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WIRADA Research bibliography – Streamflow forecasting

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1 Flood and Short term stream flow forecasts publications

Water forecasting and prediction – short term (Project 4.1)

JOURNAL PAPERS

1. Barrett D, Renzullo L. 2009. On the efficacy of combining thermal and microwave satellite data as observational constraints in hydrological and hydrometeorological data assimilation. *Journal of Hydrometeorology*, **10**: 1109–1127. doi: 10.1175/2009JHM1043.1
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6. Cuo L, Pagano T, Wang Q. 2011. A review of quantitative precipitation forecasts and their use in up to medium-range streamflow forecasting. *Journal of Hydrometeorology*, **12**: 713–728. doi: 10.1175/2011JHM1347.1.
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9. Nguyen T, He Z, Zhang R, Ward P. 2012. Boosting moving object indexing through velocity partitioning. *The Proceedings of the VLDB Endowment*, **5**: 860–871. doi 10.14778/2311906.2311913
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14. Bennett J, Grose M, Corne S, White C, Holz G, Katzfey J, Post D and Bindoff N. 2014. Performance of an empirical bias-correction of a high-resolution climate dataset. *International Journal of Climatology*, **34**(7): 2189–2204. doi 10.1002/joc.3830

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2. Pagano T, Hapuarachchi HAP, Wang QJ. 2009. WIRADA short-term streamflow forecasting research [presentation]. Bureau of Meteorology Flood Early Warning System (FEWS) pilot project workshop.
3. Pagano T, Wang Q, Hapuarachchi HAP, Toscas P, Robertson D. 2009. WIRADA streamflow forecasting research [presentation]. Water in a changing climate: Progress in Land-Atmosphere Interactions and Energy/Water Cycle Research. *GEWEX/iLEAPS joint congress*. Melbourne, VIC. 24–28 August 2009.
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14. Robertson D, Wang QJ, Shrestha D, Li M, Hapuarachchi H, Song Y, Bennett J, Ward P. 2012. A framework for short-term ensemble forecasting of flood and river flows in Australia. *AOGS-AGU (WPGM) - Joint Assembly*. Singapore. August 2012.
15. Shrestha D, Robertson D, Wang Q, Pagano T, Hapuarachchi P. 2012. Evaluation of Numerical Weather Prediction Model Rainfall Forecasts for Streamflow Forecasting. *Hydrology and Water Resources Symposium 2012*. Sydney. 19–21 November 2012.
16. Toscas P, Winnel M. 2012. Quantifying and communicating uncertainty in short-term hydrological forecasting. *Water Information Research and Development Alliance: Science Symposium Proceedings*. Melbourne. 1–5 August 2011. Pp. 106–111.
17. Robertson D, Shrestha D, Bennett J, Wang Q. 2013. Generating realistic ensemble rainfall forecasts for flood and short-term streamflow forecasting applications, presentation given at *7th Annual CAWCR Workshop* held on 21–23 October 2013 at the Bureau of Meteorology, Melbourne.

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1. Gouweleeuw B. 2008. An evaluation of FEWS. Technical report. Water for a Healthy Country Flagship, CSIRO.
2. Hapuarachchi P, Wang QJ. 2008. A review and assessment of methods available for flash flood forecasting. A report for the Bureau of Meteorology. Water for a Healthy Country Flagship, CSIRO.
3. Gouweleeuw B. 2008b. WIRADA, Water Forecasting and Prediction Project, Activity 1b: Evaluation of Delft-FEWS. Technical Report to Bureau of Meteorology.

