

International Commission on Surface Water (ICSW), IAHS Activities Report June 2018

1. Commission Officers

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- P, Gil Mahe, France, gilmahe@hotmail.com
- VP, David Hannah, UK, d.m.hannah@bham.ac.uk
- VP, Thomas Skaugen, Norway, ths@nve.no
- VP, Ennio Ferrari, Italy, ennio.ferrari@unical.it
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2. Activities 2017 - 2018

2.1 Organizing Conference

2017: Gil Mahe, Co-organizing an International conference in Bangui (Republic of Central Africa), with Prof. Cyriaque Rufin Nguimalet (University of Bangui, and Alain Laraque (IRD-GET), December 2017, on the topic “Water resources and health issues in Central and Eastern Africa”, which participation was much reduced due to a lack of funding support at the very last moment.

2018: Gil Mahe, co-organizing the 3rd International on the Hydrology of African Large River Basins, FRIEND/UNESCO-IAHS, Algiers, 6-8th May 2018, with 5 training sessions (SWAT model, ATHYS modelling platform, GIS, Climatic scenarios, Bibliometry), and the participation of the Young Hydrological Society/Niels Claes (evening workshops with young scientists and PhD students), and a keynote presentation scheduled of Flavia Tauro for MOXXI.

2.2 Convening/Co-organizing workshops and symposium

Port-Elizabeth

2017: Co-convening of W1 Prediction in ungauged basins at IAHS Scientific Assembly 2017, Port Elizabeth, South Africa.

2017: Thomas Skaugen Co-convening of W19 Probabilistic forecasts and land-atmosphere interactions to advance hydrological predictions at IAHS Scientific Assembly 2017, Port Elizabeth, South Africa.

2017: Convenor Hafzullah Aksoy, Co-convening of W3 Modelling hydrological processes for prediction under change, at IAHS Scientific Assembly 2017, Port Elizabeth, South Africa.

2017: Convenor Gil Mahe, co-convenors Kate Heal, Michael Stone, David Hannah, Akhilendra Gupta, S2, Water quality and sediment transport issues in surface water. 15 oral presentations scheduled, but 11 presents, 3 posters displayed out of 8 scheduled. 12 papers issued from this session are currently being processed to be published as PIAHS early2018.

2017: Ennio Ferrari, Convener of the session: W7 Extreme events: links between science and practice. IAHS Scientific Assembly 2017, 10–14 July 2017, Port Elizabeth, South Africa. Co-Conveners: David Hannah, Maria-Carmen Llasat , Enrica Caporali , Radu Drobot , Yves Trambly , Elena Volpi , Abou Amani , Anil Mishra. The session included 13 presentations and 5 posters, subdivided into 4 items: analysis of impacts of climate and land-use change on extreme events; integrated approaches for coping with water-related risks; advances in statistical and stochastic analysis of extreme events; knowledge building strategies for improving local resilience.

2017: Thomas Skaugen, Organising International Workshop on Snow modelling: “Cool models for a warm climate- operational snow models for the present and future climate, at Finse, Norway, October 10.12, 2017.

2017: Gil Mahe, Participation to the organization of the International conference on “Water society and climate”, Hammamet, Tunisia, 2-7 October 2017, including 4 training sessions (SWAT model, Hydrogeology, hydrological modelling, bibliometry)

2.3 Support scientific meetings as member

European Geosciences Union, General assembly 2018, 8-13 April, Vienna, Austria.

2017: Hafzullah Aksoy, Scientific Committee Member for the IWA 2nd Regional Symposium on Water, Wastewater and Environment, Cesme-Izmir, Turkey, 22-24 March 2017.

2017: Hafzullah Aksoy, Scientific Committee Member for the 9th National Hydrology Congress organized by Dicle University, Diyarbakir, Turkey, 4-6 October 2017.

2017: Hafzullah Aksoy, Scientific Committee Member for the 4th International Water Congress organized by İzmir Greater Municipality, İzmir, Turkey, 2-4 November 2017.

