Results of the STAHY Best Paper Award 2020

The STAHY Best Paper Award 2020 is assigned to:

- *Francesco Serinaldi,* School of Engineering, Newcastle University, UK
- *Chris G. Kilsby*, School of Engineering, Newcastle University, UK
- *Federico Lombardo,* Corpo Nazionale dei Vigili del Fuoco, Ministero dell'Interno, Italy

G.C. Kilsby *F.Lombardo*

for the paper:

Serinaldi, F., Kilsby, C.G, Lombardo, F. (2018). Untenable nonstationarity: An assessment of the fitness for purpose of trend tests in hydrology. Advances in Water Resources 111: 132-155, doi: 10.1016/j.advwatres.2017.10.015.

The STAHY Best Paper Award 2020 will be assigned during the STAHY'21 Conference - Valencia, September 2021.

The STAHY Best Paper 2020 is the result of evaluation of the following 20 papers, proposed by the ICSH Officers and published in 2016-2017-2018, ordered by citations (SCOPUS database, excluding self-citations):

1. Humphrey, G. B., Gibbs, M. S., Dandy, G. C., & Maier, H. R. (2016). A hybrid approach to monthly streamflow forecasting: integrating hydrological model outputs into a Bayesian artificial neural network. Journal of Hydrology, 540, 623-640 (cited 66 times)
2. Karlsson, I. B., Sonnenborg, T. O., Refsgaard, J. C., Trolle, D., Børgesen, C. D., Olesen, J. E., ... & Jensen, K. H. (2016). Combined effects of climate models, hydrological model structures and land use scenarios on hydrological impacts of climate change. Journal of Hydrology, 535, 301-317 (cited 64 times)
3. Kundzewicz, Z. W., Krysanova, V., Benestad, R. E., Hov, Ø., Piniewski, M., & Otto, I. M. (2018). Uncertainty in climate change impacts on water resources. Environmental Science & Policy, 79, 1-8 (cited 56 times)
4. Serinaldi, F., Kilsby, C.G, Lombardo, F. (2018). Untenable nonstationarity: An assessment of the fitness for purpose of trend tests in hydrology. Advances in Water Resources 111: 132-155 (cited 44 times)
5. Zhao, T., Bennett, J. C., Wang, Q. J., Schepen, A., Wood, A. W., Robertson, D. E., & Ramos, M. H. (2017). How suitable is quantile mapping for postprocessing GCM precipitation forecasts?. Journal of Climate, 30(9), 3185-3196 (cited 36 times)

6. Luke, A., Vrugt, J. A., AghaKouchak, A., Matthew, R., & Sanders, B. F. (2017). Predicting nonstationary flood frequencies: Evidence supports an updated stationarity thesis in the United States. Water Resources Research, 53(7), 5469-5494 (cited 32 times)

7. Halbert, K., Nguyen, C. C., Payrastre, O., & Gaume, E. (2016). Reducing uncertainty in flood frequency analyses: A comparison of local and regional approaches involving information on extreme historical floods. Journal of Hydrology, 541, 90-98 (cited 29 times)

8. Šraj, M., Viglione, A., Parajka, J., & Blöschl, G. (2016). The influence of non-stationarity in extreme hydrological events on flood frequency estimation. Journal of Hydrology and hydromechanics, 64(4), 426-437 (cited 28 times)

9. Silva, A. T., Naghettini, M., & Portela, M. M. (2016). On some aspects of peaks-over-threshold modeling of floods under nonstationarity using climate covariates. Stochastic environmental research and risk assessment, 30(1), 207-224 (cited 22 times)

10. Yin, J., Guo, S., He, S., Guo, J., Hong, X., & Liu, Z. (2018). A copula-based analysis of projected climate changes to bivariate flood quantiles. Journal of hydrology, 566, 23-42 (cited 20 times)

11. Caillouet, L., Vidal, J. P., Sauquet, E., & Graff, B. (2016). Probabilistic precipitation and temperature downscaling of the Twentieth Century Reanalysis over France. Climate of the Past, 12(3) (cited 19 times)

12. Brunner, M. I., Viviroli, D., Sikorska, A. E., Vannier, O., Favre, A. C., & Seibert, J. (2017). Flood type specific construction of synthetic design hydrographs. Water Resources Research, 53(2), 1390-1406 (cited 18 times)

13. Hattermann, F. F., Vetter, T., Breuer, L., Su, B., Daggupati, P., Donnelly, C., ... & Liersch, S. (2018). Sources of uncertainty in hydrological climate impact assessment: a cross-scale study. Environmental Research Letters, 13(1), 015006 (cited 18 times)

14. Serinaldi, F., & Kilsby, C. G. (2018). Unsurprising Surprises: The Frequency of Record-breaking and Overthreshold Hydrological Extremes Under Spatial and Temporal Dependence. Water Resources Research, 54(9), 6460-6487 (cited 14 times)

15. Gong, W., Q. Duan, J. Li, Y. Dai, (2016), Multi-Objective Adaptive Surrogate Modeling-Based Optimization for Parameter Estimation of Large, Complex Geophysical Models, Water Resources Research, 52(3), 1984-2008 (cited 14 times)

16. Li, B., Liang, Z., Zhang, J. & Wang, G. (2017). A revised drought index based on precipitation and pan evaporation. International Journal of Climatology, 37(2):793-801 (cited 13 times)

17. Steinbakk, G. H., Thorarinsdottir, T. L., Reitan, T., Schlichting, L., Hølleland, S., & Engeland, K. (2016). Propagation of rating curve uncertainty in design flood estimation. Water Resources Research, 52(9), 6897-6915 (cited 13 times)

18. Gong, W., Q. Duan, (2017). An adaptive surrogate modeling-based sampling strategy for parameter optimization and distribution estimation (ASMO-PODE), Environmental Modelling & Software, 2017, 95: 61-75 (cited 10 times)

19. Ternynck, C., Ben Alaya, M. A., Chebana, F., Dabo-Niang, S., & Ouarda, T. B. (2016). Streamflow hydrograph classification using functional data analysis. Journal of hydrometeorology, 17(1), 327-344 (cited 10 times)

20. Costa, V., & Fernandes, W. (2017). Bayesian estimation of extreme flood quantiles using a rainfall-runoff model and a stochastic daily rainfall generator. Journal of Hydrology, 554, 137-154 (cited 6 times)