4. Gouweleeuw B. 2009. WIRADA Project 4.1: Water Forecasting and Prediction Short Term, Activity 6: Evaluation of Delft-FEWS. A report to the Bureau of Meteorology. Water for a Healthy Country Flagship, CSIRO.
5. Pagano T, Hapuarachchi P, Wang Q. 2009. Continuous soil moisture accounting and routing modelling to support short lead-time streamflow forecasting. Water for a Healthy Country Report. 50 pp.
6. Pagano T, Hapuarachchi P, Wang Q. 2009. Development and testing of a multi-model rainfall-runoff streamflow forecasting application. CSIRO: Water for a Healthy Country National Research Flagship. 39 pp.
7. Toscas P, Winnel M. 2009. Review of methods for quantifying uncertainty in short-term hydrological forecasting. A report for the Bureau of Meteorology. Water for a Healthy Country Flagship, CSIRO.
8. Cuo L, Pagano T, Wang Q. 2010. A review of the application of numerical weather prediction for short-term streamflow forecasting. CSIRO: Water for a Healthy Country National Research Flagship Technical Report. 38 pp.
9. Pagano T, Hapuarachchi P, Wang Q. 2010. Continuous rainfall-runoff model comparison and short-term daily streamflow forecast skill evaluation. CSIRO: Water for a Healthy Country National Research Flagship Technical Report.
10. Roux B, Seed A, Pagano T. 2010. Improved use of precipitation forecasts in short-term water forecasting - progress report. 30 pp.
11. Pagano T, Anticev J, Hapuarachchi P, Lal Shrestha D, Wang Q. 2011. Clearing the path: A conceptual design of a test-bed framework for evaluating improvements in hydrologic forecasts. Scoping study and strategy document for the Bureau of Meteorology. 34 pp.
12. Bennett JC, Robertson DE, Shrestha D, Ward PGD, Wang QJ. 2012. WIRADA project 4.1: water forecasting and prediction – flood and short-term workplan 2012/2013. CSIRO Land & Water: Highett, Victoria, pp. 24. EP1310716.
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16. Song Y, Wang QJ, Robertson D, Mashford J. 2013. Estimating sub-catchment rainfall from rain gauge observations at daily time steps. CSIRO Water for a Healthy Country Flagship, Australia.

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Flood and Short Term Water Forecasting (Project 4.3)

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2. Shrestha DL, Kayastha N, Solomatine D, Price R. 2014. Encapsulation of parametric uncertainty statistics by various predictive machine learning models: MLUE method. *Journal of Hydroinformatics*, **16**(1): 95-113. doi: 10.2166/hydro.2013.242
3. Song Y, Li Y, Bates B, Wike C. 2014. A Bayesian hierarchical downscaling model for south-west Western Australia rainfall. *Journal of the Royal Statistical Society: Series C*, **63**(5):715-36. doi: 10.1111/rssc.12055
4. Li M., Wang Q.J., Bennett J.C., Robertson D.E. 2015. A strategy to overcome adverse effects of autoregressive updating of streamflow forecasts. *Hydrology and Earth System Sciences*, **19**:1-15. doi:10.5194/hess-19-1-2015
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6. Alvarez-Garreton C; Ryu D; Western A; Su C; Crow W; Robertson D; Leahy C. 2015. Improving operational flood ensemble prediction by the assimilation of satellite soil moisture: comparison between lumped and semi-distributed schemes. *Hydrology and Earth System Sciences*, **19**(4): 1659-1676. doi:10.5194/hess-19-1659-2015
7. Li Y, Ryu D, Western AW, Wang QJ. 2015. Assimilation of stream discharge for flood forecasting: Updating a semidistributed model with an integrated data assimilation scheme. *Water Resources Research*, **51**: 3238-3258. doi: 10.1002/2014wr016667.
8. Li Y, Ryu D, Western AW, Wang QJ, Robertson DE, Crow WT. 2014. An integrated error parameter estimation and lag-aware data assimilation scheme for real-time flood forecasting. *Journal of Hydrology*, **519**: 2722-2736. doi: 10.1016/j.jhydrol.2014.08.009.
9. Bennett JC, Robertson DE, Shrestha DL, Wang QJ, Enever D, Hapuarachchi P, Tuteja NK. 2014. A System for Continuous Hydrological Ensemble Forecasting (SCHEF) to lead times of 9 days. *Journal of Hydrology*, **519**: 2832-2846. doi: 10.1016/j.jhydrol.2014.08.010.
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13. Bennett, James; Robertson, David; Ward, Phil; Hapuarachchi, Prasantha; Wang, QJ. 2016. Calibrating hourly hydrological models with daily forcings for streamflow forecasting applications. *Environmental Modelling & Software*, **76**: 20-36. doi:10.1016/j.envsoft.2015.11.006
14. Shrestha, D.L., Robertson, D. E., Song, Y., Bennett, J. C. and Wang, Q.J. Improving precipitation forecasts by generating ensembles through post-processing. *Monthly Weather Review*, **143**(9): 3642-3663. doi: 10.1175/MWR-D-14-00329.1.
15. Li, M., Wang, Q.J., Bennett, J.C. and Robertson, D.E. 2016. Error reduction and representation in stages (ERRIS) in hydrological modelling for ensemble streamflow forecasting. *Hydrology and Earth System Sciences*. doi:10.5194/hess-2015-514
16. Alvarez-Garreton C, Dongryeol R, Western A, Crow W, Su C, Robertson D. Dual assimilation of satellite soil moisture to improve flood prediction in ungauged catchments. Submitted to *Water Resources Research*. doi: 10.1002/2015WR018429
17. Perera K, Western A, Robertson D, George B, Nawarathna B. 2016. Ensemble forecasting of short-term system scale irrigation demands using real time flow data and numerical weather predictions. Submitted to *Water Resources Research*. doi: 10.1002/2015WR018532
18. M. Li, QJ. Wang, D.E. Robertson, J.C Bennett. Towards improved error modeling for streamflow forecasting at sub-daily time steps (Submitted to ePublish review). EP162747.

