Appendix. List of cases

Case name	Papers
LittlePiney	Botter G. Flow regime shifts in the Little Piney creek (US)[J]. Advances in Water Resources, 2014, 71: 44-54.
PoRiver	Lanzoni S, Luchi R, Pittaluga M B. Modeling the morphodynamic equilibrium of an intermediate reach of the Po River (Italy)[J]. Advances in Water Resources, 2015, 81: 95–102.
UpperMcKenzie	Di Lazzaro M, Zarlenga A, Volpi E. Hydrological effects of within-catchment heterogeneity of drainage density[J]. Advances in Water Resources, 2015, 76: 157-167.
Babaohe	Lei F, Huang C, Shen H, et al. Improving the estimation of hydrological states in the SWAT model via the ensemble Kalman smoother: Synthetic experiments for the Heihe River Basin in northwest China[J]. Advances in Water Resources, 2014, 67: 32-45.
OldMansCreek	Ayalew T B, Krajewski W F, Mantilla R, et al. Exploring the effects of hillslope-channel link dynamics and excess rainfall properties on the scaling structure of peak-discharge[J]. Advances in Water Resources, 2014, 64: 9-20.
UpstreamGarza	Balistrocchi M, Grossi G, Bacchi B. Deriving a practical analytical-probabilistic method to size flood routing reservoirs[J]. Advances in Water Resources, 2013, 62: 37-46.
Peacheater	Kim J, Warnock A, Ivanov V Y, et al. Coupled modeling of hydrologic and hydrodynamic processes including overland and channel flow[J]. Advances in Water Resources, 2012, 37: 104-126.
Cauvery	Konar M, Todd M J, Muneepeerakul R, et al. Hydrology as a driver of biodiversity: Controls on carrying capacity, niche formation, and dispersal[J]. Advances in Water Resources, 2013, 51: 317-325.
Krishna	
Krishna	
Godavari	
Klodawka	Jasiewicz J Ł, Metz M. A new GRASS GIS toolkit for Hortonian analysis of drainage networks[J]. Computers & Geosciences, 2011, 37(8): 1162-1173.
Chabagou	Li T, Wang G, Chen J. A modified binary tree codification of drainage networks to support complex hydrological models[J]. Computers & Geosciences, 2010, 36(11): 1427-1435.
SaoFrancisco	Saraiva A G S, Paz A R. Multi-step change of scale approach for deriving coarse-resolution flow directions[J]. Computers & Geosciences, 2014, 68: 53-63.
TapajosRiver	
CooperRiver	Castronova A M, Goodall J L. A hierarchical network-based algorithm for multi-scale watershed delineation[J]. Computers & Geosciences, 2014, 72: 156-166.
MiddleColorado	Karimipour F, Ghandehari M, Ledoux H. Watershed delineation from the medial axis of river networks[J]. Computers & Geosciences,

	2013, 59: 132-147.
FuRiver	Xu C, Xu X, Dai F, et al. Comparison of different models for susceptibility mapping of earthquake triggered landslides related with the 2008 Wenchuan earthquake in China[J]. Computers & Geosciences, 2012, 46: 317-329.
JuniataRiver YoungWomansCreek	Yu X, Bhatt G, Duffy C, et al. Parameterization for distributed watershed modeling using national data and evolutionary algorithm[J]. Computers & Geosciences, 2013, 58: 80-90.
YaluTsangpo	Wang H, Fu X, Wang G. Multi-tree Coding Method (MCM) for drainage networks supporting high-efficient search[J]. Computers & Geosciences, 2013, 52: 300-306.
KaghanValley	Dehvari A, Heck R J. Removing non-ground points from automated photo-based DEM and evaluation of its accuracy with LiDAR DEM[J]. Computers & Geosciences, 2012, 43: 108-117.
CameronHighlands	Lim S L, Sagar B S D, Koo V C, et al. Morphological convexity measures for terrestrial basins derived from digital elevation models[J]. Computers & Geosciences, 2011, 37(9): 1285-1294.
W_Kharit	Milewski A, Sultan M, Yan E, et al. A remote sensing solution for estimating runoff and recharge in arid environments[J]. Journal of Hydrology, 2009, 373(1): 1-14.
ChiJiaWang ErhWu	Lin W T, Chou W C, Lin C Y, et al. Automated suitable drainage network extraction from digital elevation models in Taiwan's upstream watersheds[J]. Hydrological Processes, 2006, 20(2): 289-306.
Demeni	Getirana A C V, Bonnet M P, Rotunno Filho O C, et al. Improving hydrological information acquisition from DEM processing in floodplains[J]. Hydrological Processes, 2009, 23(3): 502-514.
