Hydrol. Earth Syst. Sci. Discuss., 8, C3501–C3502, 2011
www.hydrol-earth-syst-sci-discuss.net/8/C3501/2011/

Hydrology and Earth System Sciences Discussions

Interactive comment on "Spatial stochastic and analytical approaches to describe the complex hydraulic variability inherent channel geometry" *by* N. Hadadin

Anonymous Referee #1

Received and published: 17 August 2011

The author presents an application to a tributary of the Mississippi of hydraulic geometry relationships between different hydraulic variables and drainage area. The paper is generally very well written with a very thorough researched literature in the introduction.

However, I am not too sure about the innovation of this paper other than an application of known hydraulic geometry functions to a river for which a lot of field data were collected. The introduction, although very well presented, takes up more than half of the paper, followed by a very short method section and without a result or data analysis section, the author goes straight to the discussion and conclusions in which most is

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

focused again on the purpose of the paper and known facts, rather than discussing and contrasting findings...

I'd expected more in-depth analysis and discussion of the many data sets that have been collected and the implications of these on the findings and in relation to known concepts in hydraulic geometry. What was quite confusing is that the author seems to indicate towards the end of the paper that the fact that drainage area was chosen as the independent variable rather than discharge may be the new thing in this paper (p. 6976, line 5), however, the next few lines seem to state that this turned out to be a rather debatable choice ('... discharge is a more reliable independent variable for hydraulic geometry relations than drainage area.', p. 6976, line 6). So, I'm wondering whether this means the entire approach of putting drainage area as the independent variable becomes very questionable, and this isn't really discussed/examined?

Also, I believe it is important that the author states and explains more clearly what makes this contribution different to already existing literature with very well founded ideas on this topic; otherwise it makes it seem rather like an application of hydraulic geometry relationship to just another stream in which case it is quite difficult to see the scientific innovation and significant new findings; particularly because in some places it seems the author is questioning himself the validity of using drainage area as an independent variable and also because the paper is very short on the results and analysis.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 6967, 2011.