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   This paper investigates changes in storm runoff resulting from the transformation of previously rural landscapes into peri-urban areas. Two adjacent catchments (~5km²) located within the town of Swindon...

2. A review of drought concepts
   14 September 2010
   Ashok K. Mishra | Vijay P. Singh
   Owing to the rise in water demand and looming climate change, recent years have witnessed much focus on global drought scenarios. As a natural hazard, drought is best characterized by multiple climatological...

3. Projections of the Ganges–Brahmaputra precipitation—Downscaled from GCM predictors
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   Md Shahriar Pervez | Geoffrey M. Henebry
   Downscaling Global Climate Model (GCM) projections of future climate is critical for impact studies. Downscaling enables use of GCM experiments for regional scale impact studies by generating regionally...

4. Flood risk and flood management
   1 October 2002
   Erich J. Plate
   Risk management has been established as a well defined procedure for handling risks due to natural, environmental or man made hazards, of which floods are representative. Risk management has been discussed...

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   Qi Zhang | Xu-chun Ye | Adrian D. Werner | Yun-liang Li | Jing Yao | Xiang-hu Li | Chong-yu Xu
   Changes in lake hydrological regimes and the associated impacts on water supplies and ecosystems are internationally recognized issues. During the past decade, the persistent dryness of Poyang Lake...

6. Incorporating the effects of increased atmospheric CO2 in watershed model projections of climate change impacts
   26 May 2014
   Jonathan B. Butcher | Thomas E. Johnson | Daniel Nover | Saumya Sarkar
   Simulation models such as the Hydrologic Simulation Program -- FORTRAN (HSPF) and Soil–Water Assessment Tool (SWAT) are frequently used to project the responses of watershed processes to climate change,...

7. Quantifying the relative impact of climate and human activities on streamflow
   16 July 2014
   Kuk-Hyun Ahn | Venkatesh Merwade
   The objective of this study is to quantify the role of climate and human impacts on streamflow conditions by using historical streamflow records, in conjunction with trend analysis and hydrologic modeling....

8. On the applicability of unimodal and bimodal van Genuchten–Mualem based models to peat and other organic soils under evaporation conditions
   16 July 2014
   Ulrich Dettmann | Michel Bechtold | Enrico Frahm | Bärbel Tiemeyer
   Soil moisture is one of the key parameters controlling biogeochemical processes in peat and other organic soils. To understand and accurately model soil moisture dynamics and peatland hydrological functioning...
9. Application of high-resolution spectral absorbance measurements to determine dissolved organic carbon concentration in remote areas
19 September 2014
Armine Avagyan | Benjamin R.K. Runkle | Lars Kutzbach
Accurate quantification of dissolved organic carbon (DOC) in surface and soil pore waters is crucial for understanding changes in water resources under the influence of climate and land use changes....

10. Applications of hybrid wavelet–Artificial Intelligence models in hydrology: A review
6 June 2014
Vahid Nourani | Aida Hosseini Baghanam | Jan Aistarowski | Ozgur Kisi
Accurate and reliable water resources planning and management to ensure sustainable use of watershed resources cannot be achieved without precise and reliable models. Notwithstanding the highly stochastic...

11. Uncertainties in SWAT extreme flow simulation under climate change
16 July 2014
Xujie Zhang | Yue-Ping Xu | Guangtao Fu
Uncertainty in climate change impact analysis has been widely recognized. Analyzing it becomes an important task particularly when impact analysis results are used for adaptation purposes. A methodology...

12. Drought modeling – A review
6 June 2011
Ashok K. Mishra | Vijay P. Singh
In recent years droughts have been occurring frequently, and their impacts are being aggravated by the rise in water demand and the variability in hydro-meteorological variables due to climate change....

13. Beneath the surface of global change: Impacts of climate change on groundwater
5 August 2011
Timothy R. Green | Makoto Taniguchi | Henk Kooi | Jason J. Gurdak | Diana M. Allen | Kevin M. Hiscock | Holger Treidel | Alice Aureli
Global change encompasses changes in the characteristics of inter-related climate variables in space and time, and derived changes in terrestrial processes, including human activities that affect the...

