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Hydrology and Earth System Sciences Discussions

Interactive comment on "Regional scale analysis of landform configuration with base-level maps" *by* C. H. Grohmann et al.

Anonymous Referee #5

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GENERAL COMMENTS. Overall, article is interesting, with a new use of previous development methodologies in the morphometric analyst of landscape.

Structure of the article must be modify for a better use of the paper extension. A significant reduction in the extension of chapters 1 and 2 should be useful for a better development of further chapters.

In general, figures are small, so the visualization of data results are not very easy.

General evaluation is accepted with major revisions.

SPECIFIC COMMENTS. Chapter 1 – Introduction. Chapter should be resumed. In Example, paragraph from line 15 to 20 do not provide essential information for the paper understanding. In the same way, paragraph from line 28 to 33 can be significantly

resumed.

Chapter 2.1 – Construction. This chapter should be resumed. First paragraph from line 7 to 12 could be replaced for a reference.

Chapter 2.2 – Applications. In order to the total length of the article, the space used for this chapter is out of order. The systematic ordering of studies where this kind of methodology has been used could be useful in a methodologist focused paper. Not in this case.

After all, all this information may be useful, so a list of references with an introduction in the way of: “This methodology has been used with optimal results in many different areas, like . . .”.

Chapter 3 – Methods. First paragraph from line 4 to 8 may be deleted.

Chapter 4 – Results and discussion. At first time, this section should have a longer extension, because is the focus of the paper, and any further discussion or idea obtained from the paper should be well developed and referenced at this chapter. In addition, a short explanation of the base-level shape used in the lineaments identification and delineation will be useful.

To support the first paragraph, from line 6 to 10, a figure of the DTM derived drainage network should be showed; Strahler′s ordering of the network will be useful information to.

In third paragraph, from line 16 to 20, authors write: “Although none of these mapped structures have ever been connected to recent tectonic events, we must note that some of them, such as the NNW-SSE-trending thrust north of the rivers major inflexion (Fig. 6a),”. These lineaments are not present in figure 6a, or only one, so the direction of this sentence may be doubt.

In paragraph from line 21 to 26, authors talk about fluvial capture based on the orientation of the base-level lines. The affirmation may be true, and other studies over

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the area are mentioned in the text. Anyway, more data about the area, and new studies should be carried out for the verification of the proposed idea. In fact, the Grajau river development is more important that the Gurupí ones, so it is possible too, that the fluvial capture of Tocantins fluvial system (flowing before to the Grajau river complex) promote the development of Gurupí. As I mentioned before, new studies area necessary in that area.

In paragraph from line 13 to 20 (page 97), authors use a new data (geophysical data) that have not been mentioned before. The use of this geophysical data must be mentioned previously. Anyway, results interpretations of the authors are very difficult to check, because the overlap of the data results is absolutely essential. If this overlap process is not makes, all interpretations are difficult to evaluate. To solve this disadvantage the size of the figures does not have a positive effect.

Finally, author's affirmations of last paragraph (from line 21 to 25) have the same disadvantage pointed in the previous paragraph, which is pointed out the importance of the data results overlapping.

Chapter 5 – Conclusions. All this chapter is structured on the base of the interpretation of results of the base-level analysis, but in the referee opinion, all these interpretations will be easy to follow, if the authors make a overlap of data. Lineaments vs. Geology and lineaments vs. Geophysical data are essential figures.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 89, 2011.