

***Interactive comment on* “Floodplain sediment from a 30-year-recurrence flood in 2005 of the Ping River in northern Thailand” by S. H. Wood and A. D. Ziegler**

Anonymous Referee #2

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The paper mainly aims (i) to study the extent of the sediments that can be identified in the stratigraphy, and that are deposited during the monsoon-floods, and (ii) to describe the deposition patterns of the Ping River. The Authors describe the precipitations that give rise to a 30-year recurrence flood in the Ban Ko village. Subsequently to the flood occurrence, the authors measured the sediments thicknesses on the inundated floodplain, and analyzed the density and the granulometry of the sediments. They also made a suspended sediment measurement during the flood.

The manuscript is interesting, since it describes the flood deposits of a river with quite

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large sediment concentrations, that are infrequently discussed in literature. However, I think that the paper requires some improvements. In particular, the measurement methods, and the discussion of the collected data should be clarified, because they sometimes sound confusing, and not complete.

In particular, the Authors should consider the following points in order to improve the quality of their paper:

1. In the abstract, the Authors outline the importance of the bioturbation of the sediments. However, bioturbation is not analyzed in the discussion section, but only in the conclusions. It would be nice that the Authors spend a few lines regarding this point in the discussion.
2. It could be useful, if possible, to show the location of the measure points of sediments thickness on a map. In fact, the Authors only refer to Fig. 8, which is a photograph of a single measurement point.
3. I also think that the Authors should clarify in section 4 (Measurements) that they have made also some density and grain size analysis, and that they determined the sediment concentration from one grab.
4. It is not clear why the Authors used a density of wet sediment of 1.6 g/cm^3 and a water content of 0.60 on line 14 page 3488. Moreover, the density data analysis in the following section indicate a density of $1.6\text{--}1.7 \text{ g/cm}^3$, and a water content ranging from 0.67 to 0.83.
5. The Authors should also explain the reason why they used 1.5 m s^{-1} as a velocity in the tributary channel on line 20 page 3848.
6. Moreover, the discussion of the results sounds a bit disordered. I think the Authors should write this paragraph clarifying the conclusions that they can deduce from the collected data better. It would also be useful to conclude the section with a sentence concerning the extent and the nature of the flooding, i.e the aims of their study.

7. On line 10, page 3848 the Authors say that the estimated flood area is 1 km², and that a water depth of 1.2 m gives rise to 1.2 million cubic meters. However, it is not clear to me the reason why on line 22, page 3848 they refer to an area of 0.27 km², that gives rise to the same water volume of 1.2 million cubic meter.

Minor points: 1. The congruence of the flood dates should be verified in order to use a unique temporal reference, since sometimes the Authors refer to the 29 September – 1 October flood (on line 12 page 3841), and in other places to the 29 September-2 October flood (Figure 11, page 3865).

2. Why do the Authors refer to Figures 2-8 on line 1 page 3844 ?

3. The description of the appearance of sediment layers in section 5.3 refers to Fig 13. I think the Authors should verify the references between the description in the text and the relative panels of Figure 13.

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