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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.

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This paper is dedicated to the concept of the base level used to extract the tectonic feature from landscape using DEM. The proposed method is applied to a large region of Brazil. The changes suggested by all reviewers and myself will greatly improve the paper, but I recommended the authors add more info on some references, which will make the text easier to read.

General comments The paper is well written. The authors make a good overview of the base level concept in the first part of the paper, but they do not really go into detail about the method used to perform a base level using DEM. In the method section more detail have to be given about how they extract the base level surface even if there is a reference. For instance AT least-cost algorithm must be described shortly

way in the paper. On the whole, I am convinced by the base level concept used to analyze topography, but I am not convinced with the treatment of small scale (DEM 1km), because abrupt changes are not captured. In that case you will get more mantle effect on topography than really faults. I prefer local use for base level to analyze topography, as it is suggested in the last figure. In addition, Strahler is not the good classification for morphometry. I cannot go further because I have a paper on that topic, which has been rejected for 5 years. The main issues are linked to the discussion's section, because the figures do not really support the text. Each map in figure 5 must contain the river courses, in order to see the link between base level and the surface. Figure 6 can probably be improved by overlapping both the 2nd (and not 24nd as displayed in the caption) and 3rd contours with a hillshade draping the geology, this will improve the readability of the maps. Figure 8 can be transformed in a pseudo 3D profile using the 3D representation using sections; this will permit to see the fault scarp, if it exists, maybe it is more a limit of the extension zone, and more an effect of the mantle than a unique fault. Figure 8 needs more explanation.

Specific and technical comments I have no direct specific comments because my comments are requests for adding information. In addition, the reviewer (RC, C5) has already made good detailed comments.

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