**Hydrology and
Earth System
Sciences**

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Discussions

Interactive comment on "Dynamics of auto- and heterotrophic picoplankton and associated viruses in Lake Geneva" *by* A. Parvathi et al.

Anonymous Referee #2

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General comments.

This study is providing important information regarding the dynamics of microorganisms in Lake Geneva, ranging from phytoplankton to viruses. They measure abundance and production of the different organisms and try to correlate this to environmental parameters. The sampling period extends from July to November and commonly measurements are made at different depths in the water column. In that sense the manuscript provides important and novel information regarding a subject that is vastly understudied. However, the result and discussion part is not written to satisfaction. In the results part, the different sections are difficult to follow and also their references to different figures and tables is confusing. I would also prefer that the data was more directly shown as individual points in a table, not only min, max, and mean, which

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regarding to what this study want to show is quite irrelevant (preferably as supplementary material). Throughout it is not clear what depths and seasons you are using for e.g. statistics work. Also the discussion is difficult to follow and I think the authors draw to big conclusions compared to what the data is showing. Further, overall the English need to be worked on and abbreviations are sometimes used and sometime not, please be consistent.

Specific comments.

In methods you say you see 3 VLPs (VLP1, VLP2, and VLP3) in flow cytometer but in results only 2? Please correct.

8723: Might not want to use PCR as a abbreviation as the majority of micro- and molecular biologists think you are talking about Polymerase chain reaction. But it is up to you.

Page 8725: Your figure numbers are scrambled in your text (fig 1, 6, 2, 5, 3, 4, 7). Should it not be 1, 2, 3, 4, 5, 6, 7?

Page 8726: I do not find any information regarding what depth bacterial and viral production was measured at. Was it only on one depth, which?

Page 8726-8727: I assume the correlations you discuss in the first paragraph of Statistical analyses are the one you show in table 3. However, in table 3, every number except the last row are bold, meaning that everything except Chl a is significant. However, in the text you write that you have several other not significant correlations (e.g. VLP1 and bacterial abundance). Overall, I am not sure from your text what correlations you are showing in table 3. Please explain and correct.

Page 8727, Line 14-21: You write you do a PCR analyses for picocyanobacteria and VLP's, but I do not find a graph showing this. Please include.

Page 8730, line 23-24: I do not understand the following sentence or it's connection to figure 6 : "In the case of VLPs host abundances (bacteria, picocyanobacteria and

other phytoplankton) also played important role in determining their variations (Fig. 6)."

Page 8730, Line 24-27: You write about that PCR revealed different parameters that attributed to variability for the different VLP-groups, but you do not show that anywhere in your results.

Table 2. It is not clear what the abbreviations PCGM, PCVM, BGM, and BVM stands for.

Table 3. It says that abbreviations are explained in the text. I guess that means the main text, in which I do not find it.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 8715, 2013.

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