Interactive comment on “Micrometeorological measurement of hexachlorobenzene and polychlorinated biphenyl compound air-water gas exchange in Lake Superior and comparison to model predictions” by M. D. Rowe and J. A. Perlinger

Anonymous Referee #2

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General: The manuscript focuses on measurements of HCB and PCBs using novel chemical concentration measurements, this enables using micrometeorological measurements and evaluating fluxes and gas transfer velocities. In addition the “measured fluxes” are compared with model predictions from two different models.

The measurements are unique, well presented and a thorough error analysis is performed. It is motivated to use the models for comparison with the measurements. The
models are, however, well described elsewhere and the text is too dominated by model descriptions.

I question the use of equations 7 and 8. It is well known that a Cen value of 2.6 is too high, the authors support the high value by suggesting that bubbles or buoyancy effects are important. The measurements are taken at low winds and buoyancy effects on kw is not expected to impact Cen, so I do not agree with this motivation for present data. For stable strat Cen is expected to be even lower than the neutral value. For CO2 more recent literature than Wanninkhof 1991 suggests other expressions.

The paper presents interesting results and is well written and is recommended for publication.