Manuscript: #49405v3

Title: Characteristics of planktonic and sediment bacterial communities in a heavily polluted urban river

General comments:

This study aims to investigate the spatiotemporal dynamics of both planktonic and sediment bacterial populations in the urban river and the associated environmental factors. The authors addressed previous comments and suggestions, which further strengthens the paper. They have also changed and improved the figures. However, there are still some issues that need to be addressed in the revised manuscript: (1) the construction and interpretation of the co-occurrence network was insufficient and did not add any value to the study. A proper assessment of a co-occurrence network can provide more insight into the interactions (positive and/or negative) between water and sediment bacterial communities. (2) As indicated by the authors, rainfall between winter and summer differed markedly. Differences in rainfall may also explain the high abundance of some taxa and correlations between nutrients and taxa. The authors explained/discussed the influence of other (seasonal) environmental parameters on bacterial communities but failed to discuss the impact of rainfall, which is one of the most important seasonal parameters. As suggested previously, rainfall events impact river hydraulics and can even cause a "wash-out effect" of nutrients and microbial communities. Also, when nutrients are high (e.g. winter) it might select for specific taxa that can influence diversity.

Specific comments (based on Word document manuscript)

Line 112: in literature

Line 159: for multicollinearity among environmental variables; variables with VIF > 10 were eliminated from RDA analysis.

Line 293: I still don't understand what is a "given urban river". In this context it refers to the Liangtan river

Line 404: Nevertheless, extensive research should be conducted in future work to determine: (i) long-term seasonal changes of planktonic and sediment bacterial communities in urban rivers polluted by continuous domestic sewage; and (ii) the role of functional microorganisms, especially bacterial pathogens, to provide further insight into the monitoring and control of contamination in urban rivers.

- What are "functional microorganisms"? Do the authors refer to indicator species?
- What are the limitations of this study?