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Hydrology and Earth System Sciences Discussions

Interactive comment on "A novel algorithm with heuristic information for extracting drainage networks from raster DEMs" *by* W. Yang et al.

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Thank you for your kindly comments on my manuscript. I regret my impatience. I have made a certain revisions on a certain issues you mentioned. The manuscript seems to be made little changes, for the issues can be corrected by a few words. There are exactly no changes on the other issues which primarily include quantitative analysis and description of the method. My necessary explanation and substaintial plan of revisions are as follows.

The major issue you mentioned is quantitative analysis. The purpose of quantitative analysis in articles is to prove the reasonableness of the proposed models and methods. Extracting drainage networks from DEMs aims at extracting realistic drainage networks which is a fundamental problem in hydrologic analysis. In my manuscript,

real existing river networks which were delineated by United States Agency for International Development (USAID) are used to verify my methods. While there are no quantitative indexes, the comparisons between the results generated by the proposed method and the real river line show that the proposed method can get a closer match. I think it maybe a good mean to check the proposed method. The quantitative analysis in your comments is sound. It does not conflict inherently with my means. We will make a certain quantitative indexes in my revision if I have the chance.

I want to verify the proposed method by comparing with the realistic river line. But the referenced realistic river lines appear only in the location where the real rivers exist. When processing the cells with definite flow direction, our method and the other methods is similar and the results have no obvious differences. Our method aims at removing the cells with undefined flow direction (pits and flats) in the DEMs and the obvious improvement come forth in the regions with such cells. It is to be regretted that my native language is not English and my method is not described well. I will describe my method in more detail if I have the chance.

Finally, I will take the other advices into consideration seriously. Thank you very much indeed.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 441, 2010.