2.4 Participation/Contribution to Conferences

2017: Hafzullah Aksoy, Participation to the IWA 2nd Regional Symposium on Water, Wastewater and Environment, Cesme-Izmir, Turkey, 22-24 March 2017.

2017: Hafzullah Aksoy, Contribution to World Environmental and Water Respoources Congress 2017, Sacramento, USA, 21-25 May, 2017.

2017: Hafzullah Aksoy, Participation to the 9th National Hydrology Congress organized by Dicle University, Diyarbakir, Turkey, 4-6 October 2017.

2017: Hafzullah Aksoy, Contribution to the 8th Atmospheric Science Symposium organized by Istanbul Technical University, Istanbul, Turkey, 1-4 November 2017.

2017. Predictions in ungauged basins and parsimony in calibration parameters. Oral presentation at IAHS, scientific assembly, 10-14, July, Port Elisabeth, South Africa.

Skaugen, T, S. N. Boje. I .O. Peereboom, K. Møen and S. Myrabø, 2017. Runoff dynamics in a forested catchment- investigating the relations between river network density, subsurface water capacity and subsurface celerities. Poster presentation at 4th Conference on “Modelling Hydrology, Climate and Land Surface Processes”, Lillehammer, 12th – 14th September, 2017.

- Skaugen, T., T. Saloranta, H. Ljutling and K. Muller, 2017. Cool models for the future. Oral presentation at the 1st Finse International Workshop on Snowmodelling, October, 11-12, 2017.
- Melvold, K. and T. Skaugen, 2017. Spatial variability in statistical properties of lidar-derived snow depth on Hardangervidda, Norway. Oral presentation at the 1st Finse International Workshop on Snowmodelling, October, 11-12, 2017
- Kotti, F., Mahe, G., Dezileau, L., Habaieb, H., Bentkaya, M., Dieulin, C. (2017). The impact of dams on the reduction of the sediment transports to the sea from core sample study in the Wadi Medjerda low valley. IAHS meeting, Port Elizabeth, South Africa.
- Ben Moussa, T., Amrouni, O., Dezileau, L., Mahe, G., Saadi, A. (2017). Impact of the Medjerda sedimentary fluxes on the morphodynamic equilibrium of the northern coast of the Gulf of Tunis (Medjerda-Raoued coast). IAHS meeting, Port Elizabeth, South Africa.
- Amoussou, E., Totin Vodounon, H.S., Vissin, E.W., Mahe, G., Oyede, L.M. (2017). Sedimentary evolution and change ecosystems of Aheme lake in south-west of Benin. IAHS meeting, Port Elizabeth, South Africa.
- Kodja, D.J., Amoussou, E., Visson, E.W., Houndenou, C., Boko, M., Mahe, G., Paturel, J.E. (2017). Mise en évidence des champs de pression et de l'humidité relative de l'Atlantique sur le bassin versant de l'Ouémé à l'exutoire de Bonou au Bénin (pays du golfe de Guinée). Troisième Journée des Doctorants, IM2E, Montpellier, 22-23 mars.
- Khedimallah, A., Meddi, M., Mahe, G. (2017). Etude des relations pluie/débit via les coefficients d'écoulement dans le bassin versant de Cheliff (Algérie). Troisième Journée des Doctorants, IM2E, Montpellier, 22-23 mars.
- Sidibe, M., Dieppois, B., Mahe, G., Paturel, J.E., Rouche, N., Amoussou, E., Anifowose, B., Lawler, D. (2017). Trend and variability in western and central Africa streamflow and major drivers of variability between 1950 and 2005. Poster, AGU New Orleans, Dec 2017.
- Taibi, S., Meddi, M., Mahe, G. (2017). Etat de la variabilité pluviométrique du Nord de l'Algérie entre 1936 et 2016 : un retour vers la normale. 7^{ème} conférence Eau-climat-santé, Hammamet Tunisie, 2-7 octobre 2017.
- Braun, J.J., Paiz, M.C., McGrath, M., Rabenkogo, N., Mbonda, A.P., White, L., Gaillardet, J., Bouchez, J., Moquet, J.S., Regard, V., Carretier, J.S., Bricquet, J.P., Mahe, G., Richter Jr, D. (2017). CZO perspective in Central Africa: The Lopé watershed, Lopé National Park, Ogooué River basin, Gabon. International Long Term Ecological Research Network & LTER. Nantes, 2-4 octobre 2017, France.
- Kodja, J., Mahe, G., Vissin, E., Amoussou, E., Paturel, J.E., Houndenou, C., Boko, M. (2017). Etude des indices de debits journaliers extrêmes à l'inondation dans le bassin versant de l'Ouémé à l'exutoire de Bonou. XXX^{ème} colloque de l'Association Internationale de Climatologie, Sfax 03-06 juillet, 451-457.
- Amoussou, E., Totin, V.S.H., Vissin, E.W., Diedhiou, A., Houndenou, C., Mahe, G., Boko, M. (2017). Variabilité climatique et dynamique hydro-écologique dans le bassin-versant du fleuve Ouémé au Bénin. XXX^{ème} colloque de l'Association Internationale de Climatologie, Sfax 03-06 juillet, 451-457.
- BenMoussa, T., Amrouni, O., Hzami, A., Dezileau, L., Mahe, G., Saadi, A. (2018). Human impact on the morpho-sedimentary evolution on the coastal deltaic zones (case of application: artificial channel of