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1. Song Y, Wang Q, Robertson D, Mashford J. 2013. Bayesian hierarchical model for estimating sub-catchment rainfall at daily time steps [abstract] [accepted]. *20th International Congress on Modelling and Simulation (MODSIM2013)*. Adelaide. 1–6 December 2013.
2. Bennett J, Robertson D, Shrestha D, Wang Q. 2013. Selecting reference streamflow forecasts to demonstrate the performance of NWP-forced streamflow forecasts. *MODSIM2013 20th International Congress on Modelling and Simulation*. Adelaide, Australia. 1–6 December 2013. Pp. 2611–2617. EP1310865.
3. Bennett J, Robertson D, Shrestha D, Wang Q. 2014. A new ensemble streamflow and flood forecasting system for Australia using post-processed quantitative precipitation forecasts [abstract presented]. *AMOS National Conference*. Hobart. 12–14 February 2014.
4. Li M, Wang Q, Bennett J, Robertson D. 2014. A strategy to overcome adverse effects of autoregressive updating of streamflow predictions. *HEPEX Tenth Anniversary Workshop*. Maryland, USA. 24–26 June 2014.
5. Nilay D, Solomatine D, Shrestha D. 2014. Applying clustering approach in predictive uncertainty estimation: a case study with the UNEEC method [abstract]. *EGU General Assembly 2014*; 27 April - 2 May 2014; Vienna, Austria: EGU; 2014. p. 5992 p. EP14423.

6. Perraud J-M, Bennett J, Robertson D, Ward P. 2014. Model configuration and data management in the short-term water information forecasting tools [accepted]. *11th International Conference on Hydroinformatics*. New York. August 2014.
7. Perraud, J.-M., Bennett, J., Bridgart, R., Robertson, D. SWIFT2: Software for continuous ensemble short-term streamflow forecasting for use in research and operations. Poster presented at EGU General Assembly 2016, Vienna, April 2016 (Presented). EP16253.
8. D. Robertson, QJ Wang, J Bennett, D Shrestha, Y Song, M Li, J-M Perraud, R. Bridgart, A. Sha. Progress toward ensemble 7-day streamflow forecast for Australia. Oral presentation at the 2016 HEPEX Workshop, Quebec, 6-9 June 2016. EP161189.
9. D. Robertson, D. Shrestha, QJ Wang, Post-Processing Ensemble Precipitation Forecasts Using Geometric Model Combination. Poster presented at the 2016 HEPEX Workshop, Quebec, 6-9 June 2016. EP161189.
10. M. Li, D Robertson, QJ Wang, J Bennett. Towards improved error modelling for short-term streamflow forecasting in Australia. Oral presentation at the 2016 HEPEX Workshop, Quebec, 6-9 June 2016.
11. Robertson D, Bennett J, Shrestha D, Wang Q. 2014. A system for continuous hydrological ensemble forecasting (SCHEF) for Australia. *HEPEX Tenth Anniversary Workshop*. Maryland, USA. 24–26 June 2014.
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13. Robertson D, Shrestha D, Bennett J, Wang Q. 2014. Does post-processing deterministic numerical weather predictions at multiple time steps lead to better ensemble rainfall forecasts? *HEPEX Tenth Anniversary Workshop*. Maryland, USA. 24–26 June 2014.
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16. Wang Q, Song Y, Robertson D, Mashford J. 2014. ESDIIM - a model for ensemble simulation of rainfall field from gauge observations with extensive missing records. *HEPEX 10th Anniversary Workshop*. Maryland, USA. 24–26 June 2014.

