

LIST OF REFERENCES

- Adarsh, S., & Reddy, M. (2014). Trend analysis of rainfall in four meteorological subdivisions of southern India using nonparametric methods and discrete wavelet transforms. *International journal of climatology*, 35(6), 1107-1124.
- Ampitiyawatta, A. D., & Guo, S. (2009). Precipitaion trends in the Kalu ganga basin in Sri Lanka. *The Journal of Agricultural science*, 4(1), 10-18.
- Andreassian, V., Coron, I., Lerat, J., & Moine, N. (2016). Climate elasticity of streamflow revisited-an elasticity index based on long-term hydrometeorological records. *Hydrology and Earth system Sciences*, 20, 4503-4524.
- Barua, S., Muttil, N., Ng, A. W., & Perera, B. J. (2013). Rainfall trend and its implications for water resource management within the Yarra river catchment, Australia. *Hydrological Processes*, 27(12), 1727-1738.
- Bennet, D. A. (2001). How can I deal with missing data in my study? 2, 464-469.
- Chai, T., & Draxler, R. R. (2014). Root mean square error (RMSE) or mean absolute error (MAE)?— Arguments against avoiding RMSE in the literature. *Geoscientific Model Development*, 7(3), 1247-1250.
- Chiew, F. H. (2006). Estimationof rainfall elasticity of streamflow in Australia. *Hydrological Sciences Journal*, 51:4, 613-625.
- Chiew, F. H., & McMahon, T. A. (2002). Modelling the impacts of climate change on Australian streamflow. *Hydrological Processes*, 2002, 1235-1245.
- Chiew, F. H., Peel, M. C., Mcmahon, T. A., & Siriwardena, L. W. (2006). Precipitaion elasticity of streamflow in catchments across the world. *Climate variability and change-Hydrological Impacts*, 308, 256-262.
- Chow, V., Maidment, D. R., & Mays, L. W. (1988). *Applied Hydrology*. McGraw-Hill Book Company.

- Cunderlik, J. M., & Simonovic, S. P. (2004). *Calibration, verification and sensitivity analysis of the HEC-HMS hydrologic model*. Assessment of Water Resources Risk and Vulnerability to changing climatic condition.
- De Silva, M. M., Weerakon, S. B., & Herath, S. (2014). Modeling of event and continuous flow hydrographs with HEC-HMS :case study in the Kelani river basin, Sri Lanka. *Journal of hydrologic Engineering*, 800-806.
- Department of Meteorology. (2019). *Department of Meteorology*. Retrieved from Climate of Sri Lanka: <http://www.meteo.gov.lk>
- Dissanayaka, K. D., & Rajapakse, R. L. (2018). Climate Extremes and Precipitation Trends in Kelani River Basin, Sri Lanka and Impact on Streamflow Variability under Climate Change., 2, pp. 1-17.
- Fu, G., Chiew, F., Charles, S. P., & Mpelasoka, F. (2011). Assessing precipitation elasticity of streamflow based on the strength of the precipitation-streamflow relationship. *19th International Congress on Modelling and Simulation*, 3567-3572.
- Gajbhiye, S., Meshram, C., Mirabbasi, R., & Sharma, S. K. (2015). Trend analysis of rainfall time series for Sindh river basin in India. *Springer*.
- Gan, T. Y. (1987). *Applications of Scientific Modeling of Hydrologic Responses from hypothetical small catchment to assess a complex conceptual rainfall runoff model*. Seattle, WA: PhD Dissertation, Department of Civil Engineering, University of Washington.
- Gosain, A. K., Mani, A., & Dwivedi, C. (2009). Hydological modelling-literature review. *Advances in fluid mechanics*, 339, 63-70.
- Green, I. R., & Stephenson, D. (2009). Criteria for comparison of single event models. *Hydrological Sciences Journal*, 31(3), 395-411.
- Halwatura, D., & Najim, M. M. (2013). Application of the HEC-HMS model for runoff simulation in a tropical catchment. *Environmental Modelling and Software*, 46, 155-162.