- Medjerda river, Tunisia). In: Kallel A., Ksibi M., Ben Dhia H., Khélifi N. (eds) Recent Advances in Environmental Science from the Euro-Mediterranean and Surrounding Regions. EMCEI 2017. Advances in Science, Technology & Innovation (IEREK Interdisciplinary Series for Sustainable Development). Springer, Cham. https://doi.org/10.1007/978-3-319-70548-4_495
- Hallouz, F., Karahacane, H., Meddi, M., Sadi, F., Benchick, H., Kemerchou, F., Mahe, G. (2018). Impact of climate variability on hydrology of the western Mitidja watershed. In: Kallel A., Ksibi M., Ben Dhia H., Khélifi N. (eds) Recent Advances in Environmental Science from the Euro-Mediterranean and Surrounding Regions. EMCEI 2017. Advances in Science, Technology & Innovation (IEREK Interdisciplinary Series for Sustainable Development). Springer, Cham. https://doi.org/10.1007/978-3-319-70548-4_221
- Taibi, S., Meddi, M., Mahe, G. (2018). How well do regional climate models simulate rainfall variability of northern Algeria. PAUWES-Research 2 practice forum, 16-18 avril, Tlemcen, Algeria.
- Kone, S., Bamba, F., Mahe, G. (2018). Utilisation de la Géostatistique pour l'Estimation de Paramètres des Modèles Hydrologiques sur des sous-bassins versants du haut Niger à Koulikoro. 10ème conférence MSAS, Malian Society of Applied Sciences, Bamako, Mali, 29/07-03/08.
- Kotti, F., Dezileau, L., Mahe, G., Habaieb, H., Benabdallah, S., Bentkaya, M., Calvez, R., Dieulin, C. (2018). Modélisation et reconstitution des transports solides. 3rd International Conference on the Hydrology of African large river basins, Algiers, FRIEND/UNESCO/IHP-IAHS, 6-8th May 2018.
- Kotti, F., Dezileau, L., Mahe, G., Habaieb, H., Bentkaya, M., Dieulin, C. (2018). Reconstitution des événements climatiques extrêmes du bassin Méditerranéen Medjerda : l'approche paléohydrologique. 3rd International Conference on the Hydrology of African large river basins, Algiers, FRIEND/UNESCO/IHP-IAHS, 6-8th May 2018.
- Hzami, A., Amrouni, O., Mahe, G., Benmoussa, T., Abdeljaouad, S. (2018). Assessment of coastal vulnerability to sea level rise along the Western bay of the gulf of Tunis, Tunisia. 3rd International Conference on the Hydrology of African large river basins, Algiers, FRIEND/UNESCO/IHP-IAHS, 6-8th May 2018.
- El Aoula, R., Mhammdi, N., Dezileau, L., Mahe, G., Trakadas, A., Huff, L., Kacimi, I. (2018). Reconstruction of the history of sedimentary transport variability in Bouregreg river, Morocco. 3rd International Conference on the Hydrology of African large river basins, Algiers, FRIEND/UNESCO/IHP-IAHS, 6-8th May 2018.
- Mahe, G. (2018). La bibliométrie dans les sciences de l'eau, les éléments clés à prendre en compte et comparaison avec d'autres domaines scientifiques. 3rd International Conference on the Hydrology of African large river basins, Algiers, FRIEND/UNESCO/IHP-IAHS, 6-8th May 2018.
- Mahe, G., Amrouni, O., Ben Moussa, T., Chouba, L., Dezileau, L., El Aoula, R., Emran, A., Habaieb, H., Hadour, A., Hallouz, F., Hara, F., Hout, R., Hzami, A., Kacimi, I., Khaffou, I., Khedimallah, A., Khsiba, S., Kotti, F., Larara, A., Maleval, V., Meddi, M., Mhammdi, N., Missaoui, H., Saadi, A. (2018). Impact of climate change and river managements on the reduction of sediment transport to the sea in Maghreb. 3rd International Conference on the Hydrology of African large river basins, Algiers, FRIEND/UNESCO/IHP-IAHS, 6-8th May 2018.

