Hydrol. Earth Syst. Sci. Discuss., 11, C5703–C5704, 2014
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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Characterization of sediment layer composition in a shallow lake: from open water zones to reed belt areas" *by* I. Kogelbauer and W. Loiskandl

Anonymous Referee #2

Received and published: 16 December 2014

The study shows an impressive set of data on the sediment layering of Neusiedler See, a shallow lake with areas in both in Austria and Hungary. Different ecotype specific layerings from consolidated lake bed to open water are considered. Kogelbauer et al. (2013) developed a new combination of sensors in order to be able to characterise the layering from water to consolidated lake bed. This method is now applied to cover the full area of Neusiedler See. I think this is a valuable contribution. However, the organisation of the paper and the presentation of results could be improved.

Comment 1: The problem of lake sediment layering should be already discussed in the introduction together with the characteristic profile that is now shown in the results sec-

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tion. This was already established in Kogelbauer et al. (2013) and it would help readers who are not familiar with lake sediment layering to understand better the scope of the study. Also the lutocline and the different characteristic contents and PR values should be explained in the introduction. In the results section, we can then see how the different layers and lutoclines are in the different sites and ecotypes. Comment 2: It could also be mentioned that Neusiedler See area is actually a national park. Comment 3: It should be better explained what the ecological relevance of the different sediment layers is. Is there even a special interest from the National Park Managers? Comment 4: Fig 1 shows an impressive amount of measurements points. Can you please indicate how many sites have actually been measured? Comment 5: Compared to the large number of measurement sites, we see only few results. Are the results part of a digital map and could this be shown here? Comment 6: Fig 6 shows "representative" CSPS profiles. I am wondering whether there is spatial variation between and within ecotypes? If yes, can you explain part of this variation? E.g. from Fig. 6 A,B it appears that the layering of open water sites can be quite different. Comment 7: In the abstract, it is mentioned that a complementary tool to bridge the gap . . . is still missing. However, I understood that this method has now been published by Kogelbauer et al. (2013) and is thus no longer missing; however now applied to the full area of Neusiedler See. In this case, I suggest to consider starting the Introduction with the description of Neusiedler See and why information on sediment layer composition is needed there. Comment 8: I found the description of the data acquisition tool hard to follow. What is TM N 33/WGS 84? What is a force cell? What is meant by "the large negative values were limited to zero occurring? What is the base offset voltage? The last sentence of section 2.3 could be rephrased. Comment 9: Please define PR0.2. Comment 10: P 12, L 21: . . .results from the particle size analysis are shown within the Austrian soil texture triangle (Fig. 4). . .

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 12627, 2014.