How to get your hydrology paper published – dealing with editors, reviews and revisions

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Outline

1. Introduction to me
2. Quick pointer to Young Hydrologic Society series on "How to write a scientific paper in Hydrology"
3. Recap of the Publishing Process
4. The Review Process in More Detail
   - Submission letter (to Editor)
   - Reading reviews (including Editor's letter)
   - Responding to Reviews

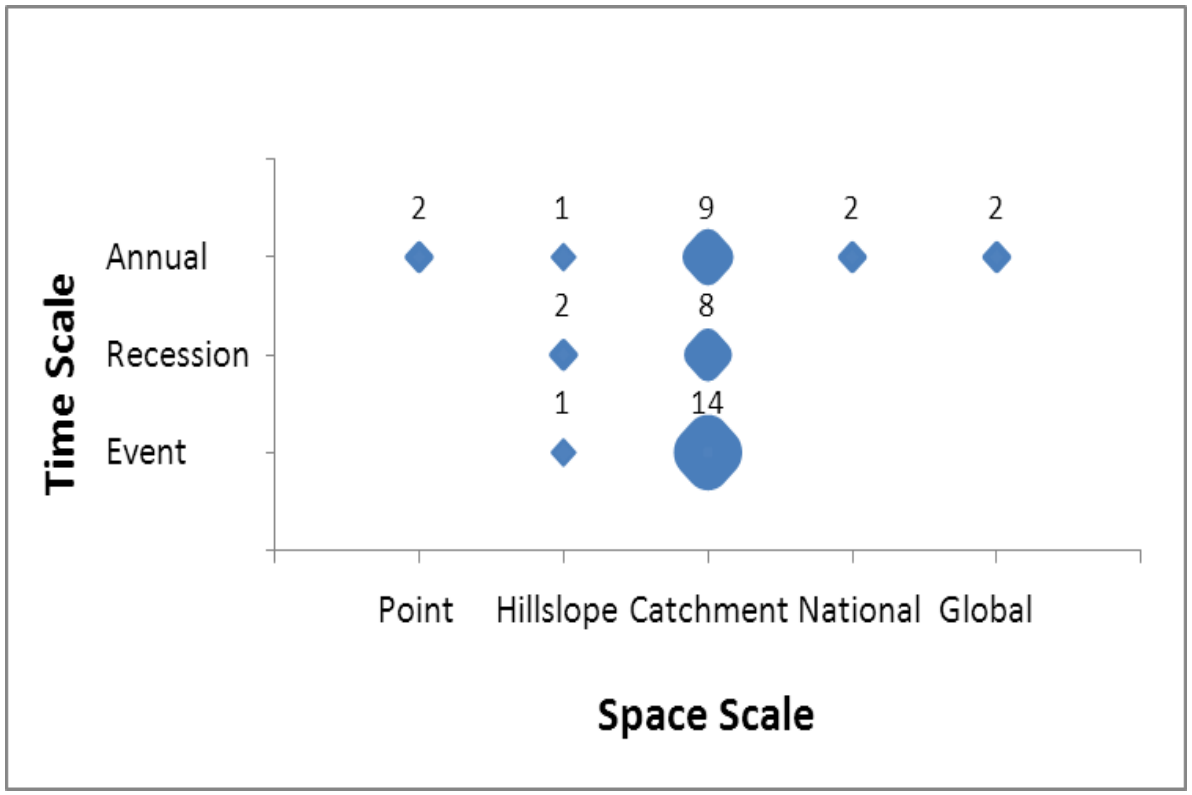
1. Who Is This Guy?

Worked Mostly in New Zealand

- 1981-5: BSc (Maths) & MComm (Operations Research) from University of Canterbury
- 1986-92: Applied mathematician/hydrologist in govt research lab of Ministry of Works
- 1993-96: PhD at Univ. W. Australia with Siva Sivapalan "A Search for Fundamental Scales in Runoff Generation: Combined Field and Modelling Approach"
- 1996-2012: Hydrologist at NIWA (like previous job)
- 2013- : Dept of Civil Engineering, University of Bristol

What Sort of Research?