Batchawana	Creed I F, Hwang T, Lutz B, et al. Climate warming causes intensification of the hydrological cycle, resulting in changes to the vernal and autumnal windows in a northern temperate forest[J]. Hydrological Processes, 2015, 29: 3519–3534.
Hailogou	Xing B, Liu Z, Liu G, et al. Determination of runoff components using path analysis and isotopic measurements in a glacier‐covered alpine catchment (upper Hailuogou Valley) in southwest China[J]. Hydrological Processes, 2015, 29, 3065–3073.
Bellebeek	Loosvelt L, Pauwels V, Verhoest N E C. On the significance of crop‐type information for the simulation of catchment hydrology[J]. Hydrological Processes, 2015, 29(6): 915-926.
WeiRiver	Zuo D, Xu Z, Peng D, et al. Simulating spatiotemporal variability of blue and green water resources availability with uncertainty analysis[J]. Hydrological Processes, 2015, 29(8): 1942-1955.
HunzaRiver	Biber K, Khan S D, Shah M T. The source and fate of sediment and mercury in Hunza River basin, Northern Areas, Pakistan[J]. Hydrological Processes, 2015, 29(4): 579-587.

Kasilian	Saghafian B, Meghdadi A R, Sima S. Application of the WEPP model to determine sources of run‐off and sediment in a forested watershed[J]. Hydrological Processes, 2015, 29(4): 481-497.
Lonquen	Stewart R D, Abou Najm M R, Rupp D E, et al. Hillslope run‐off thresholds with shrink–swell clay soils[J]. Hydrological Processes, 2015, 29(4): 557-571.
MicaCreek1 MicaCreek2	Du E, Link T E, Gravelle J A, et al. Validation and sensitivity test of the distributed hydrology soil‐vegetation model (DHSVM) in a forested mountain watershed[J]. Hydrological Processes, 2014, 28(26): 6196-6210.
NarayaniRiver	Neupane R P, Yao J, White J D. Estimating the effects of climate change on the intensification of monsoonal‐driven stream discharge in a Himalayan watershed[J]. Hydrological Processes, 2014, 28(26): 6236-6250.
WillowRiver Bowron	Zhang M, Wei X. Contrasted hydrological responses to forest harvesting in two large neighbouring watersheds in snow hydrology dominant environment: implications for forest management and future forest hydrology studies[J]. Hydrological Processes, 2014, 28(26): 6183-6195.
UpperDalya UpperTaninim	Peleg N, Shamir E, Georgakakos K P, et al. A framework for assessing hydrological regime sensitivity to climate change in a convective rainfall environment: a case study of two medium-sized eastern Mediterranean catchments, Israel[J]. Hydrology and Earth System Sciences, 2015, 19(1): 567-581.
SanFrancisco	Timbe E, Windhorst D, Crespo P, et al. Understanding uncertainties when inferring mean transit times of water trough tracer-based lumped-parameter models in Andean tropical montane cloud forest catchments[J]. Hydrology and Earth System Sciences, 2014, 18: 1503-1523.
HuaiRiver	Chen X, Hao Z, Devineni N, et al. Climate information based streamflow and rainfall forecasts for Huai River basin using hierarchical Bayesian modeling[J]. Hydrology and Earth System Sciences, 2014, 18(4): 1539-1548.
WarregoSC2 WarregoSC3 WarregoSC4	Alvarez-Garreton C, Ryu D, Western A W, et al. Improving operational flood ensemble prediction by the assimilation of satellite soil moisture: comparison between lumped and semi-distributed schemes[J]. Hydrology and Earth System Sciences, 2015, 19(4): 1659-1676.
Ishikari	Duan W L, He B, Takara K, et al. Modeling suspended sediment sources and transport in the Ishikari River basin, Japan, using SPARROW[J]. Hydrology and Earth System Sciences, 2015, 19(3): 1293-1306.
Limari	Scott C A, Vicuña S, Blanco-Gutiérrez I, et al. Irrigation efficiency and water-policy implications for river basin resilience[J]. Hydrology

	and Earth System Sciences, 2014, 18(4): 1339-1348.
Limpopo	Trambauer P, Werner M, Winsemius H C, et al. Hydrological drought forecasting and skill assessment for the Limpopo River basin, southern Africa[J]. Hydrology and Earth System Sciences, 2015, 19(4): 1695-1711.
Crocodile	Saraiva Okello A M L, Masih I, Uhlenbrook S, et al. Drivers of spatial and temporal variability of streamflow in the Incomati River basin[J]. Hydrology and Earth System Sciences, 2015, 19(2): 657-673.
