

## ***Interactive comment on “Neotectonics, flooding patterns and landscape evolution in southern Amazonia” by U. Lombardo***

**Anonymous Referee #1**

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General comments:

The paper by Lombardo presents arguments for Neotectonic influences on complex landscape evolution in Llanos de Moxos, southern Amazonia. A commendable multi-disciplinary approach has been undertaken with data from satellite imagery, literature and fieldwork in several disciplines such as geomorphology, ecology and archaeology aiding interpretations. The research nicely highlights the important interplay between tectonics, sedimentation patterns, fluvial form and landscape evolution. The paper presents a useful local study in which insights into the local geomorphology and tectonics are gained, which have been put into a larger regional scale context. It also provides a nice case study that builds upon existing knowledge of tectonics and landscape evolution.

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Specific comments:

Emphasis has been placed on one r.c. date – I would air on the side of caution of using a single date. I see however from replies that you will be addressing this issue.

Throughout the article there is mention of fluvial fans. I would also like to see some reference to wider fan literature with regards to their presence in actively subsiding basins (i.e. Weisssmann et al 2010, Hartley et al 2011, Weismann et al, 2013 and references within) as their presence is a key indicator of subsidence, and therefore tectonic processes in the area. You touch upon causal mechanisms of avulsions on the fluvial fans from the literature on the area but I would like to see more generalized texts on fan processes (i.e. descriptions in Weismann et al 2013 and references within). For instance there is no obvious mention of intrinsic elevation differences on the fan driving avulsion processes (e.g. Kraus, 1999; Slingerland and Smith 2004; Buehler et al 2011; Hajek 2014 etc).

What evidence is there for quick deposition of the clays and silts, explain the interpretation of rapid deposition or is this hypothesized? (P651).

A few short sentences on what you have seen in the past and how that may help with predictions on possible future impacts on changing conditions on either humans, ecology or fluvial/lake form in the area would give the paper an interesting close – the importance of reconstructing the past to help understand future changes is mentioned at the beginning but not really addressed later on.

Technical corrections: Although generally the standard of written English is good a few grammatical errors/sentence restructuring is needed. A few of them are listed below:

Throughout - Paleo rivers should be paleorivers? Line 19, p636, should be paleo-ecologists Line 25 p639, reorganisation of sentence needed. Line 1, p640, should be criss-crossed. Line 11, p644, Should be stratigraphic. Line 21 – date missing from reference. Line 1, p647, indicate on Figure 5 where the 45 degree turn is. Line 16, p655

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should be these layers Line 20, p655, rewording needed Line 20, p656, date missing from reference. Line 11, p657, needs rewording. Line 18,p657, difficult sentence to follow, rewording needed. Line 4, p657 – should be triggered.

Figures presented are appropriate and used well in text. An insert map at the larger scale would be beneficial for location purposes of the study area to those who are not familiar with the region. Some of the captions are brief and could do with some further detail (i.e. Figure 5, and explanation of each graph would help clarify what they show). Annotations on some images would also be beneficial, for example in Figure 3 labels and arrows indicating the splay deposits, or highlight the 45 degree turn in Figure 5. Scales are missing on a few Figures (8, 9, 10, 12). There are also some axis labels missing (Figure 6C).

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Interactive comment on Earth Surf. Dynam. Discuss., 2, 635, 2014.