

## ***Interactive comment on “Comparison of floating chamber and eddy covariance measurements of lake greenhouse gas fluxes” by E. Podgrajsek et al.***

### **Anonymous Referee #1**

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p. 18317 line 1, see Godwin et al 2013 for another example of convective mixing leading to emission events.

p. 18317 line 17, although the minimum and maximum FC data show some correspondence with the EC data during these time intervals, it should be noted by the authors that a small number of FCs is inadequate to describe the mean weighted areal flux, which is what the EC effectively does. Although this discrepancy between EC and FC is prevalent at this time and has been implicated by others, attempts to reconcile the two budgets by comparing their means persist. The authors identify this important issue, particularly in figure 4. However, they attribute this discrepancy to differences in the continuity of measurements. Clearly this is very important when considering the

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nighttime rates, but what about the influence of spatial variability and variability in the footprint? Did the wind direction change at nightfall?

p.18318 line 5, Do the authors mean that these comparisons are made infrequently or that such comparisons are made at all despite the shortcomings?

p. 18319 line 8 'was not measured'

p. 18320 line 20, is this the first example of convective mixing enhancing FCO<sub>2</sub>?

p. 18321 line 1, It is not clear which comparison is referred to here? Is this the comparison of daytime FCO<sub>2</sub>-FC to nighttime FCO<sub>2</sub>-EC? If nighttime FC data are presented, this is not clear.

p. 18321 line 26, Excellent point. Can this prescription be applied to the current work? What, if anything, do the FC capture that is not captured by the EC?

Figure 2, it is difficult to resolve the individual data points and error bars, could some of the data be integrated over longer time intervals or the time range of the figure shortened?

Figure 3, Is there no uncertainty associated with the EC measurements?

Figure 4, Is there an explanation for the emission peak beginning 9-Oct, as measured by the EC? Is the lake dimictic?

Figure 5, The importance and meaning of this plot are not clear

Figure 6, Does EC2 show more diurnal fluctuation than EC1? If so, why?

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Interactive comment on Biogeosciences Discuss., 10, 18309, 2013.

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