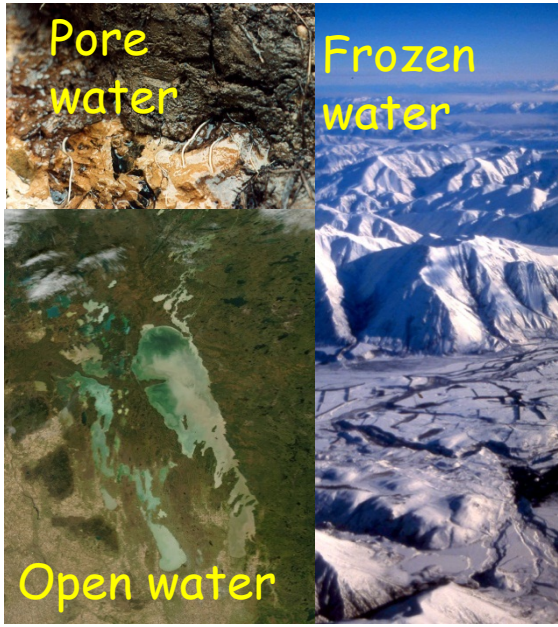
- Field studies, Modelling studies, Theory
- Predominantly surface water hydrology

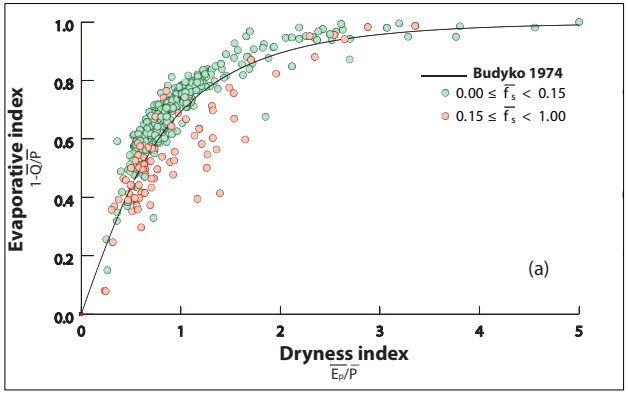


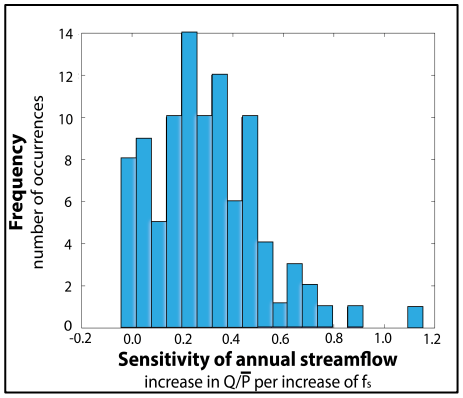
[This 2012 graphic is a few years out of date, but the photo is much older!]

Classification & Similarity in Hydrology

- Proposal for global classification of hydrology based on frozen water, open water, pore water
- Distinctive similarity-based approach for each class, with dimensionless numbers to predict hydrological response at a variety of timescales







Berghuijs et al. (2014). A precipitation shift from snow towards rain leads to a decrease in streamflow. *Nature Climate Change*

McDonnell, J. J. and R. A. Woods (2004). "On the need for catchment classification." J.Hydrol.
Wagener et al (2007). “Catchment Classification and Hydrologic Similarity” Geography Compass.
Woods, R. A. (2009). "Analytical Model of … Snow Hydrology …" Advances in Water Resources

Spatially-Distributed Observations

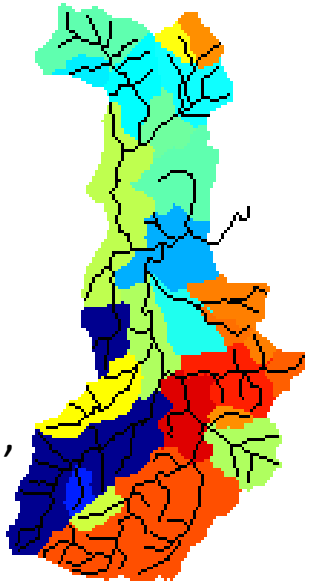
MARVEX

- Continuous Data:

28 nested flow recorders
13 raingauges
1 weather radar
36 soil moisture sensors

- Campaigns:

Soil moisture, evaporation, small weather radar, hillslope tracers



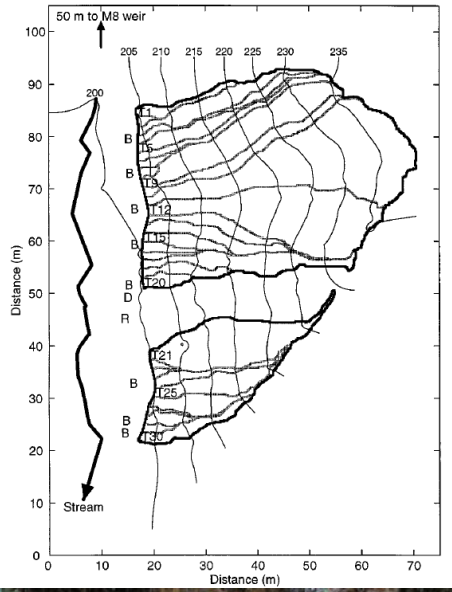
Maimai

- Continuous Data:

