

## ***Interactive comment on “Eddy covariance flux measurements confirm extreme CH<sub>4</sub> emissions from a Swiss hydropower reservoir and resolve their short-term variability” by W. Eugster et al.***

**W. Eugster**

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Thanks for these helpful feedbacks. I will of course work with my coauthors on the detailed replies to all reviewers, but here I want to quickly address Major point #2: you're more of an expert in footprint modeling, and of course you are right with your critique. I tried different versions of footprint displays, and learned that presenting the traditional footprints to people who do not know too much about the issue confounds them since the traditional way to express footprint is to ask the question “*how much contribution to my flux would there be from which spot in the upwind surface if there was a flux at all*” – in the variant we included in the paper we however ask the question

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*“which surface areas did contribute most to the overall CH<sub>2</sub> flux that we report from this reservoir”* – again, the confounding effect may be that the areas that were never in the footprint of our tower could be erroneously interpreted as areas that do **not** emit CH<sub>2</sub>, whereas the correct view would be that we don't know for these areas that were not measured.

We are discussing the addition of a figure showing a map with a kriged trend surface of all chamber measurements that shows the full picture for the available data, and I suggest that we pick up your comment on the footprint in combination with the questions of the other reviewers to address the issues of mismatch of chamber deployment times and footprint area of an eddy covariance flux system as one major point that we must address in our revisions. It will be a clarification, not a change in footprint model, though.

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