

Interactive comment on “The use of LIDAR as a data source for digital elevation models – a study of the relationship between the accuracy of digital elevation models and topographical attributes in northern peatlands” by A. Hasan et al.

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Dear Professor Grimaldi,

Thanks a lot for the valuable comments on the manuscript!

We are well aware of the evolution in terrain analysis, DEM processing, as well as DEM based hydrological modeling, including your pioneering work. Also our group has to some extent contributed to this (see e.g. Pilesjö, 2008, and Tang and Pilesjö, 2011),

C3155

where we have discussed different methods for drainage area estimation as well as compared different ways in estimating slope). We haven't discussed these advances in our paper but are of course happy to include more references if this is a request by the reviewers.

However, the aim of this paper is not to discuss and compare different algorithms, but rather to investigate possible relationships between cell size and accuracy, as well as between cell size and estimations of wetness index (via slope and drainage area).

As written in the paper (Section 4.6 and 4.7), slope and drainage area are estimated according to Pilesjö et al. (2006), where also pits are discussed. We considered it to be out of the scope, and make the paper too long, to again describe these methods.

Sincerely, Abdulghani Hassa, Petter Pilesjö and Andreas Persson

Tang J. and Pilesjö P. (2011). Estimating slope from raster data: a test of eight different algorithms in flat, undulating and steep terrain. River Basin Management VI. C.A. Brebbia, USA. Ecology and the Environment volume 146: 143-155.

Pilesjö, P.: An integrated raster-tin surface flow algorithm, in: Advances in digital terrain analysis, edited by: Zhou, Q., Lees, B., and Tang, G.-a., Lecture notes in geoinformation and cartography, Springer Berlin Heidelberg, 237-255, 2008.

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