30 subsurface flow trenches

- Campaigns

e.g. Tracer expts



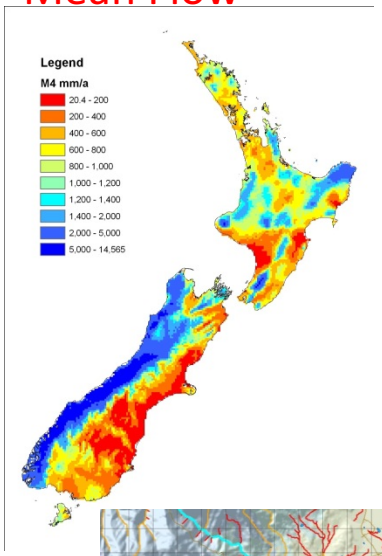
Woods et al (2001). Water Resources Monographs.

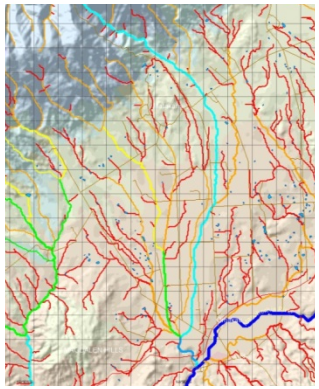
Woods and Rowe, 1996, JHydrol(NZ)

National-Scale Water Resources Mapping

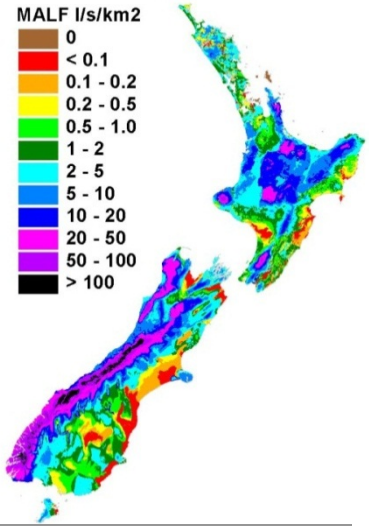
- Linked estimates of mean flow, monthly flow, low flow, floods, flow duration curves, on a common digital river network

