

Interactive comment on “A 2600 year history of floods in the Bernese Alps, Switzerland: frequencies, mechanisms and climate forcing” by L. Schulte et al.

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This paper provides a detail and meticulous study of delta plain sediments in the Swiss Alps, aiming to provide a millenary flood history based on geochemical and biological indicators supported by historical and instrumental records. The paper is well written and pleasant to read. The data source and methods are well explain, and results are well supported by data. It is an excellent piece of work and pioneer on the study of palaeofloods on delta environments. The paper provides an exhaustive analysis on the flood episodes and their relation with palaeoclimatic proxy data an climate drivers. The hydroclimatic analysis is robust and provides a good relation between floods and

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climate. It is interesting on the way in which the authors are distinguished these flood-climate links for individual events, episodes or clusters of events and cyclic variability on hydroclimatic events. The paper deserves publication in HESS.

A point for discussion is the cycle issue. It is nice to find some periodicities on the spectral analysis of the geochemical indicators, and how those more or less match with periodicities on NAO, TSI, O18, etc.. Similar cycles can be found in economy (K wave), business cycles (bankruptcy), pathologies, etc.. In addition, when we tried to fit 1 to 1 peaks on these records it is totally impossible to get a good match, and then we blame the chronology. I wonder if these cycles are artefacts built by our mathematical methods of analysis or the authors are comfortable with the influence of global drivers to explain the local geochemical content of a sedimentological log.

Some specific comments to take into consideration, although my English is not excellent.

Page 3392. Line 7. “Hasli-Aare river channel correction in 1875”

Line 17. Aggradation with multiple sets of flood layers with . . .

Page 3398 line 5 “River channel shifts and avulsions may cause erosion. . .”

Page 3401. line 20 “were compiled from written sources “

3402 line 11. I don’t think that the section 3.3 is the correct one. Probably section 3.2. However, you can write: “as described previously”

3418 line 1 “The catastrophic flood episode of AD 1342. . .”

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