17. Li M, Wang Q, Bennett J, Robertson D. A strategy to overcome adverse effects of autoregressive updating of streamflow prediction. HEPEX Tenth Anniversary Workshop; 24-26th June, 2014; Maryland, USA: HEPEX; 2014. EP143154 Song Y, Wang Q, Robertson D, Mashford J. Bayesian Hierarchical Model for estimating sub-catchment rainfall at daily time steps. *Hydrology & Water Resources Symposium (HWRS)*; 24-27 Feb 2014; Perth, W.A.: Engineers Australia; 2014. EP143040.
18. Nilay D, Solomatine D, Shrestha DL. Applying clustering approach in predictive uncertainty estimation: a case study with the UNEEC method. *EGU General Assembly 2014*; 27 April - 2 May 2014; Vienna, Austria: EGU; 2014. p. 5992 p. EP14423.
19. Perraud J-M, Bennett JC, Robertson D, Ward PGD. 2014. Model configuration and data management in the Short-term Water Information Forecasting Tools. *11th International Conference on Hydroinformatics*; 17-21 August 2014; New York, USA: International Association for Hydrologic Sciences.; 2015. p. 8. EP143350
20. Kayastha N, Solomatine D, Shrestha DL. Prediction of a Hydrological Model's Uncertainty by a Committee of Machine Learning-Models. *11th International Conference on Hydroinformatics*; 17 - 21 August 2014; New York City, USA 2014. EP143012; EP1311675.
21. Shrestha D; Robertson D; Bennett J; Song Y; Wang QJ. 2015. Evaluation and Post-processing of the rainfall forecasts from NWP models for use in streamflow forecasting. *21st International Congress on Modelling and Simulation (MODSIM2015)*; Gold Coast, Qld. 2015. EP154005.
22. Shrestha D; Robertson D; Bennett J; Song Y; Wang QJ. 2015 Assessing the performance of ensemble streamflow forecasts produced by the rainfall forecasts from Australian numerical weather prediction models. *15th EMS Annual Meeting & 12th European Conference on Applications of Meteorology (ECAM)*; Sofia, Bulgaria 2015. EP154008.
23. Shrestha D; Robertson D; Bennett J; Song Y; Wang QJ. 2015. Assessing the performance of ensemble streamflow forecasts produced by the rainfall forecasts from Australian numerical weather prediction models. *26th IUGG General Assembly 2015; Prague 2015*. EP15643.
24. Robertson D, Wang QJ, Bennett J, Shrestha D, Li M, Perraud J-M, Enever D, Hapuarachchi H, Tuteja N, (Accepted), Scientific foundations for continuous ensemble flood and short-term streamflow forecasting service. *2015 Hydrology and Water Resources Symposium*. EP156070.
25. Shrestha D, Robertson D, Bennett J, Song Y, Wang QJ. 2015. Assessing the performance of ensemble streamflow forecasts produced by the rainfall forecasts from Australian numerical weather prediction models. *15th EMS Annual Meeting & 12th European Conference on Applications of Meteorology (ECAM)*, Sofia, 7 – 11 September 2015. EP154008.
26. Shrestha D. Robertson D, Bennett J, Song Y, and Wang QJ. 2015. Evaluation and Post-processing of the rainfall forecasts from NWP models for use in streamflow forecasting. *21st International Congress on Modelling and Simulation (MODSIM2015)*, Gold Coast, 29 November – 4 December 2015 (Submitted). EP154005.

27. Li M, Wang QJ, Bennett J, Robertson D. 2015. Multiple lead-time streamflow forecasts by a staged error modelling approach. *21st International Congress on Modelling and Simulation (MODSIM2015)*, Gold Coast, 29 November – 4 December 2015. EP157211.
28. Robertson D, Bennett J, Wang QJ. 2015. A strategy for quality controlling hourly rainfall observations and its impact on hourly streamflow simulations. *21st International Congress on Modelling and Simulation (MODSIM2015)*, Gold Coast, 29 November – 4 December 2015 (Presented). EP158831.
29. Robertson D, Bennett J, Shrestha D, Li M, Song Y, Wang QJ. 2015. Ensemble forecasts of floods using numerical weather predictions. *2015 APEC Climate Symposium*, Manila, 2-4 November 2015 (Presented). EP157974.
30. Perraud J.-M, Bridgart R, Bennett J, Robertson D. 2015. SWIFT2: High performance software for short-medium term ensemble streamflow forecasting research and operations. *21st International Congress on Modelling and Simulation (MODSIM2015)*, Gold Coast, 29 November – 4 December 2015 (Presented). EP16251.
31. Perraud J.-M, Bennett J, Bridgart R, Robertson D. 2015. SWIFT2: Advanced Software for Continuous Ensemble Short-term Streamflow Forecasting. *36th Hydrology and Water Resources Symposium*, Hobart, 2 7-10 December 2015 (Presented). EP16250.