- Mahe, G., Bogning, S., Bricquet, J.P. (2018). Changement climatique en Afrique équatoriale : l'Ogooué au Gabon. 3rd International Conference on the Hydrology of African large river basins, Algiers, FRIEND/UNESCO/IHP-IAHS, 6-8th May 2018.
- Benmoussa, T., Amrouni, O., Dezileau, L., Mahe, G., Abdeljaouad, S. (2018). Evolution géochimique et chronologique des dépôts deltaïques récents, cas d'étude le nouveau delta de la Medjerda, Golfe de Tunis. 3rd International Conference on the Hydrology of African large river basins, Algiers, FRIEND/UNESCO/IHP-IAHS, 6-8th May 2018.
- Descroix, L., Lambert, L., Barry, A., Dacosta, H., Mendy, A., Faty, B., Mahe, G., Diakite, M., Konate, L. (2018). Coefficients de tarissement et vidange des zones humides des montagnes de Guinée. 3ème conférence internationale sur l'hydrologie des grands fleuves d'Afrique, Alger, 2018.
- Amoussou et al. (2018). Variabilité hydroclimatique dans le bassin-versant du fleuve Ouémé à Bétérou à l'aide des données CORDEX-Afrique/ Hydroclimatic variability in Ouémé River Basin on Bétérou a using CORDEX-Africa data. 3ème conférence internationale sur l'hydrologie des grands fleuves d'Afrique, Alger, 2018.
- Sidibe, M., et al. (2018). Modes of streamflow variability in western and Central Africa between 1950 and 2005, role of catchment properties and teleconnections. In Session HS2.4.2/AS4.13 - Challenges understanding the links between hydrological variability and large-scale climate variations in a changing climate and environment. EGU Vienna.
- Amoussou, E., Totin, H.S.V., Totin, F.G., Houndenou, C., Mahe, G., Oyede, L.M., Boko, M. (2018). Récession climatique et évolution spatio-temporelle des paramètres physico-chimiques dans le lac Nokoué au Bénin. Journées Géographiques de Côte d'Ivoire (JGCI) XIe Edition « Les outils géographiques au service de l'émergence et du développement durable » Abidjan, 5-9 février.
- Hara, F., Achab, M., Emran, A., Mahe, G., El Fhel, B., Ouzzaouit, L.A. (2018). Estimation des taux d'érosion hydrique par développement d'une application Open Source de perte en sol: DUSLE (Desktop Universal Soil Loss Equation). 3ème conférence internationale sur l'hydrologie des grands fleuves d'Afrique, Alger, 6-8 mai 2018.