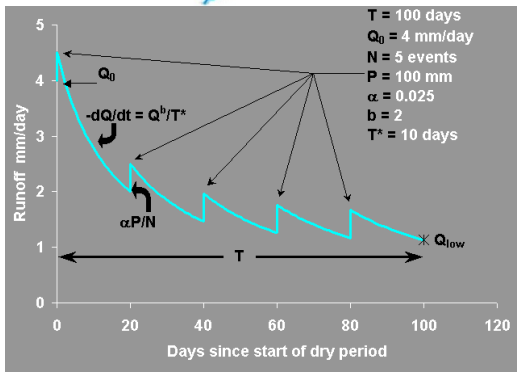
Mean Flow



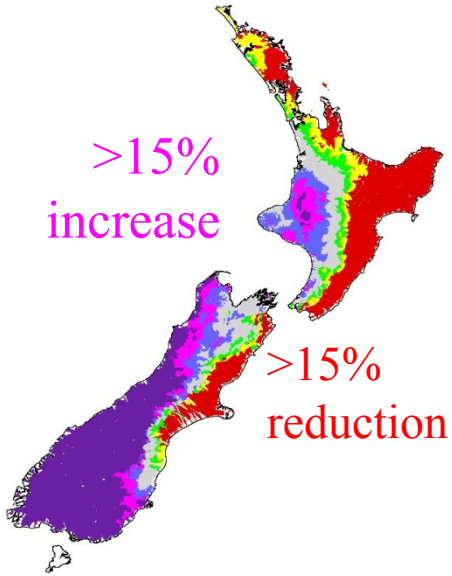


Low Flow



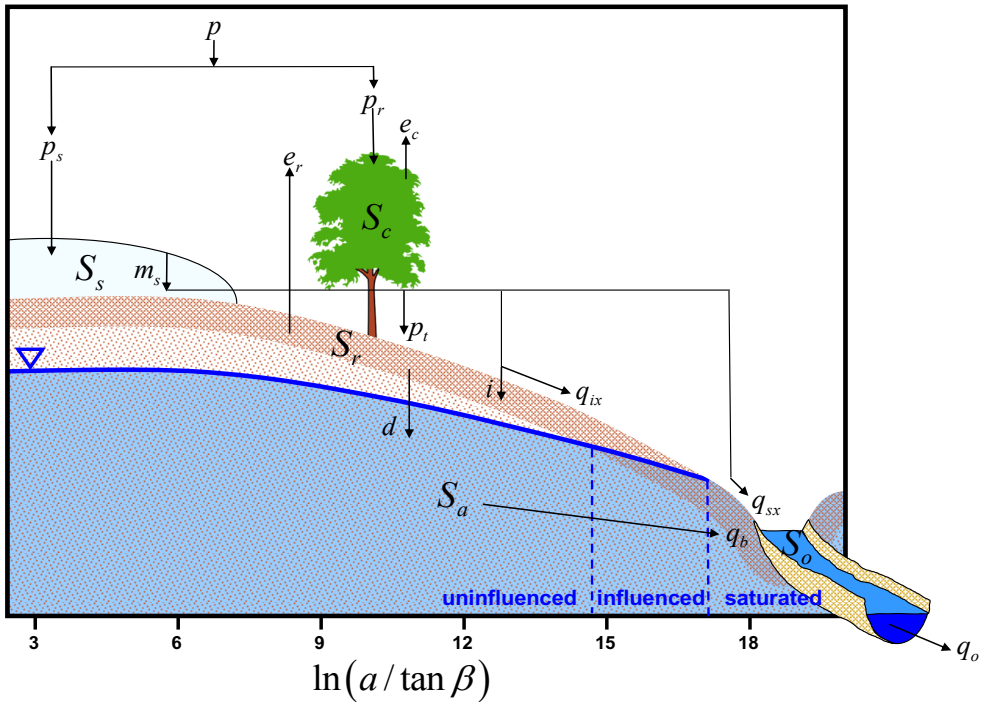


Climate Change Impacts



Booker and Woods (2013), J.Hydrol

National-scale Hydrological Modelling



TopNet: spatially distributed hydrological + snow model
Here: *a priori* parameter values – no calibration
Hourly timesteps for 3 decades
35,000 sub-catchments of ~10 km^2 each
Water resource estimation, climate change, land use change

Clark et al (2008) Advances in Water Resources

Does He Know about Publishing?

- Published about 60 papers in refereed journals
  - Published in a range of good journals from Nature Climate Change to Journal of Hydrology (New Zealand)
  - H-index = 27 (Web of Science).
  - 1400 citations over the last 5 years (WoS)
  - My most-cited paper (300+) is not in WoS
  - Six papers currently ranked in top 1% of their field (WoS)
- Journal editor
  - Co-Editor of Hydrological Sciences Journal (2016-)
  - Associate Editor for
    HESS (2010-)
    Surveys in Geophysics (2013-)
    NZ Journal of Marine and Freshwater Research (2010-16)

2. Previously, on “How to Write a Paper”

https://younghs.com/readings/writing/

- 2009 Jeff McDonnell
- 2010 Demetris Koutsoyiannis
- 2011 Günter Blöschl
- 2013 Niko Verhoest
- 2014 Bettina Schaefli

Earlier: broad in scope; more recent: more specific

- 2015 Keith Beven – how to write a benchmark paper
- 2016 András Bárdossy – how to review a paper

3. PUBLISHING – AN OVERVIEW (BASED MAINLY ON BLOESCHL'S NOTES, & INPUT FROM THORSTEN WAGENER)

Why is publishing important for you?

In academia you are mainly judged by the quality and quantity of your journal papers. Note: Do not bother with conference proceedings.

Main bibliometric criteria:

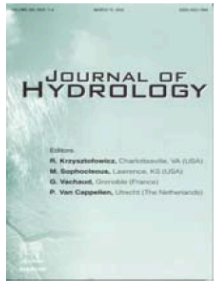
- Number of papers (not very useful, but often used)
- Quality of the journals your are publishing (ISI Impact factor)
- Number of citations you get for your papers

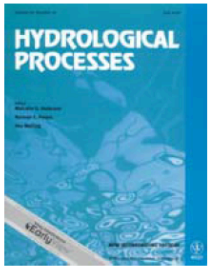
➔ Choice of journal?

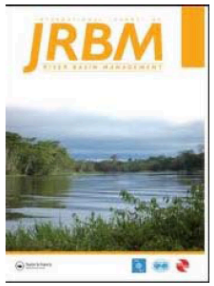
➔ How to get cited?

Top hydrology journals (by ISI impact factor)

Journal	*Impact factor* (2014)
Hydrol Earth Syst Sc	3.5
Water Resour Res	3.7
J Hydrol	3.1
Adv Water Resour	3.4
J Contam Hydrol	2.2
Vadose Zone J	1.8
Hydrol Process	2.7
Ground Water	2.3
Hydrolog Sci J	1.5
Hydrol Res	1.6







Note: These are all very good journals.

Identify the right journal, e.g.

