

Response to Editor

Dear editor,

We are submitting a revised version of our manuscript entitled “Source-to-Sink Pathways of Dissolved Organic Carbon in the River-Estuary-Ocean Continuum: A Modeling Investigation”. Thank you for the positive feedback and for pointing out the additional revisions needed. Below are our responses to each of the comments:

Line 23: “DOC is typically defined as the fraction of organic carbon that can pass a pore size filter ranging from 0.2-0.77 μ m, with decomposition time scales varying from hours to years”. “a pore size filter” didn’t read well and “0.77 μ m” should be “0.7 μ m”. I suggest to revise it to “DOC is typically defined as the fraction of organic carbon that can pass through filters with pore sizes ranging from 0.2 to 0.7 μ m, with turnover times varying from hours to millennia”.
Thank you for the suggestion. The sentence has been revised accordingly based on your recommendation.

Rephrased to (lines 24-25): “DOC is typically defined as the fraction of organic carbon that can pass through filters with pore sizes ranging from 0.2 to 0.7 μ m, with turnover times varying from hours to millennia”.

Line 9: I suggest removing "most" as no comparison was made here.
The “most” has been removed in line 9.

Line 10: Missing a preposition before “the.”
Preposition added.

Line 24: Suggest removing “in the ocean.” The definition also works elsewhere.
Removed.

(from reviewer 2) Line 31, "biochemically consumed", sounds strange, as I typically think of "consumed" as being purely biological. "Biochemically removed" would sound better in my opinion.
Rephrased to (line 31): “... tends to be removed biochemically ...”.

Line 120: Unclear what “specified” means—determined or measured?
The concentration of organic carbon and nutrients were specified at the river boundary according to previous measurements in river channel.
Rephrased to (line 120): “Meanwhile, nutrient concentrations, tDOC, and POC concentrations at river boundary are specified according to previous measurements in river channel.”

Line 127: “was”. Be consistent with tense usage throughout the manuscript.
Thank you for pointing this out. Tense usage has been checked and is now consistent throughout the manuscript.

Lines 168, 204, 311: Suggest replacing “figure out” with more formal words (e.g., evaluate).
Rephrased to (line 168): “To evaluate the seasonal distribution characteristics ...”.

Rephrased to (line 204): "To further identify the driving mechanisms ...".

Rephrased to (line 311): "To assess the relative contribution ...".

Figures 4 and 5: Color bar labels (e.g., DOC, ratio of tDOC) are too small.

The color bar labels of Figure 4 and Figure 5 have been enlarged for better readability.

Figure 6: Some of the figure legends (e.g., Dry period, Wet Period) are much larger than others (those in the lower panels).

The figure legends have been resized to ensure consistent size across all panels.

Lines 230-253: This is a very long paragraph. The authors may consider separating the description of tDOC from that of mDOC.

This paragraph has been split into three short paragraphs based on the discussion of tDOC, mDOC, and a summary for enhancing clarity.

Line 355: Remove "which."

Done.

Line 356: "larger" than what?

Rephrased to (line 356): "mDOC makes a larger contribution than tDOC to export...".

Figure 10: Note that this figure has larger legends than the others.

The legend sizes have been adjusted for consistency with the other figures.

Line 421: Insert a space between "400" and "ppm."

A space has been inserted.