.

In the following procedure and requirements are described:

The only requirement is that the paper is included in one of the ICSH reference collection lists of STAHY website.

The procedure:

In the first or second call of papers of ICSH topical conference it will be announced the award selection and fixed the deadlines for the paper evaluation. After the deadline all papers present in the ICSH topic reference lists and included the evaluation period will be collected. The evaluation period will be 3 years starting from 5 years before the ICSH topical conference year (for instance if the conference will be on 2015 the evaluation period will 2011-2013).

All collected papers will be ordered by citations present in Scopus database (excluding self citations of all authors) at the deadline. The first 20 papers will be evaluated by the ICSH officers.

STAHY Best Paper Award 2014 – Results

The 2014 award was assigned during the STAHY'14 Conference – Abu Dhabi, 10-11 November 2014.

The STAHY Best Paper is the result of evaluation of the first 20 papers, selected among the 289 papers (published in 2010-2011-2012) present in ICSH website and ordered by citations (SCOPUS database, excluding self citations).

The list of 20 eligible papers were:

- 1)* Kao S.-C., Govindaraju R.S. A copula-based joint deficit index for droughts. *Journal of Hydrology* 380(1-2) 2010. 70 citations
- 2) Wong G., Lambert M.F., Leonard M., Metcalfe A.V. Drought analysis using trivariate copulas conditional on climatic states. *Journal of Hydrologic Engineering* 15 (2) 2010. 39 citations
- 3) Xu K., Milliman J.D., Xu H. Temporal trend of precipitation and runoff in major Chinese Rivers since 1951. *Global and Planetary Change* 73 (3-4) 2010. 30 citations.
- 4) Sousa P.M., Trigo R.M., Aizpuru P., Nieto R., Gimeno L., Garcia-Herrera R. Trends and extremes of drought indices throughout the 20th century in the Mediterranean. *Natural Hazards and Earth System Science* 11 (1) 2011. 28 citations.

- 5) Mailhot A., Duchesne S. Design criteria of urban drainage infrastructures under climate change. *Journal of Water Resources Planning and Management* 136 (2) 2010. 27 citations.
- 6) Salvadori G., De Michele C. Multivariate multiparameter extreme value models and return periods: A copula approach. *Water Resources Research*. 46 (10) 2010. 26 citations.
- 7) Tabari H., Hosseinzadeh Talae P. Temporal variability of precipitation over Iran: 1966-2005. *Journal of Hydrology*. 396 (3-4) 2011. 23 citations.
- 8) Lopez-Moreno J.I., Vicente-Serrano S.M., Angulo-Martinez M., Begueria S., Kenawy A. Trends in daily precipitation on the northeastern Iberian Peninsula, 1955-2006. *International Journal of Climatology*. 30 (7) 2010. 23 citations.
- 9) Villarini G., Smith J.A. Flood peak distributions for the eastern United States. *Water Resources Research*. 46 (6) 2010. 23 citations.
- 10) Song S., Singh V.P. Meta-elliptical copulas for drought frequency analysis of periodic hydrologic data. *Stochastic Environmental Research and Risk Assessment*. 24 (3) 2010. 23 citations.
- 11) Tao H., Gemmer M., Bai Y., Su B., Mao W. Trends of streamflow in the Tarim River Basin during the past 50 years: Human impact or climate change? *Journal of Hydrology*. 400 (1-2) 2011. 22 citations.
- 12) Oudin L., Kay A., Andraassian V., Perrin C. Are seemingly physically similar catchments truly hydrologically similar? *Water Resources Research*. 46 (11) 2010. 22 citations.
- 13) Song S., Singh V.P. Frequency analysis of droughts using the Plackett copula and parameter estimation by genetic algorithm. *Stochastic Environmental Research and Risk Assessment*. 24 (5) 2010. 22 citations.
- 14) Sang H., Gelfand A.E. Continuous spatial process models for spatial extreme values. *Journal of Agricultural, Biological, and Environmental Statistics*. 15 (1) 2010. 22 citations.
- 15) Caloiero T., Coscarelli R., Ferrari E., Mancini M. Trend detection of annual and seasonal rainfall in Calabria (Southern Italy). *International Journal of Climatology*. 31 (1) 2011. 21 citations.
- 16) Burn D.H., Sharif M., Zhang K. Detection of trends in hydrological extremes for Canadian watersheds. *Hydrological Processes*. 24 (13) 2010. 21 citations.
- 17) Vandenberghe S., Verhoest N.E.C., De Baets B. Fitting bivariate copulas to the dependence structure between storm characteristics: A detailed analysis, based on 105 year 10 min rainfall. *Water Resources Research*. 46 (1) 2010. 20 citations.
- 18) Lima C.H.R., Lall U. Spatial scaling in a changing climate: A hierarchical bayesian model for non-stationary multi-site annual maximum and monthly streamflow. *Journal of Hydrology*. 383 (3-4) 2010. 20 citations.
- 19) Lorenzo-Lacruz J., Vicente-Serrano S.M., Lopez-Moreno J.I., Moran-Tejeda E., Zabalza J. Recent trends in Iberian streamflows (1945-2005). *Journal of Hydrology* 414-415 2012. 19 citations.
- 20) Koutsoyiannis D. Hurst-Kolmogorov Dynamics and Uncertainty. *Journal of the American Water Resources Association*. 47 (3) 2011. 19 citations.