- Hamed, K. H., & Rao, A. R. (1997). A modified Mann-Kendall trend test for autocorrelated data. *Journal of Hydrology*, 204(1998), 182-196.
- Hirsch, R. M., & Slack, J. R. (1984). A nonparametric trend test for seasonal data serial dependence. *Water resources research*, 20(6), 727-732.
- Hirsch, R. M., Slack, J. R., & Smith, R. A. (1982). Techniques of Trend Analysis for Monthly Water Quality Data. *Water resources research*, 18(1), 107-121.
- IPCC. (2014). *IPCC*. Geneva, Switzerland: IPCC.
- Jain, S. K., & Kumar, V. (2012). Trend analysis of rainfall and temperature data for India. *Current Science*, 102(1), 37-49.
- Jain, S. K., Kumar, V., & Sahariad, M. (2013). Analysis of rainfall and temperature trends in north-east India. *International Journal of Climatology*, 33(4), 968-978.
- Jayawardene, H. K., Sonnadara, D. U., & Jayewardene, D. R. (2005). Trends of rainfall in Sri Lanka over the last century. *Sri Lankan Journal of Physics*, 6, 7-17.
- Jones, J. A. (1997). *Global Hydrology: Processes, Resources and Environmental Management*. Routledge.
- Kahya, E., & Kalayci, S. (2003). Trend analysis of streamflow in Turkey. *Journal Hydrology*, 289(2004), 128-144.
- Kamran, M., & Rajapakse, R. L. (2018). Effect of watershed subdivision and antecedent moisture condition on HEC-HMS model performance in the Maha Oya basin, sri Lanka. *International Journal of engineering Technology and Sciences*, 5(2), 22-37.
- Karunathilaka, K. L., Dabare, H. K., & Nandalal, K. D. (2017). Changes in Rainfall in Sri Lanka during 1966 – 2015. *ENGINEER*, L(2), 39-48.
- Keerthirathne, W. H., & Wijesekara, N. T. (2017). Determination of a Design Rainfall Pattern by Comparing with its Effect on Streamflow on Greater

- Colombo Watershed in Sri Lanka. *UMCSAWM Water Conference*, (pp. 35-40).
- Kendall, M. (1975). *Rank correlation methods*. London: Charles Griffin.
- Khandu, D., & Wijesekara, N. T. (2015). *A monthly water balance model for evaluation of climate change impacts on the streamflow of Gin ganga and Kelani ganga basins, SRi Lanka*.
- Khaniya, B., Jayanayaka, I., Jayasanka, P., & Rathnayake, U. (2019). Rainfall trend analysis in Uma Oya basin, Sri Lanka, and future water scarcity problems and perspective of climate variability. *Advance in Meteorology, 2009*.
- Kidemu, M., & Rao, D. R. (2016). Observed and Projected Rainfall Trends and Variability: A Case Study in Gama Gofa Zone, Ethiopia. *Imperial Journal of Interdisciplinary Research, 2(6)*, 1201-1210.
- Kim, B. S., Hong, S. J., & Lee, H. D. (2013). The potential effects of climate change on streamflow in rivers basin of Korea using rainfall elasticity. *Environmental Engineering Research, 18(1)*, 9-20.
- Lettenmaier, D. P., Wood, E. F., & Wallis, J. R. (1994). Hydro-Climatological Trends in the Continental United States, 1948-88. *Journal of Climate, 7*, 586-607.
- Liew, V., Arnold, M. W., Garbrecht, J. G., & J, D. (2003). Hydrologic simulation on agricultural watersheds: choosing between two models. *Trans. ASAE, 46(6)*, 1539-1551.
- Lin, F., Cheng, X., & Yao, H. (2017). Evaluating the Use of Nash-Sutcliffe Efficiency Coefficient in Goodness-of-Fit Measures for Daily Runoff Simulation with SWAT. *Journal of Hydrology Engineering, 22(11)*.
- Madsen, H. (2000). Automatic Calibration of a Conceptual Rainfall-Runoff Model Using Multiple Objectives. *Journal of Hydrology, 235(3)*, 276-288.
- Mann, H. B. (1945). Nonparametric tests against trend. *Econometrica, 13*, 245-259.