- Hydrol Earth Syst Sc → fast, transparent
- Water Resour Res → methods
- J Hydrol → case studies
- Adv Water Resour → methods (numerical)
- Hydrol Process → field studies
- Hydrolog Sci J → developing countries

How to get cited

1. Do relevant research!
2. Do relevant research!!
3. Do relevant research!!!
4. Communicate your research well (paper, talks).
5. …

How to get cited

- Tell reader something that is **useful** to him/her.
  Example: New method that is likely to be used such as van Genuchten infiltration equation
- Chose **topic** that is of much interest (if you can). Example: Estimating runoff model parameters in ungauged catchment related to GIS (browse Scopus or ISI Web for citations).
- Chose appealing **title**: Science question is often good title.
  Example: Is spatial distance a better similarity measure than catchment attributes?
- Perhaps consider to write a **review paper**. These are very well cited but a lot of work
- **Promote** papers through talks and posters, email sig, Twitter ..

The editorial/review process

(1) Submit paper to journal

(2) Paper is sent out by editor to 2-3 reviewers

(3) Editor gets back to you with the (anonymous) review comments

(4a) Respond to review comments and revise paper

(4b) Paper was rejected

(5a) Paper will possibly be re-reviewed with re-revision

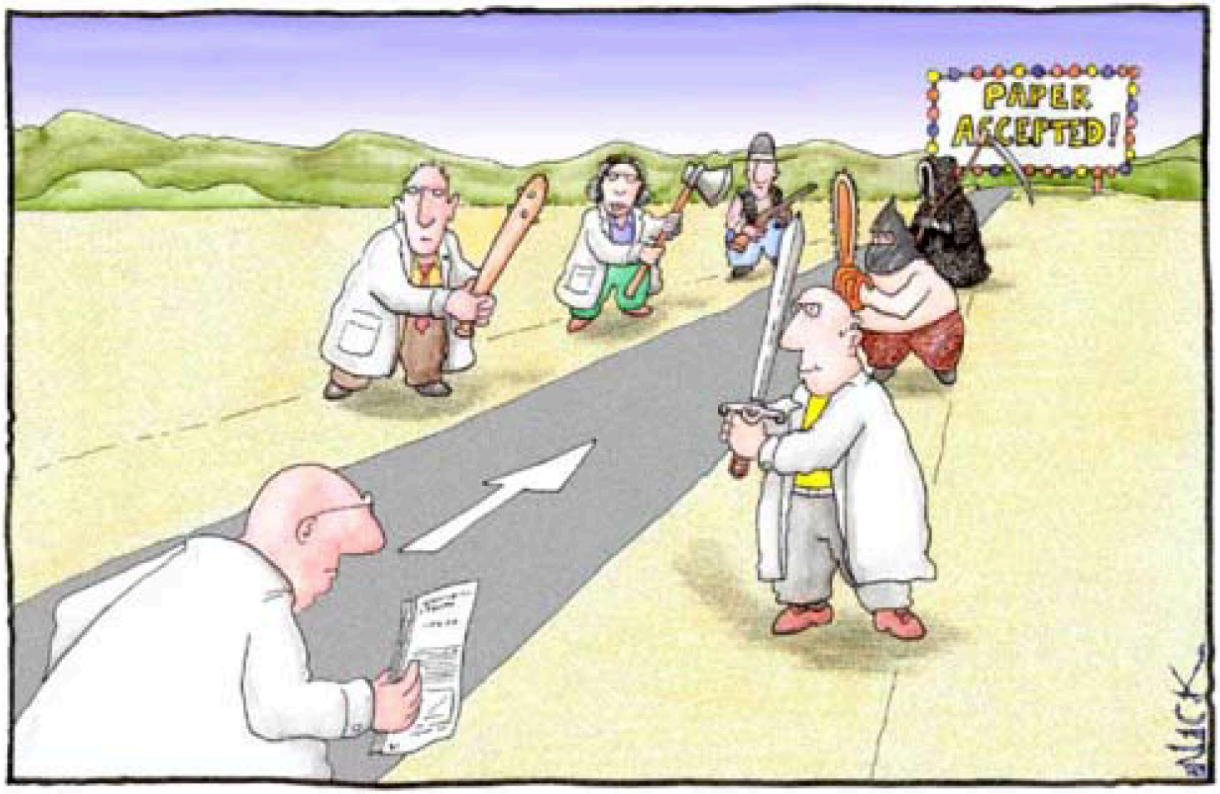
(6a) Paper accepted

(7a) Type setting, you need to check proofs

(8a) Paper published in journal

Note: Entire process may take 0.5 – 2 years

The review process



From plazamoyua.wordpress.com/2009/11/16/cambio-climatico-450-estudios-peer-reviewed/

Most editor decisions are:

Minor changes

Major changes

Reject

How to deal with reviews

Possible concerns of reviewers:

- Clarification, language
- Methodological problems
- Science question / relevance is unclear

(Strong) recommendation: **You** need to write manuscript in the way reviewers understand it. If they do not understand it, change the paper rather than argue with them.

