

Dear Dr Ji-Hyung Park

We revised the manuscript following your suggestions, in particular:

- Lines 35-36, 41 (tracked-changes version): It would be more helpful for readers to understand how you reached these emission estimates, if you provide your selected literature value of k , probably at the first place you mention CO₂ emission estimation (L 35).

We thank you for pointing this out and added $k = 4.46 \text{ m d}^{-1}$ for clarity.

- Lines 195-197: Please refer the cited and other relevant papers (e.g., Wanninkhof et al.; Lauwerwald et al.) to correct "C_{water} - C_{air}" to "pCO₂_{water} – pCO₂_{air}".

We agree and added a relevant sentence together with necessary reference (Lauerwald et al., 2015).

- Line 429: suggest "that" it is; Also clarify what is "it" here?

"...others suggest that DOM photo- and bio-degradation is low.."; revised for clarity.

- Lines 526 & other "needle-lead deciduous trees": Do you mean "needle-leaf deciduous tress"? **"Needle-leaf", corrected. Thanks for catching this; we are sorry for this misprint.**

- Table 3 "R_{Pearson}": Please remove a number superimposed on the title.

Revised accordingly

- Fig. 1: Please add the title to the vertical axis of the lower panel plot.

This is mean multi-annual monthly discharge ($Q, \text{m}^3 \text{ s}^{-1}$), added as necessary.

We thank you for handling our paper

Sincerely

Oleg S Pokrovsky