2.5 Supported various publications

- Safari MJS, Aksoy H, Unal NE, Mohammadi M, 2017, Non-deposition self-cleansing design criteria for drainage systems, **Journal of Hydro-environment Research**, 14, 76-84, doi: 10.1016/j.jher.2016.11.002
- Aksoy H, Eris E, Tayfur G, 2017, Empirical sediment transport models based on indoor rainfall simulator and erosion flume experimental data, **Land Degradation and Development**, 28, 1320-1328, doi: 10.1002/ldr.2555
- Aksoy H, Safari MJS, Unal NE, Mohammadi M, 2017, Velocity-based analysis of sediment incipient deposition in rigid boundary open channels, **Water Science and Technology**, 76, 9, 2535, doi: 10.2166/wst.2017.429
- Safari MJS, Aksoy H, Unal NE, Mohammadi M, 2017, Experimental analysis of sediment incipient motion in rigid boundary open channels, **Environ Fluid Mech.**, 17, 1281-1298, 10.1007/s10652-017-9550-z

- Vaheddoost B, Aksoy H, 2017, Structural characteristics of annual precipitation in Lake Urmia, **Theor Appl Climatol.**, 128, 919-932, doi: 10.1007/s00704-016-1748-3
- Lussana, C., Saloranta, T., Skaugen, T., Magnusson, J., Tveito, O. E., and Andersen, J. 2018 seNorge2 daily precipitation, an observational gridded dataset over Norway from 1957 to the present day, **Earth System Science Data**, 10,235-249, 2018, <https://doi.org/10.5194/essd-10-235-2018>.
- Sirangelo B, Caloiero T, Coscarelli R, Ferrari E (2017). A stochastic model for the analysis of maximum daily temperature. **Theoretical and Applied Climatology**, 130, 275-289, ISSN: 0177-798X, doi: 10.1007/s00704-016-1879-
- Sirangelo B, Caloiero T, Coscarelli R, Ferrari E (2017). Stochastic analysis of long dry spells in Calabria (Southern Italy). **Theoretical and Applied Climatology**, 127, 711-724, ISSN: 0177-798X, doi: 10.1007/s00704-015-1662-0
- Caloiero T, Coscarelli R, Ferrari E, Sirangelo B (2017). Trend analysis of monthly mean values and extreme indices of daily temperature in a region of southern Italy. **International Journal of Climatology**, 37, 284-297, ISSN: 0899-8418, doi: 10.1002/joc.5003
- Caloiero T, Coscarelli R, Ferrari E, Sirangelo B (2017). Temporal Analysis of Rainfall Categories in Southern Italy (Calabria Region). **Environmental Processes**, 4 (Suppl 1): S113–S124, doi: 10.1007/s40710-017-0215-1
- Paturel, J.E., Mahé, G., Diello, P., Barbier, B., Dezetter, A., Karambiri, A., Yacouba, H., Maiga, H., Dieulin, C. (2017). Using land cover changes and demographic data to improve hydrological modelling in Sahel. **Hydrological Processes**, 31, 4, 811-824, DOI: 10.1002/hyp.11057.
- Taibi, S., Meddi, M., Mahe, G., Assani, A. (2017) Relationships between atmospheric circulation indices and rainfall in Northern Algeria and comparison of observed and RCM-generated rainfall. **Theoretical and Applied Climatology**, 127, 1-2, 241-257.
- Zare, A., Mahe, G., Paturel, J.E., Barbier, B. (2017). Influence du Bani sur la variabilité saisonnière et interannuelle de la crue du fleuve Niger dans le delta intérieur. **Hydrological Sciences Journal**, 62, 16, 2737-2752. <http://dx.doi.org/10.1080/02626667.2016.1148816>
- Hallouz, F., Meddi, M., Mahe, G. (2017). Regimes des flux de matières solides en suspension dans le bassin versant de l'oued Mina sur l'oued Cheliff (nord ouest d'Algérie). **La Houille Blanche**, 4, 61-71. <https://doi.org/10.1051/lhb/2017034>
- Zare, A., Barbier, B., Bologo Traore, M., Diarra, A., Mahe, G., Paturel, J.E. (2017). Climate Forecast perception and needs in Wetlands: A Case Study of the Inner Niger Delta in Mali. **Wetlands**. <https://doi.org/10.1007/s13157-017-0926-0>
- Kotti, F., Dezileau, L., Mahe, G., Habaieb, H., Benabdallah, S., Bentkaya, M., Calvez, R., Dieulin, C. (2017). The impact of dams and climate on the evolution of the sediment loads to the sea by the Medjerda River using a paleo-hydrological approach. **Journal of African Earth Sciences**. <https://doi.org/10.1016/j.jafrearsci.2017.10.003>
- Adeaga, O., Mahé, G., Dieulin, C., Elbaz-Poulichet, F., Rouché, N., Seidel, J.L., Servat, E. (2017). Quality of water resources in the Niger basin and in the region of Lagos (Nigeria). **Bulletin of Geography. Physical Geography Series**, 13, 1, 51-60, <http://dx.doi.org/10.1515/bgeo-2017-0013>