Komati	
Haean	Shope C L, Maharjan G R, Tenhunen J, et al. Using the SWAT model to improve process descriptions and define hydrologic partitioning in South Korea[J]. Hydrology and Earth System Sciences, 2014, 18(2): 539-557.
Durance	Kuentz A, Mathevet T, Gailhard J, et al. Building long-term and high spatio-temporal resolution precipitation and air temperature reanalyses by mixing local observations and global atmospheric reanalyses: the ANATEM method[J]. Hydrology and Earth System Sciences, 2015, 19: 2717–2736.
Kabul	Wi S, Yang Y C E, Steinschneider S, et al. Calibration approaches for distributed hydrologic models in poorly gaged basins: implication for streamflow projections under climate change[J]. Hydrology and Earth System Sciences, 2015, 19(2): 857-876.
Garonne	Habets F, Philippe E, Martin E, et al. Small farm dams: impact on river flows and sustainability in a context of climate change[J]. Hydrology and Earth System Sciences, 2014, 18(10): 4207–4222.
Rhone	
Ebro	Peñas F J, Barquín J, Snelder T H, et al. The influence of methodological procedures on hydrological classification performance[J]. Hydrology and Earth System Sciences, 2014, 18(9): 3393-3409.
Olifants	Dabrowski J M. Applying SWAT to predict orthophosphate loads and trophic status in four reservoirs in the upper Olifants catchment, South Africa[J]. Hydrology and Earth System Sciences, 2014, 18: 2629–2643.
WeiRiver	Zhan C S, Jiang S S, Sun F B, et al. Quantitative contribution of climate change and human activities to runoff changes in the Wei River basin, China[J]. Hydrology and Earth System Sciences, 2014, 18(8): 3069-3077.
Bellever	Liu J, Han D. On selection of the optimal data time interval for real-time hydrological forecasting[J]. Hydrology and Earth System Sciences, 2013, 17(9): 3639-3659.
Brue	
Bishop_Hull	
Pomahaka	McMillan H K, Hreinsson E Ö, Clark M P, et al. Operational hydrological data assimilation with the recursive ensemble Kalman filter[J]. Hydrology and Earth System Sciences, 2013, 17(1): 21-38.
ColoradoR_Cameron	Rosenberg E A, Clark E A, Steinemann A C, et al. On the

SanJuanR_Bluff DoloresR_Cisco	contribution of groundwater storage to interannual streamflow anomalies in the Colorado River basin[J]. Hydrology and Earth System Sciences, 2013, 17(4): 1475-1491.
RioSanFrancisco RioSanFrancisco	Windhorst D, Waltz T, Timbe E, et al. Impact of elevation and weather patterns on the isotopic composition of precipitation in a tropical montane rainforest[J]. Hydrology and Earth System Sciences, 2013, 17(1): 409-419.
Rhine	Vorogushyn S, Merz B. Flood trends along the Rhine: the role of river training[J]. Hydrology and Earth System Sciences, 2013, 17(10): 3871-3884.
Urola	Cowpertwait P, Ocio D, Collazos G, et al. Regionalised spatiotemporal rainfall and temperature models for flood studies in the Basque Country, Spain[J]. Hydrology and Earth System Sciences, 2013, 17: 479–494.
KrishnaRiver	Surinaidu L, Bacon C G D, Pavelic P. Agricultural groundwater management in the Upper Bhima Basin, India: current status and future scenarios[J]. Hydrology and Earth System Sciences, 2013, 17(2): 507-517.
ClearCreek	Zhang H L, Wang Y J, Wang Y Q, et al. The effect of watershed scale on HEC-HMS calibrated parameters: a case study in the Clear Creek watershed in Iowa, US[J]. Hydrology and Earth System Sciences, 2013, 17(7): 2735-2745.
Baba Toachi SanPabloLaMana	Arias-Hidalgo M, Bhattacharya B, Mynett A E, et al. Experiences in using the TMPA-3B42R satellite data to complement rain gauge measurements in the Ecuadorian coastal foothills[J]. Hydrology and Earth System Sciences, 2013, 17(7): 2905
Monastir	Mascaro G, Piras M, Deidda R, et al. Distributed hydrologic modeling of a sparsely monitored basin in Sardinia, Italy, through hydrometeorological downscaling[J]. Hydrology and Earth System Sciences, 2013, 17(10): 4143-4158.
Gard	Braud I, Ayral P A, Bouvier C, et al. Multi-scale hydrometeorological observation and modelling for flash-flood understanding[J]. Hydrology and Earth System Sciences, 2014, 18(9): 3733-3761.