*this paper will be excluded by the selection since it was the winner of 2013 edition.

The STAHY Best Paper Award 2014 is assigned to:

*Ludovic Oudin, University Pierre et Marie Curie, Paris,
 Alison Kay, Centre for Ecology and Hydrology, Wallingford, UK
 Vazken Andréassian, Irstea, Antony, France
 Charles Perrin, Irstea, Antony, France,*



Ludovic Oudin



Alison Kay



Vazken Andréassian



Charles Perrin

for the paper:

Oudin L., Kay A., Andraassian V., Perrin C. Are seemingly physically similar catchments truly hydrologically similar? *Water Resources Research*. 46 (11) 2010.

The STAHY Best Paper Award 2015 working progress results:

The STAHY Best Paper 2015 is the result of evaluation of 20 papers, selected among the 332 papers (published in 2011-2012-2013) present in ICSH website and ordered by citations (SCOPUS database, excluding self citations).

The list of 20 eligible papers are:

- 1) Sousa, P.M., Trigo, R.M., Aizpurua, P., Nieto, R., Gimeno, L., Garcia-Herrera, R. Trends and extremes of drought indices throughout the 20th century in the Mediterranean (2011) *Natural Hazards and Earth System Science*, 11 (1), pp. 33-51. Cited 45 times.
- 2) Tao, H., Gemmer, M., Bai, Y., Su, B., Mao, W. Trends of streamflow in the Tarim River Basin during the past 50years: Human impact or climate change? (2011) *Journal of Hydrology*, 400 (1-2), pp. 1-9. Cited 40 times
- 3) Tabari, H., Talaei, P.H. Temporal variability of precipitation over Iran: 1966-2005 (2011) *Journal of Hydrology*, 396 (3-4), pp. 313-320. Cited 35 times.
- 4) Koutsoyiannis, D. Hurst-Kolmogorov Dynamics and Uncertainty (2011) *Journal of the American Water Resources Association*, 47 (3), pp. 481-495. Cited 30 times.
- 5) Lorenzo-Lacruz, J., Vicente-Serrano, S.M., López-Moreno, J.I., Morán-Tejeda, E., Zabalza, J. Recent trends in Iberian streamflows (1945-2005) (2012) *Journal of Hydrology*, 414-415, pp. 463-475. Cited 28 times.
- 6) Vogel, R.M., Yandl, C., Walter, M. Nonstationarity: Flood magnification and recurrence reduction factors in the united states (2011) *Journal of the American Water Resources Association*, 47 (3), pp. 464-474. Cited 28 times.
- 7) Beguería, S., Angulo-Martínez, M., Vicente-Serrano, S.M., López-Moreno, J.I., El-Kenawy, A. Assessing trends in extreme precipitation events intensity and magnitude using non-stationary peaks-over-threshold analysis: A case study in northeast Spain from 1930 to 2006 (2011) *International Journal of Climatology*, 31 (14), pp. 2102-2114. Cited 27 times.
- 8) Villarini, G., Smith, J.A., Baeck, M.L., Krajewski, W.F. Examining Flood Frequency Distributions in the Midwest U.S. (2011) *Journal of the American Water Resources Association*, 47 (3), pp. 447-463. Cited 26 times.
- 9) Caloiero, T., Coscarelli, R., Ferrari, E., Mancini, M. Trend detection of annual and seasonal rainfall in Calabria (Southern Italy) (2011) *International Journal of Climatology*, 31 (1), pp. 44-56. Cited 26 times.
- 10) Salvadori, G., De Michele, C., Durante, F. On the return period and design in a multivariate framework (2011) *Hydrology and Earth System Sciences*, 15 (11), pp. 3293-3305. Cited 25 times.