- Moriasi, D. N., Arnold, J. G., Liew, M. W., Bingner, R. L., Harmel, R. D., & Veith, T. L. (2007). Model evaluation guidelines for systematic quantification of accuracy in watershed simulations. *Transactions of the ASABE*, 50(3), 885-900.
- Muthukrishnan, S., Harbor, J., Lim, K. J., & Engel, B. A. (2006). Calibration of a simple rainfall-runoff model for long-term hydrological impact evaluation. *URISA Journal*, 18(2), 35-42.
- Muthuwatta, L., Perera, H. P., Eriyagama, N., Surangika, K. B., & Premachandra, W. W. (2017). Trend and variability of rainfall in two river basins in Sri Lanka: an analysis of meteorological data and farmers' perceptions. *Water International*, 42(8), 981-999.
- Nandalal, K. D., Caldera, H. P., & Piyathisse, V. R. (2016). A Comparison of Methods of Estimating Missing Daily Rainfall Data. *Journal of the Institution of Engineers, Sri Lanka*, 49(4), 1-8.
- Nash, J. E., & Sutcliffe, J. V. (1970). River flow forecasting through conceptual models part I — A discussion of principles. *Journal of Hydrology*, 10(3), 282-290.
- Nash, L. L., & Gleick, P. H. (1991). Sensitivity of streamflow in the Colorado basin to climatic changes. *Journal of Hydrology*, 125, 221-241.
- Nemec, J., & Schaake, J. (1982). Sensitivity of water resource systems to climate variation. *Hydrological Sciences Journal*, 27:3, 327-343.
- Ngongondo, C., Xu, C.-Y., Gottschalk, L., & Alemaw, B. (2011). Evaluation of spatial and temporal characteristics of rainfall in Malawi: a case of data scarce region. *Theoretical and Applied Climatology*, 106, 79-93.
- Nisansala, W. D., Abeysingha, N. S., Islam, A., & Bandara, A. M. (2020). Recent rainfall trend over Sri Lanka (1987–2017). *International Journal of Climatology*, 40(7), 3417-3435.

- Partal, T., & Kahya, E. (2005). Trend analysis in Turkish precipitation data. *Hydrological Processes*, 20(2006), 2011-2026.
- Pearson, K. (1895). Notes on regression and inheritance in the case of two parents. *Proceedings of the royal society of London*.
- R Core Team. (2013). *A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. Retrieved from <http://www.R-project.org>
- Sampath, D. S., Weerakon, S. B., & Herath, S. (2015). HEC-HMS model for runoff simulation in a tropical catchment with intra basin diversions - case study of the Deduru Oya river basin, Sri Lanka. *Engineer*, XLVIII(1), 1-9.
- Sankarasubramanian, A., Vogel, R. M., & Limbrunner, J. F. (2001). Climate elasticity of streamflow in the United States. *Water resources research*, 37, 1771-1781.
- Santhi, C., Arnold, J. G., Williams, J. R., Dugas, W. A., Srinivasan, R., & Hauck, L. M. (2001). Validation of the SWAT model on a larger river basin with point and non-point sources. *Journal of the American water resources association*, 37(5), 1169-1188.
- Schaake, J. C. (1990). *From climate to flow- Climate Change and US Water Resources*. (P. E. Waggoner, Ed.) New York: John Wiley.
- Scharffenberg, B., Bartles, M., Brauer, T., Fleming, M., & Greg, K. (2018). *Hydrologic Modeling System HEC-HMS,User's Manual, Version4.3*. US Army Corps of Engineers.
- Schumann, A. (1998). Thiessen Polygon. *Encyclopaedia of Hydrology and Lakes*, 648-649.
- Sen, P. (1968). Estimates of the Regression Coefficient Based on Kendall's Tau. *Journal of American statistical association*, 63(324), 1379-1389.
- Sharma, A., & Wasko, C. (2019). Trends and changes in hydroclimatic variables. *ScienceDirect*, 275-304.

