

Interactive comment on “Semi-automatic extraction of lineaments from remote sensing data and the derivation of groundwater flow-paths” by U. Mallast et al.

Anonymous Referee #2

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Anonymous reviewer # 2 recommendation – “Semi-automatic extraction of lineaments from remote sensing data and the derivation of groundwater flow-paths” by U. Mallast, R. Gloaguen, S. Geyer, T. Rodiger, and C. Siebert.

The authors demonstrate a semi- automatic way to extract the lineaments from DEM and some ancillary data to derive the groundwater flow-paths. It combines linear filtering and objective classification to have a lineament map. The lineament is then differentiated to geological and morphological lineaments. Generally, the approach seems plausible to me. I suggest it published after some revisions.

I do have some questions and comments as to

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1. There are a lot of “assumptions” in this paper. For example, in page 1405, line 18; page 1408, line 11; page 1409, line 26; page 1411; line 27; page 1410, line 4; page 1412, line 26; page 1415; line 2.

It seems like without these assumptions, this approach may not work. Could the authors make some comments on that and maybe have one paragraph in the discussion or the conclusion regarding those assumptions?

2. The authors have mentioned the man-made features are excluded in ASTER DEM so if use the approach proposed by the authors into the urban areas, how much uncertainty will be? On the other hand, can this approach be applied for the globe?

3. In page 1409, line 17, a buffer of 300 m is used; how does this number come out? Is it sensitive to the result? Please comment on this.

4. In page 1415, line 25; “Thus, based on these correlations it can be inferred that the flow-path map is valid.” This sentence (approach) is not solid enough.

Can the authors use some statistical tools to compute their correlations or have some numbers not just from eyeball saying there are some correlations.

Specific comments:

5. The authors use lots of parenthesis () for some terminology or some abbreviations. It makes the article hard to read and understand. Please see below for details: (a) page 1407, line 3 PCI algorithm LINE (PCI Geomatics); page 1416, line 10; PCI Geomatica LINE 10 (PCI Geomatics): please be consistent. (b) Page 1407, line 10 to 11. Please get rid of the () for the LTHR, FTHR, ATHR, and DTHR. It is hard to understand this sentence.

6. In page 1407, line 26: please get rid of the 2nd DEM (...the ASTER GDEM DEM.)

7. Page 1405, line 16, please get rid of “,” between Pratt and (2007).

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