- 11) Fleig, A.K., Tallaksen, L.M., Hisdal, H., Hannah, D.M. Regional hydrological drought in north-western Europe: Linking a new Regional Drought Area Index with weather types (2011) *Hydrological Processes*, 25 (7), pp. 1163-1179. Cited 25 times.
- 12) Westra, S., Alexander, L.V., Zwiers, F.W. Global increasing trends in annual maximum daily precipitation (2013) *Journal of Climate*, 26 (11), pp. 3904-3918. Cited 25 times.
- 13) Chebana, F., Ouarda, T.B.M.J. Multivariate quantiles in hydrological frequency analysis (2011) *Environmetrics*, 22 (1), pp. 63-78. Cited 22 times.
- 14) Hirsch, R.M. A Perspective on nonstationarity and water management (2011) *Journal of the American Water Resources Association*, 47 (3), pp. 436-446. Cited 22 times.
- 15) Oguntunde, P.G., Abiodun, B.J., Lischeid, G. Rainfall trends in Nigeria, 1901-2000 (2011) *Journal of Hydrology*, 411 (3-4), pp. 207-218. Cited 21 times.
- 16) Ouarda, T.B.M.J., El-Adlouni, S. Bayesian nonstationary frequency analysis of hydrological variables (2011) *Journal of the American Water Resources Association*, 47 (3), pp. 496-505. Cited 21 times.
- 17) Lins, H.F., Cohn, T.A. Stationarity: Wanted dead or alive? (2011) *Journal of the American Water Resources Association*, 47 (3), pp. 475-480. Cited 21 times.
- 18) Pal, I., Al-Tabbaa, A. Assessing seasonal precipitation trends in India using parametric and non-parametric statistical techniques (2011) *Theoretical and Applied Climatology*, 103 (1), pp. 1-11. Cited 21 times.
- 19) Chowdhary, H., Escobar, L.A., Singh, V.P. Identification of suitable copulas for bivariate frequency analysis of flood peak and flood volume data (2011) *Hydrology Research*, 42 (2-3), pp. 193-216. Cited 20 times.
- 20) Bessa, R.J., Miranda, V., Botterud, A., Zhou, Z., Wang, J. Time-adaptive quantile-copula for wind power probabilistic forecasting (2012) *Renewable Energy*, 40 (1), pp. 29-39. Cited 19 times.
- 21) Gräler, B., Van Den Berg, M.J., Vandenberghe, S., Petroselli, A., Grimaldi, S., De Baets, B., Verhoest, N.E.C. Multivariate return periods in hydrology: A critical and practical review focusing on synthetic design hydrograph estimation (2013) *Hydrology and Earth System Sciences*, 17 (4), pp. 1281-1296. Cited 19 times.

*this paper is excluded from the evaluation procedure since one of the authors is part of the Award Committee.

[ICSH YouTube Channel](#)

During the Annual ICSH workshops, oral presentations and poster interviews are video recorded. In order to collect videos and to give more visibility to the workshop participants and to ICSH in general, a YouTube channel was recently created: <https://www.youtube.com/user/stahyahs> .

Until now all the Tunis and Kos presentations were upload and more than 2000 visualizations were registered.

I am particularly grateful to the ICSH Officers (Uwe Haberlandt, Emna Gargouri, Simon Micheal Papalexiou, Ebru Eris, Sander Vanderbeger) and to the topic/initiative coordinators for their intense and fruitful collaboration. Only thanks to their effort and enthusiasm that is was possible to develop the ICSH initiatives.

Salvatore Grimaldi
ICSH-IAHS President

