Biogeosciences Discussions

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Comment on bg-2021-209

Anonymous Referee #2

Referee comment on "Carbon dynamics at the river–estuarine transition: a comparison among tributaries of Chesapeake Bay" by Paul A. Bukaveckas, Biogeosciences Discuss., https://doi.org/10.5194/bg-2021-209-RC2, 2021

Review of " Carbon dynamics at the river-estuarine transition: a comparison among tributaries of Chesapeake Bay" by Paul A. Bukaveckas

The paper discussed Sources and transformation of C to understand external (river inputs & tidal exchange) vs. internal (metabolism) in upper segments of the James, Pamunkey and Mattaponi Estuaries. The contrast in the qualitative and quantitative capacities of different carbon pools in the three studied estuaries, despite that they flow adjacent to each other and share almost similar carbon sources in their catchment, is unique and essential considering the modified carbon cycle under changing global climate condition. The manuscript provides new insight to the modified carbon cycling along the tidal freshwater regions of selected tributaries of Chesapeake Bay, is well-written and the data quality is good. I think the readers of this journal will benefit from the information contained in this paper. I therefore recommend publication of the paper after minor revision listed below.

Introduction: The relative fraction of area covered under each estuaries during the study is not clear, whether it represent the entire estuarine contribution?

Methods: Information on the data collection frequency and use for the model is missing.

Summary: The relevance and global significance of the study in terms of tropical and non-tropical context.