Note: There are exceptions of poor reviews. Also, reviews are often not well correlated.

How to deal with reviews (continued)

Recommendation: Take the reviewers' concerns seriously.

Their task is (a) **screening** and (b) **improving** your paper.

Papers can always be improved!

Prepare a detailed list of how you respond to **each** review comment (and send it to Editor along with revision).

If you disagree with a review comment you may say so and not change this aspect of your paper but explain why. Do not argue but state your view.

How to deal with rejections

How to deal with rejections (continued)

(1) Redo the analysis in a way suggested by the reviewers, more data, changed methodology, …

(2) Possibly combine 2 pieces of research to make a more substantial contribution.

(3) Chose a different journal. **Caveat:** Do not submit the paper to a different journal unchanged! - Chances are it goes to the same reviewers - Take advantage of what the reviewers told you

(4) Try something else if you are not convinced about paper

(5) Don't give up if your are convinced though!! Some of the most influential papers have been rejected at first.

Example: Beven (1989, J. Hydrology)

Once your paper is published. Have a party!

forgottenclassicsofyesteryear.blogspot.com

END OF OVERVIEW

4. STEP-BY-STEP PUBLISHING

(1) Submit paper to journal

(2) Paper is sent out by editor to 2-3 reviewers

(3) Editor gets back to you with the (anonymous) review comments

(4a) Respond to review comments and revise paper
(4b) Paper was rejected

(5a) Paper will possibly be re-reviewed with re-revision

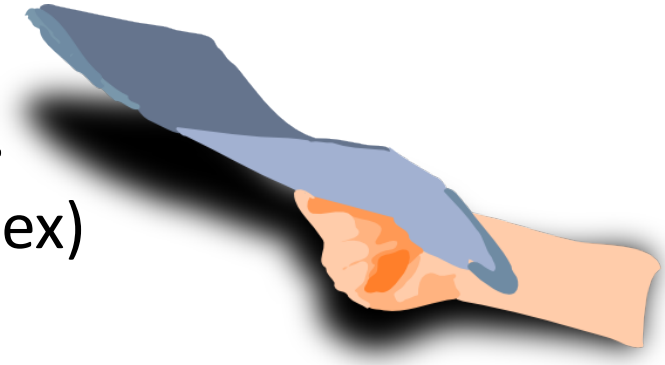
(6a) Paper accepted

(7a) Type setting, you need to check proofs

(8a) Paper published in journal

Note: Entire process may take 0.5 – 2 years

1. Submit paper



- Follow the uploading instructions, e.g.
  - Document type (e.g. Word, pdf, Latex)
  - Line numbering, line spacing
  - Resolution and quality of figures, in separate files?
  - You may be asked for potential reviewer names
- Write a cover letter
  - Key points to convince the editor to take your paper
  - Reassurance that it has not been submitted elsewhere
  - Notes on any previous versions (it's now common to reject & invite resubmission)

What are Editors looking for?

- Papers that fit the journal's scope (so read the scope!)
  - E.g. if you're sending a <rainfall> paper to a hydrology journal, explain in your letter (& the paper) why your <rainfall> work is important to hydrology
- Papers that deserve review are:
  - Significant (this is very journal-specific)
  - Original (intellectual content & un-plagiarised)
  - Sound in their methods – make initial assessment
  - Coherently written – can I follow it when I skim?

Journal

Hydrological Sciences Journal ›

Example of Scope

This journal

› Aims and scope

Aims and scope

- the hydrological cycle on the Earth
- surface water, groundwater, snow and ice, in all their physical, chemical and biological processes, their interrelationships, and their relationships to geographical factors, atmospheric processes and climate, and Earth processes including erosion and sedimentation
- hydrological extremes and their impact
- measurement, mathematical representation and computational aspects of hydrological processes
- hydrological aspects of the use and management of water resources and their change under the influence of human activity
- water resources systems, including the planning, engineering, management and economic aspects of applied hydrology

2. Sent out for review

- In many journals, your paper is assigned to an Associate Editor
- AE will identify potential reviewers and ask them (1-2 weeks). Some reviewers will decline.
- [If it's a revised version, AE will ask same reviewers]
- Each reviewer typically has 4 weeks to write review
- AE waits for at least 2 reviews to come back.
- People are late …

Reviewer Recommendation

Hydrology and Earth System Sciences
An Interactive Open Access Journal of the European Geosciences Union

Report #1

Submitted on 17 Feb 2014
Referee #1: Dr. Bettina Schaefli, bettina.schaefli@epfl.ch

