

Interactive comment on “Online Total Organic Carbon (TOC) monitoring for water and wastewater treatment plants processes and operations optimization” by Céline Assmann et al.

Anonymous Referee #2

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1. Does the paper address relevant scientific questions within the scope of DWES?

This paper addresses a relevant and interesting topic for DWES. Especially for the special CCWI 2016 issue, the application of online analyzers for advanced control and monitoring fits the scope.

2. Does the paper present novel concepts, ideas, tools, or data?

This paper presents a further refinement of the application of online analyzers for advanced control and monitoring. The application of online TOC measurements for advanced control for waste water treatment plants in the Netherlands is not yet widely spread. Especially the idea of applying online TOC measurements optimizing the amount of BOD available for the denitrification process in a waste

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water treatment plant is interesting. (As an addition to ammonium and nitrate analyzers)

3. Are substantial conclusions reached?

Based on the results conclusions can be reached; however the conclusions could be more specifically formulated. In the current version they are quite qualitative and not quantitative. For example: due to optimization with TOC, the original dosage can be reduced to approximately one third.

4. Are the scientific methods and assumptions valid and clearly outlined?

Improvements can be made for this aspect. First of all, the method for each case is not structured in a distinct subsection (further elaborated at aspect no. 10.)

The method for each section is clearly explained, but it is not compared with methods from other studies. Also explicit references to other works are not present in these paragraphs. (See also aspect no. 7.)

5. Are the results sufficient to support the interpretations and conclusions?

The reason for a selected period of the results shown should be made clear. Are these results a specific selection of a period or are these the results of a whole dataset? Also here, just like with the methods, a critical comparison with the results of previous or other studies is not made. (See also aspect no. 7.)

6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)?

The applied methods and measurement instruments are sufficiently described.

7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution?

No. This is the major improvement to be made in this paper. No citations or references to related work are made in the text. Also a critical comparison of the results with other works is not made. It is advised to rewrite this paper in such a way that also the broader discussion on this topic becomes clear and also the position of this paper in this discussion.

8. Does the title clearly reflect the contents of the paper?

Yes. It clearly reflects the contents of the paper.

9. Does the abstract provide a concise and complete summary?

Yes. It covers the contents of the paper.

10. Is the overall presentation well structured and clear?

The main structure of the paper is clear. However, the structure for each case can be improved. In the current structure, there is a distinction between objective and results. However, in the subsection about results, also the methods are included. For each case a clear distinction between methods and results should be made.

Section 2: The first two paragraphs of 2.2 are not results but methods. I would suggest to make an extra subsection 2.2 Methods, and subsection 2.3 with Results, and subsection 2.4 with Outlook (or further investigation).

Section 3: In this section the distinction between objective, methods, results and outlook is not clear. Also here I would like to suggest to make a strict distinction between these subsections

Section 4: Idem dito.

11. Is the language fluent and precise?

Yes. The language is fluent and precise.

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12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?

The following abbreviations are not further defined: abstract: OPEX; section 2.2: SUMO.

13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated?

The captions of the tables should be placed on top of the tables and not below the tables.

14. Are the number and quality of references appropriate?

The number of references is too low and should be increased. Even more important, there are not any explicit citations or references within in text. There is only a References section included at the end.

15. Is the amount and quality of supplementary material appropriate?

Not available.

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