

## ***Interactive comment on “Factors governing the pH in a heterotrophic, turbid, tidal estuary” by A. F. Hofmann et al.***

**A. F. Hofmann et al.**

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Based on the constructive comments of all reviewers, we substantially improved our manuscript. The changes are too many to list individually and the most important, central improvements are summarized in our integrated reply to all referee comments which can be found in our top-level author comment “Integrated reply to referee comments”. Here, we restrict ourselves to the outline of important changes based on the comments of reviewer # 3. Furthermore, we mention briefly why we do not agree with some of the comments of this reviewer. Also here, we restrict ourselves to the most important points.

Based on the comments of reviewer # 3, we cited and added Frankignoulle et al. (1996); Abril and Frankignoulle (2001) to the discussion. We stated that the paper is

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about "modelling work, in the Schelt" in the title. There, we also reflected more that the technical pH modelling method is one of the main messages of the paper. We made more clear in the introduction what is novel about our approach: our approach allows a quantification of influences on pH; our approach uses time variable dissociation constants (novel compared to Hofmann et al. (2008a)).

Frankignoulle et al. (1996) indeed drew similar conclusions than we do, albeit only in a qualitative way. As also suggested by Anonymous reviewer #2, we cited Frankignoulle et al. (1996) in the revised version of the paper, also Abril and Frankignoulle (2001) are acknowledged.

It should be made clear that the present paper does not represent an "independent study" but it is merely a further exploitation of an existing model (which has not been changed). We included some more information about the model in the current paper, but the discussion of model validation and analysis is already given in Hofmann et al. (2008b) and will not be repeated here.

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## References

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