

Interactive comment on “Evaluating topographic wetness indices across central New York agricultural landscapes” by B. P. Buchanan et al.

M. Kopecký

ma.kopecky@gmail.com

Received and published: 31 January 2014

I found this discussion paper really interesting and I learned from it. Coming from the field of vegetation ecology, I was also puzzled how different TWI algorithms affect the results and if it does matter for ecological application (what I found can be read in Kopecký & Cizkova (2010) Using topographic wetness index in vegetation ecology: does the algorithm matter? Applied Vegetation Science, 13, 450–459.).

Here, I would like to comment on several issues in the paper.

I miss any information about sampling design used to select sites with the fields and design used to select fields within the landscape. This would help to assess the repre-

C7576

sentativeness of your study.

Did authors use any form of DEM pre-processing (e.g. sink filling)? This can substantially affect the performance of flow accumulation algorithms. According to my experience, this is especially important when working with LIDAR DEMs, which have usually many closed depressions (i.e. sinks).

I do not understand why authors did not evaluate also other flow accumulation algorithms available in SAGA GIS. Especially interesting would be the Mass flux method recently developed and advocated by Gruber & Peckham (2008) Land-surface parameters and objects in hydrology. In: Hengl & Reuter (eds.) Geomorphometry: concepts, software, applications. pp. 171–194. This method should be (theoretically) improvement over previous ones and its comparison with other algorithms will be very interesting. There is something wrong with Table 3.

Several papers cited in the Conclusion is completely missing in the References (Ludwig and Mauser, 2000; Xiande et al., 2002; Gomez-Plaza et al., 2001; Kim and Lee, 2004)

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 14041, 2013.

C7577