Zhanghe	Xie X, Meng S, Liang S, et al. Improving streamflow predictions at ungauged locations with real-time updating: application of an EnKF-based state-parameter estimation strategy[J]. Hydrology and Earth System Sciences, 2014, 18(10): 3923
Davidson	Yang J, Castelli F, Chen Y. Multiobjective sensitivity analysis and optimization of distributed hydrologic model MOBIDIC[J]. Hydrology and Earth System Sciences, 2014, 18(10): 4101-4112.
Lienz	He Z H, Parajka J, Tian F Q, et al. Estimating degree-day factors from MODIS for snowmelt runoff modeling[J]. Hydrology and Earth System Sciences, 2014, 18(12): 4773-4789.

Cheakamus	Bourdin D R, Nipen T N, Stull R B. Reliable probabilistic forecasts from an ensemble reservoir inflow forecasting system[J]. Water Resources Research, 2014, 50(4): 3108-3130.
YbbsRiver	Ceola S, Bertuzzo E, Singer G, et al. Hydrologic controls on basin‐scale distribution of benthic invertebrates[J]. Water Resources Research, 2014, 50(4): 2903-2920.
Susquehanna	Giuliani M, Herman J D, Castelletti A, et al. Many‐objective reservoir policy identification and refinement to reduce policy inertia and myopia in water management[J]. Water Resources Research, 2014, 50(4): 3355-3377.
NorsmindeFjord	He X, Koch J, Sonnenborg T O, et al. Transition probability‐based stochastic geological modeling using airborne geophysical data and borehole data[J]. Water Resources Research, 2014, 50(4): 3147-3169.
SouthPark	Ball L B, Caine J S, Ge S. Controls on groundwater flow in a semiarid folded and faulted intermountain basin[J]. Water Resources Research, 2014, 50(8): 6788-6809.
KernRiver	Girotto M, Cortés G, Margulis S A, et al. Examining spatial and temporal variability in snow water equivalent using a 27 year reanalysis: Kern River watershed, Sierra Nevada[J]. Water Resources Research, 2014, 50(8): 6713-6734
UpperRhone	Bordoy R, Burlando P. Stochastic downscaling of climate model precipitation outputs in orographically complex regions: 2. Downscaling methodology[J]. Water Resources Research, 2014, 50(1): 562-579.
Pettit	Mallard J, McGlynn B, Covino T. Lateral inflows, stream‐groundwater exchange, and network geometry influence stream water composition[J]. Water Resources Research, 2014, 50(6): 4603-4623.
Stanley	
Alturas	
Burdekin	Bainbridge Z T, Lewis S E, Smithers S G, et al. Fine‐suspended sediment and water budgets for a large, seasonally dry tropical catchment: Burdekin River catchment, Queensland, Australia[J]. Water Resources Research, 2014, 50(11): 9067-9087.
Blackwater	Cooper R J, Krueger T, Hiscock K M, et al. Sensitivity of fluvial sediment source apportionment to mixing model assumptions: A Bayesian model comparison[J]. Water Resources Research, 2014, 50(11): 9031-9047.
OitaRiver	Higashino M, Stefan H G. Modeling the effect of rainfall intensity on soil‐water nutrient exchange in flooded rice paddies and implications for nitrate fertilizer runoff to the Oita River in Japan[J]. Water Resources Research, 2014, 50(11): 8611-8624.
Zwalm	Guingla P, Douglas A, Keyser R, et al. Improving particle filters in rainfall‐runoff models: Application of the resample‐move step and the ensemble Gaussian particle filter[J]. Water Resources

	Research, 2013, 49(7): 4005-4021.
XianNanGou	Ichoku C, Karnieli A, Verchovsky I. Application of fractal techniques to the comparative evaluation of two methods of extracting channel networks from digital elevation models[J]. Water Resources Research, 1996, 32(2): 389-399.
Hodder	Bulygina N, Ballard C, McIntyre N, et al. Integrating different types of information into hydrological model parameter estimation: Application to ungauged catchments and land use scenario analysis[J]. Water Resources Research, 2012, 48(6), W06519.
NorthEsk	Capell R, Tetzlaff D, Soulsby C. Can time domain and source area tracers reduce uncertainty in rainfall‐runoff models in larger heterogeneous catchments?[J]. Water Resources Research, 2012, 48(9), W09544.
SouthForkNew	Gu C, Anderson W, Maggi F. Riparian biogeochemical hot moments induced by stream fluctuations[J]. Water Resources Research, 2012, 48(9), W09546.
