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Interactive comment on “The turbidity behavior in an Amazon floodplain” by E. Alcântara et al.

Anonymous Referee #1

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Referee's comments on the manuscript HESSD-6-3947-2009 by Alcântara et al. General comments The article presents an interesting study of the Amazonian Curuai floodplain, bringing new data on the influence of several factors inducing turbidity fluctuations, despite the number of studies undertaken in that environment. Time and spatial series and the proper use of subsidiary data, as well as refined analyses have been used by the authors to support conclusions on the main factors influencing turbidity in that floodplain. However, due to the complexity of floodplains, Amazonian ones in particular, Introduction and Study Area sections are very important to understand properly the results, discussion, and conclusions. Therefore, the beginning of the paper should be more clearly exposed, in a fluent and logic sequence. Several aspects of the spatial measurements should be more clearly described to give a better idea on how they were made. Well structured sentences in English alternate with poor ones, the text

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containing many mistakes. Specific comments (Pg. 3949, par. 5) Secchi disk is a measure of transparency and not a direct measure of turbidity. In fact, transparency is a consequence of turbidity and other factors, which interfere on the light penetration into the water. Study area (pgs. 3951–3953) needs a large revision as it is not informative enough, but is, instead, an aggregation of a large amount of information without following a rational and logic order, making difficult the understanding of the floodplain features. Due to the complexity of floodplain functioning, it is necessary to give information in a sequence easily followed by the reader. Precipitation and climate data should come at the beginning (see pg. 3952, par. 10), followed by the description of the four floodplain phases (high water, receding etc.). Then, all information should report to each phase in such a way that in the end the reader has a whole picture of the floodplain and the factors influencing turbidity and features related to each phase. (Pg. 3954, par. 5) Here, frequency of measurements and number of points established for the study are lacking, as in Fig. 7, indicated in the text, one can hardly see the number of stations. (Pg. 3965, par. 10) Related to Fig. 12c, wind direction is northwest to southeast instead of NE to SW. (Pg. 3964, par. 10 and pg. 3965, par. 10) It is difficult to understand how the main wind direction in Fig. 11 is southeast to northwest and in Fig. 12, related to the floodplain phases, is northwest to southeast. (Pg. 3968, par. 5) a natural barrier mentioned here is unclear and needs an explanation. Questions on the whole content of the article, whose answers could be incorporated in the “Conclusions” section are: 1. which was the influence on the data analyses and comparisons the fact that the temporal data (period XI/04 – IV/05) were taken at a different period than those of the spatial ones (2003–2004)?; 2. if an anchored buoy carrying complete equipment, for short interval records, is not available, the in situ measurements are sufficient to depict a floodplain functioning concerning turbidity?; 3. if the previous answer was affirmative, once a month during the year in an Amazon floodplain would be sufficient for having data on the functioning of the four phases?; 4. the study area is complex and composed of several lakes, including small ones, shallow areas, channels, and the question is how representative of the whole environment are data from the temporal

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series obtained in one large lake within the floodplain? the spatial data would be more representative for the floodplain?; 5. are there publications on the influence of turbidity short pulses, registered by the temporal series, on organisms of that floodplain, which could indicate the vital importance of working with such accuracy on a huge amount of data? 6. if affirmative, they should be cited in the Discussion section. Figures: Fig. 4 should contain the source of the data; Figs. 11 and 12 – check wind directions as above mentioned; in Figs. 14 and 15 – the legend can be shortened, putting “during” before the phases, as for example “....data during: a) rising....” etc.; in Fig. 15a the number 3 in the circle 3 can be hardly seen. The text needs an extensive linguistic revision; it is difficult to enumerate here all the mistakes involving mainly structural aspects. Abbreviations of publications should be checked as, for instance, in Lima et al. (1995), Roozen et al. (2003), Tundisi et al. (2004). The article is a good contribution but needs improvement.

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