Notes for the Submission of Interactive Comments

Anonymous: Yes **No**

Formal Manuscript Rating and Recommendation to the Editor (non-public)

1) Scientific Significance Does the manuscript represent a substantial contribution to scientific progress within the scope of this journal (substantial new concepts, ideas, methods, or data)?	Excellent Good **Fair** Poor
2) Scientific Quality Are the scientific approach and applied methods valid? Are the results discussed in an appropriate and balanced way (consideration of related work, including appropriate references)?	Excellent **Good** Fair Poor
3) Presentation Quality Are the scientific results and conclusions presented in a clear, concise, and well structured way (number and quality of figures/tables, appropriate use of English language)?	Excellent **Good** Fair Poor

For final publication, the manuscript should be

accepted as is

accepted subject to **technical corrections**

accepted subject to **minor revisions**

reconsidered after major revisions

I would like to review the revised paper

I would NOT be willing to review the revised paper

rejected

Please note that this rating only refers to this version of the manuscript!

3. Review Comments

- The AE will assess the reviews (often conflicting) and recommend a decision to Editor.
- The Editor will generally send you a short note:
  - overall decision (accept, minor/major revisions, reject and resubmit, reject),
  - possibly a few specific comments of their own
  - an instruction to address the review comments
- There will be a deadline for you to submit the revision
- You almost never get “accept” on the first time through

Review Example (from HESS)

The general idea of this paper is to separate the model parameters into two groups: One reflecting water balance and the other the runoff dynamics. The water balance parameters are transformed into a new variable "n". The "n" parameter is determined on ungauged basins (offline) and the dynamics parameters are determined by regional calibration. The authors show that the dynamical model parameters are good even when transferred to very different catchments.

Overview

While I like the innovative idea of separating the parameters into 2 groups and attempting to identify from where the model skill originates, I have noted many problems with the methodology, discussion and setting of the work performed. My recommendation is "Major revision".

Evaluation

There are two main issues with the paper:

1- The authors do not do a sufficient job putting their work in context. The literature review is outdated and not very useful in setting the paper in the current context.
2- The discussion lacks in depth. Results should be compared to other studies and discussed. As o now, the discussion is mainly a recap of the results.

Main Points

Also, in many places, English proofreading should be performed as some sentences are difficult to understand and interpret.

Review Example (continued)

Specific questions / issues:

How does the loss in performance compare to other regionalization methods? Is the robustness gained worth it if many catchments offer suboptimal performance compared to a multi-donor regionalization approach?

How does catchment similarity impact performance in calibration/validation? The paper states that the climate data dominates over catchment characteristics, but can the authors quantify the correlation or relationship to catchment descriptors?

Table 1: I do not feel that relative humidity is an acceptable physical catchment descriptor. Perhaps change to "physioclimatic" or something of the sorts to indicate that there is also climate data taken into account. Also, using base flow index as a descriptor while working with ungauged basins seems like it is cheating. Perhaps clearly indicate that catchment descriptors are not used for the parameter transfer. In this manner there will be no conflict.

Introduction:

References are dating, lots of research has been done in the past few years regarding this subject.

4a Responding to Review

- Your response should address the comment directly, and also say how you plan to alter the manuscript as a result
- Be polite
- Write VERY clearly to avoid misunderstanding

1- The authors do not do a sufficient job putting their work in context. The literature review is outdated and not very useful in setting the paper in the current context.

Thanks for the comments. We have partly rewritten the literature review of this manuscript. The revised version contains an updated introduction, referring to the ongoing progress of the study for prediction in ungauged basins and the regional calibration.

2- The discussion lacks in depth. Results should be compared to other studies and discussed. As now, the discussion is mainly a recap of the results.

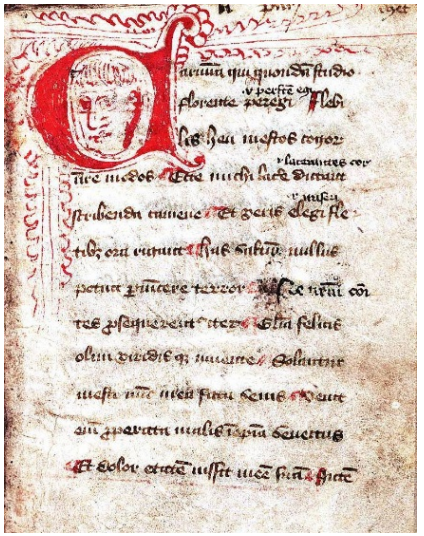
We have extended the discussion of the results in the revised version of the manuscript. We have now described in more details about the regionalization of the parameter η and its application in ungauged basins. We have also compared and discussed our study results to previous work on catchment classification and regionalization.