LiWuRiver	Huang Jr C, Yu C K, Lee J Y, et al. Linking typhoon tracks and spatial rainfall patterns for improving flood lead time predictions over a mesoscale mountainous watershed[J]. Water Resources Research, 2012, 48(9), W09540.
AlzetteEttel	Krier R, Matgen P, Goergen K, et al. Inferring catchment precipitation by doing hydrology backward: A test in 24 small and mesoscale catchments in Luxembourg[J]. Water Resources Research, 2012, 48(10), W10525.
MessPontpierre	
Colpach	
RoudbachPlaten	
Burdekin	Kuhnert P M, Henderson B L, Lewis S E, et al. Quantifying total suspended sediment export from the Burdekin River catchment using the loads regression estimator tool[J]. Water Resources Research, 2012, 48(4), W04533.
Cajon	Mendoza P A, McPhee J, Vargas X. Uncertainty in flood forecasting: A distributed modeling approach in a sparse data catchment[J]. Water Resources Research, 2012, 48(9), W09532.
Tenderfoot	Payn R A, Gooseff M N, McGlynn B L, et al. Exploring changes in the spatial distribution of stream baseflow generation during a seasonal recession[J]. Water Resources Research, 2012, 48(4), W04519.
Wattenbach	Rogger M, Pirkl H, Viglione A, et al. Step changes in the flood frequency curve: Process controls[J]. Water Resources Research, 2012, 48(5), W05544.
Weerbach	
UpperRhone	Leite Ribeiro M, Blanckaert K, Roy A G, et al. Hydromorphological implications of local tributary widening for river rehabilitation[J]. Water Resources Research, 2012, 48(10), W10528.
WhiteRiver	Steinschneider S, Polebitski A, Brown C, et al. Toward a statistical framework to quantify the uncertainties of hydrologic response under climate change[J]. Water Resources Research, 2012, 48(11),

	W11525.
AmericanRiver	Woldemichael A T, Hossain F, Pielke R, et al. Understanding the impact of dam‐triggered land use/land cover change on the modification of extreme precipitation[J]. Water Resources Research, 2012, 48(9), W09547.
MahanadiRiver	Kannan S, Ghosh S. A nonparametric kernel regression model for downscaling multisite daily precipitation in the Mahanadi basin[J]. Water Resources Research, 2013, 49(3): 1360-1385.
Nujiang	Kibler K M, Tullos D D. Cumulative biophysical impact of small and large hydropower development in Nu River, China[J]. Water Resources Research, 2013, 49(6): 3104-3118.
LuckyHills	Sivandran G, Bras R L. Dynamic root distributions in ecohydrological modeling: A case study at Walnut Gulch Experimental Watershed[J]. Water Resources Research, 2013, 49(6): 3292-3305.
Sacramento	Ficklin D L, Stewart I T, Maurer E P. Effects of climate change on stream temperature, dissolved oxygen, and sediment concentration in the Sierra Nevada in California[J]. Water Resources Research, 2013, 49(5): 2765-2782.
Feather	
ClintonRiver	Shen C, Niu J, Phanikumar M S. Evaluating controls on coupled hydrologic and vegetation dynamics in a humid continental climate watershed using a subsurface‐land surface processes model[J]. Water Resources Research, 2013, 49(5): 2552-2572.
HJA	Garcia E S, Tague C L, Choate J S. Influence of spatial temperature estimation method in ecohydrologic modeling in the Western Oregon Cascades[J]. Water Resources Research, 2013, 49(3): 1611-1624.
UpperGuadiana	Loon A F, Lanen H A J. Making the distinction between water scarcity and drought using an observation‐modeling framework[J]. Water Resources Research, 2013, 49(3): 1483-1502.
HaiRiver	Jia Y, Ding X, Wang H, et al. Attribution of water resources evolution in the highly water‐stressed Hai River Basin of China[J]. Water Resources Research, 2012, 48(2), W02513.
Cordevole	Rigon E, Comiti F, Lenzi M A. Large wood storage in streams of the Eastern Italian Alps and the relevance of hillslope processes[J]. Water Resources Research, 2012, 48(1), W01518.
SalmonRiver	Yearsley J. A grid‐based approach for simulating stream temperature[J]. Water Resources Research, 2012, 48(3), W03506.
CedoCaka	Zhang G, Xie H, Yao T, et al. Snow cover dynamics of four lake basins over Tibetan Plateau using time series MODIS data (2001–2010)[J]. Water Resources Research, 2012, 48(10), W10529.
YamzhogYumCo	