- Mahe, G. (2017). The indexation of scientific journals and the bibliometry: examples with current tools. **Working paper, ResearchGate**, April 2017, DOI 10.13140/RG.2.2.28842.21441
- Maley, J., Doumenge, C., Giresse, P., Mahe, G., Chepstow-Lusty, A., Hubau, W., Lokonda, M.O., Tshibamba, J.M. (2018). Late Holocene forest contraction and fragmentation in Central Africa. **Quaternary Research**. 89, 43-59, doi:10.1017/qua.2017.97
- Kodja, D.J., Amoussou, E., Quenum, G.M.L.D., Mahe, G., Paturel, J.E., Boko, M., Houndenou, C. (2018). Indicators of Hydroclimatic extreme hazards to flooding in the Oueme watershed in Benin. **European Journal of Scientific Research**.
- Bogning, S., Frappart, F., Blarel, F., Nino, F., Mahe, G., Bricquet, J.P., Seyler, F., Onguene, R., Etame, J., Paiz, M.C., Braun, J.J. (2018). Monitoring water levels and discharges using radar altimetry in anung augmented river basin: the case of the Ogooué. **Remote Sensing**.
- Hallouz, F., Meddi, M., Mahe, G., Alirahmani, S. (2018). Modeling of flow and sediment transport through the swat model in a semi-arid area case of the watershed of Harraza (Northwest of Algeria). **Water Science The National Water Research Center Journal**.
<https://doi.org/10.1016/j.wsj.2017.12.004>

3. Other Services

Hafzullah Aksoy

Universities Representative of National Hydrology Commission of Turkey

Coordinator, Statistical Hydrology Working Group under National Hydrology Commission of Turkey

Coordinator and Researcher in Scientific and Technical Projects

Teaching, Research and Development activities at University

Connection with the Industry

Gil Mahe

President of FIGCC FRIEND/UNESCO-IHP program

Regional coordinator of the MEDFRIEND project

4. Future Activities

Gil Mahe, co-organizer of 3 events:

FRIEND/UNESCO-IAHS International conference to be held in Algiers 6-8th May 2018, co-organizer.

8th Global International FRIEND/UNESCO Conference, with IAHS support, Beijing, China, 6-9th November, Secretary General of the conference.

AGU Chapman "Congo river hydrology" conference, Washington, 25-27th September 2018, co-organizer.

Participation to the IAHS UPH session 14th April Vienna, and to the IAHS Bureau 15th April Vienna.