

Interactive comment on “Quantifying nutrient fluxes in Hyporheic Zones with a new Passive Flux Meter (HPFM)” by Julia Vanessa Kunz et al.

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Review of Kunz et al, Quantifying nutrient fluxes in Hyporheic Zones with a new Passive Flux Meter (HPFM).

The paper presents a useful monitoring tool to increase our understanding of nutrient cycling in the hyporheic zone of streams. The paper is very well organized and written. I only have some minor comments that could be considered by the authors.

P5 l6: From figure 1 the idea of tracer release and nutrient absorption is not immediately clear. Also, the difference between the sections filled with tracer and with absorber is not clear in the graphic (same color)

P6 l32 and P7: “if not indicated otherwise” Remove?

C1

P9l8: At this point in the paper it is not clear why these additional measurements are also done. Consider adding a short introduction.

P10l28: missing r in break

P11l7: Here you mention declining concentrations with depth, but figure 3 shows fluxes. Adding concentrations to figure 3 would also be informative

P11l13: For this conclusion (52% removal), you need to know that the vertical flux is downward and that groundwater has no impact on the concentration levels. However, the vertical flow is given after this conclusion. Re-order?

P12l6: Higher should be lower?

P12l10: Discussion: You may consider to add a paragraph about the applicability of the HPFM. Can it also be applied to quantify vertical nutrient fluxes in lakes and other non-flowing surface waters? Is it applicable in case of a coarse grained hyporheic zone (stones, gravel)?

P12l10: Discussion: The difference in concentrations measured in the MLS are quite different from the HPFM (figure 5). Is this only due to the diurnal variations? Other explanations? How do we know which method is the best one?

P12l14: remove second(Layton , 2015)

P12l18 two points at the end

P14l15: Is this really permanent removal for PO₄? Or can it later be released from its absorption sites?

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C2