CLIENT AND TECHNICAL REPORTS

1. Robertson D, Bennett J, Wang Q, Shrestha D, Li M. 2013. Hydrological model calibration strategies for flood forecasting. CSIRO: Water for a Healthy Country Flagship. Australia.
2. Shrestha DL, Robertson D, Bennett J, Wang Q. 2014. Verification of rainfall forecast products for use in short-term streamflow forecasting. 50 pp. EP153988.
3. Robertson D, Bennett J. 2014. Establishing evidence to support the transition of modelling technology. CSIRO Water for a Healthy Country Flagship.
4. Bennett JC, Li M, Wang Q, Robertson D, Shrestha DL. 2014. Improving error modelling and calibration of continuous hydrological models for streamflow and flood forecasting. CSIRO Land & Water: Highett. EP147486.
5. Robertson, DE, Song, Y, Mashford J, Wang QJ, Bennett JC. 2014. The benefits of improved sub-catchment rainfall estimates for hydrological modelling. CSIRO Land & Water: Highett. 28 pp.
6. Shrestha, D.L., Robertson, D. E., Song, Y., Bennett, J. C. and Wang, Q.J. 2014. Assessing the performance of ensemble streamflow forecasts produced by the latest generation of rainfall forecasts: Progress report. EP153996.
7. Shrestha, D.L., Robertson, D. E., Song, Y., Bennett, J. C. and Wang, Q.J. 2015. Assessing the performance of ensemble streamflow forecasts produced by the latest generation of rainfall forecasts. EP154002.
8. Robertson, DE, Li, M, Bennett, JC, Shrestha, DL, Wang, QJ. 2015. Improving hydrological ensemble forecasts of high (flood) and low flows.
9. Robertson D.E. and Bennett, J.C. 2014. Establishing the efficacy of continuous modelling for flood forecasting in Australia. CSIRO Water for a Healthy Country Flagship, Australia.
10. Shrestha, D.L., Robertson, D., Song, Y., Bennett, J., and Wang, Q.J. 2016. Assessing the performance of post-processing method for ensemble rainfall forecasts. CSIRO Land and Water Flagship, Australia. EP16166.
11. Li, Ming 2016. Towards reliable hourly streamflow forecasting for ephemeral catchments. E-publish number to be advised.

2 Seasonal streamflow forecasts publications

Seasonal and long-term water forecasting and prediction (Project 4.2)

JOURNAL PAPERS

1. Wang Q, Robertson D, Chiew F. 2009. A Bayesian joint probability approach for seasonal forecasting of streamflows at multiple sites. *Water Resources Research*, **45**: W05407. doi:10.1029/2008WR007355.
2. Kirono D, Chiew F, Kent D. 2010. Identification of best predictors for seasonal runoff forecast in south-eastern Australia. *Hydrological Processes*, **24**: 1237–1247. doi: 10.1002/hyp.7585.
3. Pagano T, Wang Q, Hapuarachchi H, Robertson D. 2011. A dual-pass error-correction technique for forecasting streamflow. *Journal of Hydrology*, **405**: 367–381. doi: 10.1016/j.jhydrol.2011.05.036.
4. Wang E, Zhang Y, Luo J, Chiew F, Wang Q. 2011. Monthly and seasonal streamflow forecasts using rainfall-runoff modelling and historical weather data. *Water Resources Research*, **47**: W05516. doi: 10.1029/2010WR009922.
5. Wang Q, Pagano T, Zhou S, Hapuarachchi H, Zhang L, Robertson D. 2011. Monthly versus daily water balance models in simulating monthly runoff. *Journal of Hydrology*, **404**: 166–175. doi: 10.1016/j.jhydrol.2011.04.027.
6. Wang Q, Robertson D. 2011. Multisite probabilistic forecasting of seasonal flows for streams with zero value occurrences. *Water Resources Research*, **47**: [np], 19 pp. doi:10.1029/2010WR009333.
7. Luo J, Wang E, Shen S, Zheng H, Zhang Y. 2012. Effects of conditional parameterization on performance of rainfall-runoff model regarding hydrologic non-stationarity. *Journal of Hydrology*, **26**: 3953–3961. doi: 10.1002/hyp.8420
8. Robertson D, Pokhrel P, Wang Q. 2013. Improving statistical forecasts of seasonal streamflows using hydrological model output. *Hydrology and Earth Systems Sciences*, **17**: 579–593. doi:10.5194/hess-17-579-2013
9. Schepen A, Wang Q, Robertson D. 2012. Evidence for using climate indices to forecast Australian seasonal rainfall. *Journal of Climate*, **25**: 1230–1246. doi: 10.1175/JCLI-D-11-00156.1.
10. Schepen A, Wang Q, Robertson D. 2012. Combining the strengths of statistical and dynamical modeling approaches for forecasting Australian seasonal rainfall. *Journal of Geophysical Research Atmospheres*, **117**, D20107: doi: 10.1029/2012JD018011.

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