Shelton, S., & Lin, Z. (2019). Streamflow Variability in Mahaweli River Basin of Sri Lanka during 1990-2014 and its possible mechanisms. *Water*, 11, 2485.

Sorooshian, S., Hsu, K., Coppola, E., Toamasseti, B., Verdecchia, M., & Visconti, G. (2008). Hydrological Modelling and the Water Cycle: Coupling the Atmospheric and Hydrological Models. *Water science and Technology Library*, 63.

Todini, E. (1996). The ARNO rainfall-runoff model. *Journal of Hydrology*, 175, 339-382.

Warnasooriya, A. (2016, April 26-28). *First Steering Committee Meeting of South Asia Flash*. Retrieved from <http://www.wmo.int/pages/prog/hwrp/flood/ffgs/SAsiaFFG/documents/presentations/day1/countries/SriLanka/MeteorologicalComponent.pdf>

Wicher, K. (2016). Rainfall runoff modeling in Kavlinge river basin with HEC-HMS: Hydrologic response to the climate of the future.

Willmott, C. J., & Matsuura, K. (2005). Advantages of the mean absolute error (MAE) over the root mean square error (RMSE) in assessing average model performance. *Climate research*, 30, 79-82.

WMO. (1975). *Volume I. Manual on the Observation of Clouds and Other Meteors*. Geneva, Switzerland: International Cloud Atlas.

WMO. (2008). *Volume 1, Guide to Hydrological practices, , Hydrology- from measurement to hydrological information*. Geneva, Switzerland: World Meteorological Organization.

WMO. (2017). *Guidelines on the Calculation of Climate Normals*. Geneva, SwitzerLand: WMO.

Xiong, L., & Guo, S. (1999). A two-parameter monthly water balance model and its applications. *Journal of Hydrology*, 216, 111-123.

- Xu, C. Y. (1999). Climate Change and Hydrologic Models: A Review of existing gaps and recent research developments. *Water Resources Management*, 13, 369-382.
- Xu, H., Xu, C.-Y., Chen, H., Zhang, Z., & Li, L. (2013). Assessing the influence of rain gauge density and distribution on hydrological model performance in a humid region of China. *Journal of Hydrology*, 505, 1-12.
- Yang, Z., & Liu, Q. (2011). Response of Streamflow to Climate Changes in the Yellow River Basin, China. *Journal of Hydrometeorology*, 12, 1113-1126.
- Yu, Y.-S., Zou, S., & Whittemore, D. (1993). Non-parametric trend analysis of water quality data of rivers in Kansas. *Journal of hydrology*, 150(1), 61-80.
- Yue, S., & Hashino, M. (2003). Temperature trends in Japan: 1900–1996. *Theoretical and Applied Climatology*, 75, 15-27.
- Yue, S., & Pilon, P. (2004). A comparison of the power of the t test, MannKendall and bootstrap tests for trend detection. *Hydrological Sciences Journal*, 49(1), 21-37.
- Yue, S., & Wang, C. Y. (2002). Applicability of prewhitening to eliminate the influence of serial correlation on the Mann-Kendall test. *Water resources research*, 38, 1-7.
- Zheng, H., Zhang, L., Zhu, R., Liu, C., Sato, Y., & Fukushima, Y. (2009). Responses of streamflow to climate and land surface change in the headwater of the Yellow river basin. *Water resources research*, 45, 1-9.
- Zhou, X., Zhang, Y., & Yang, Y. (2015). Comparison of two approaches for estimating precipitation elasticity of streamflow in China's main river basins. *Advances in Meteorology*, 2015, 1-8.