Also, in many places, English proofreading should be performed as some sentences are difficult to understand and interpret.

We have asked some English native speakers to help correct the grammar and improve the clarity of the sentences.

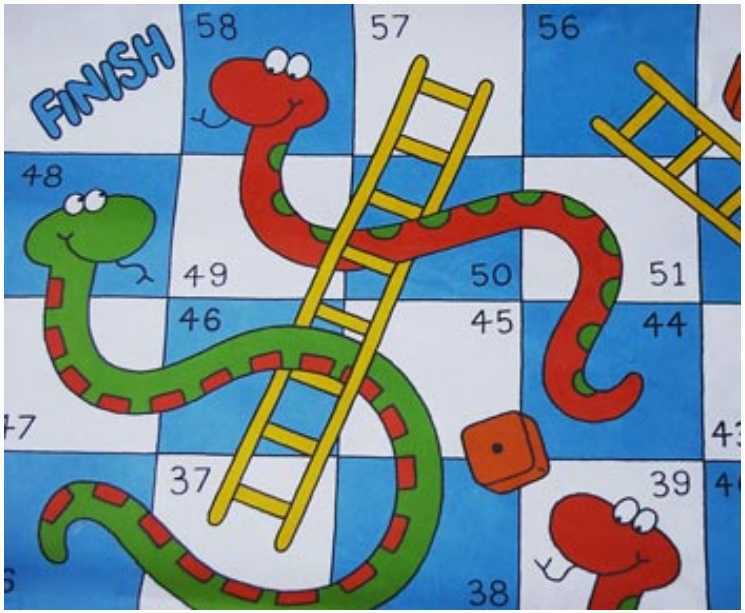
4a Responding to Review

- As well as the responses to all review comments, including (especially) any from the (Associate) Editor
- Prepare a “Track Changes” version of the manuscript, so that the editor and reviewers can see what you have changed
- Prepare a “clean” copy as well
- Take a look in HESS to see examples (“Peer Review” tab)



5a Another round of Review/Revision

- Submit complete manuscript, figures etc with cover letter again
- Go back to Step 2!



6 Paper Accepted

7 Typesetting, Proof Checking

- You will receive a near-final version
- Read it very carefully, several times, looking for mistakes
- Follow the instructions on how to correct mistakes
- Answer any questions:

Query No.	Description	Author's Response
GQ	Author surnames have been highlighted - please check these carefully and indicate if the first name or surname have been marked up incorrectly. Please note that this will affect indexing of your article, such as in PubMed.	correct
Q1	Please check the phrase 'increase in forest'- -does this mean 'increase in forest area or cover'?	it should be "forest cover"
Q2	Please confirm whether edits made to the all references are OK.	All are correct except reference 4. See article document for the correction

8 Paper Published

AGU PUBLICATIONS

Water Resources Research

RESEARCH ARTICLE
10.1002/2014WR016221

Key Points:
- Larger field support at subsurface than at surface flow path dominated sites
- The variety of methods to document runoff characteristics complicates comparing of sites
- Field studies at sites covering a broader range of characteristics are necessary

Supporting Information:
- Supporting Information S1

Correspondence to:
F. K. Barthold,

Stormflow generation: A meta-analysis of field evidence from small, forested catchments

Frauke K. Barthold[1] and Ross A. Woods[2]

[1]Institute of Earth and Environmental Sciences, University of Potsdam, Potsdam, Germany, [2]Department of Civil Engineering, University of Bristol, University Walk, Bristol, UK

Abstract Combinations of runoff characteristics are commonly used to represent distinct conceptual models of stormflow generation. In this study, three runoff characteristics: hydrograph response, time source of runoff water, and flow path are used to classify catchments. Published data from the scientific literature are used to provide evidence from small, forested catchments. Each catchment was assigned to one of the eight conceptual models, depending on the combination of quick/slow response, old/new water, and overland/subsurface flow. A standard procedure was developed to objectively diagnose the predominant conceptual model of stormflow generation for each catchment and assess its temporal and spatial support. The literature survey yielded 42 catchments, of which 30 catchments provide a complete set of qualitative runoff character-

During/After Publication

- Seek feedback before/during publication:
  - Conference presentations, give seminars
  - Talk to your colleagues about your work
- Promote after publication:
  - Conference presentations, give seminars
  - Update lists (CV, University database, ResearchGate)
  - Tweet, put a link in your email signature

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Wouter Berghuijs
PhD Student Hydrology at University of Bristol
Recent papers
- Berghuijs, Hartmann & Woods (2016), Streamflow sensitivity to water storage changes across Europe. *Geophysical Research*

END OF STEP-BY-STEP PUBLISHING

- Questions?