

## ***Interactive comment on “Spatial variability of surface-water pCO<sub>2</sub> gas exchange in the world’s largest semi-enclosed estuarine system: St. Lawrence Estuary (Canada)” by Ashley Dinauer and Alfonso Mucci***

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I read the manuscript with interest and welcome new data from such an important area which has long been neglected.

In order for the results to be more useful to other users I recommend that the average fluxes also be given according to different salinity ranges. The results are now given for the upper and lower estuaries as well as the gulf. Should the average fluxes be given over different salinity ranges the results would be easier to be integrated into the global carbon flux.

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Besides, dividing data into only three geographical regions misses an important feature. That is, the undersaturation of CO<sub>2</sub> between the 300-600km stretch is neither noted nor discussed. Does the undersaturation correspond to the large river plume where undersaturation is frequently found(see Chen et al., 2012)? Would dividing the data according to salinity better characterize the data?

Two minor points: The red line and the dashed black line in Fig. 9 should be identified. Line 41: the fact that the release of CO<sub>2</sub> from estuaries is balanced by the absorption of CO<sub>2</sub> from shelves was first reported by Chen and Borges(2009) prior to the two references given.

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