14. Identifying priorities for nutrient mitigation using river concentration–flow relationships: The Thames basin, UK
19 September 2014
Michael J. Bowes | Helen P. Jarvie | Pamela S. Naden | Gareth H. Old | Peter M. Scarlett | Colin Roberts | Linda K. Armstrong | Sarah A. Harman | Heather D. Wickham | Adrian L. Collins
The introduction of tertiary treatment to many of the sewage treatment works (STW) across the Thames basin in southern England has resulted in major reductions in river phosphorus (P) concentrations....

15. On the spatio-temporal dynamics of soil moisture at the field scale
4 August 2014
In this paper, we review the state of the art of characterizing and analyzing spatio-temporal dynamics of soil moisture content at the field scale. We discuss measurement techniques that have become...

16. Evaluation of 1D and 2D numerical models for predicting river flood inundation
1 November 2002
M.S. Horritt | P.D. Bates
1D and 2D models of flood hydraulics (HEC-RAS, LISFLOOD-FP and TELEMAC-2D) are tested on a 60km reach of the river Severn, UK. Synoptic views of flood extent from radar remote sensing satellites have...

17. Comparing ensemble projections of flooding against flood estimation by continuous simulation
16 April 2014
Andrew Smith | Jim Freer | Paul Bates | Christopher Sampson
Climate impact studies focused on the projection of changing flood risk are increasingly utilized to inform future flood risk policy. These studies typically use the output from global (GCMs) and regional...

18. Equifinality, data assimilation, and uncertainty estimation in mechanistic modelling of complex environmental systems using the GLUE methodology
1 August 2001
Keith Beven | Jim Freer

It may be endemic to mechanistic modelling of complex environmental systems that there are many different model structures and many different parameter sets within a chosen model structure that may...

19. Potential evapotranspiration-related uncertainty in climate change impacts on river flow: An assessment for the Mekong River basin
14 March 2014
J.R. Thompson | A.J. Green | D.G. Kingston

Six MIKE SHE models of the Mekong are developed, each employing potential evapotranspiration (PET) derived using alternative methods: Blaney–Criddle (BC), Hamon (HM), Hargreaves–Samani (HS), Linacre...

20. Trend detection in hydrologic data: The Mann–Kendall trend test under the scaling hypothesis
1 February 2008
Khaled H. Hamed

The subject of trend detection in hydrologic data has received a great deal of attention lately, especially in connection with the anticipated changes in global climate. However, climatic variability....

21. Evaluating the effect of persistence on long-term trends and analyzing step changes in streamflows of the continental United States
19 September 2014
Soumya Sagarkia | Ajay Kair | Sajjad Ahmad

Streamflow is a very good indicator of long-term hydroclimatic changes. From a water management perspective, the identification of gradual (trend) and abrupt (shift) changes in streamflow are important...

22. Single event time series analysis in a binary karst catchment evaluated using a groundwater model (Lurbach system, Austria)
16 April 2014
C. Mayaud | T. Wagner | R. Benischke | S. Birk

The Lurbach karst system (Styria, Austria) is drained by two major springs and replenished by both autogenic recharge from the karst massif itself and a sinking stream that originates in low permeable...

23. Evidence for intensification of the global water cycle: Review and synthesis
15 March 2006
Thomas G. Huntington

One of the more important questions in hydrology is: if the climate warms in the future, will there be an intensification of the water cycle and, if so, the nature of that intensification? There is...

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Anna Menció | Marta Galán | Dani Boix | Josep Mas-Pla

In Mediterranean areas, groundwater contributions are fundamental to maintain stream flow, especially during dry periods. Since groundwater withdrawal may affect stream discharge, understanding the...

25. Crossing-scale hydrological impacts of urbanization and climate variability in the Greater Chicago Area
19 September 2014
Charles Rougé | Ximing Cai

This paper uses past hydrological records in Northeastern Illinois to disentangle the combined effects of urban development and climatic variability at different spatial scales in the Greater Chicago...