Interactive comment on "Methane and carbon dioxide fluxes over a lake: comparison between eddy covariance, floating chambers and boundary layer method" by Kukka-Maaria Erkkilä et al.

Anonymous Referee #2

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This manuscript compares with three widely used methods (Eddy covariance, Floating chamber and Boundary layer method) applied for measuring CH4 and CO2 flux over the boreal lake surface, which gives valuable information on measurement technique development needs. Variation of CH4 and CO2 flux during stratified and mixing period is both investigated. The results showed there is the deficiency for each method. The main question is as follows: 1) This manuscript compares CH4 and CO2 flux estimated with three BLM methods (KTE, KHE and KCC), and the linear fit results has been shown in table1 and table 2. The author considered the BLM methods with slope ratio closer to 1 as the best one method. Usually the (determination coefficient) r2 and RMSE are used for statistical criteria. As there is intercept, it's doubted that the slope ratio could be effective. Regarding for the r2, the KTE and KHE still have higher r2, and KCC has a lower one. However the conclusion is the same.

We thank the anonymous referee #2 for your comment. We will add discussion about the r^2 value to the text.