

The revised manuscript 'Ozone distributions over southern Lake Michigan: Comparisons between ferry-based observations, shoreline-based DOAS observations and air quality forecast models' by Clearly et al. is much improved and most of the comments were addressed sufficiently. I do however, have some further comments.

1. Most significant concern is regarding the statistical analyses.

To improve the analysis, and as suggested by both reviewers, the authors performed tests to determine statistical significance in comparing the O₃ differences (between offshore and onshore measurements). These tests were done with respect to comparisons between different times of day, but because the authors also discuss comparisons and trends with respect to temperature (or ferry location or wind direction) within a particular time period, it would be prudent to indicate the statistical significance of these comparisons. For example, on p. 13 L. 17-22, 'no observed trend' and 'minor trend for morning times' – these comparisons are within a particular time period.

p. 15-16, L 17-2 Much of this section is confusing. For example, p. 17-L. 22-23 what does 'considered unequal' mean? P. 15 L. 23-24 The rest of what trends? Can you refer to a figure for clarification or provide textual clarification?

2. Minor points

p. 10 L. 5-9 I have a difficult time understanding this sentence; the authors expect mobile land-based sources of NO₂ to be higher during the daytime (higher than what? During the night? Or in comparison to over water daytime emissions or both). There are other non-mobile land-based sources of NO_x though so are the authors trying to distinguish between diurnal behaviours for different NO_x sources? Also what is meant by the larger NO₂ observations from off-shore, larger than what?

p. 15 L. 17-18, please reference the Figure – I presume you mean only d) (1800-0200) of each of Figures 5, 6 and 7??

p. 19 L. 9 Looks like ALL daylight times, not just most.

p. 17 Confused L. 10-12 the authors indicate that they are showing an example of the operational product but in L. 14-15 you say that here you compare with the developmental model product? Which is it? Also last sentence L 17-18 is repetitive (from L 10-12)

p. 18 L. 4 the statistics appear reliable (ie # data points), rather it's the comparison that is not reliable

p. 18 L. 24 It looks to me like the bias is not 'much higher', rather the bias extends to more time periods.

3. Other

In general, I found many typos and grammatical errors that, in some cases, made it particularly difficult to read and understand. I provide a list below, although it is not comprehensive. The authors should take care to go through the manuscript to ensure clarity.

p.7 L. 18 Meteorological?

p. 8 L 13 remove comma after seconds

doas and teco comparison actually on p. 11, not p. 12

p. 17, L 10 typo in the word 'product'

p. 6 L. 14-17 sentence is missing something eg. 'and to' after onshore

p. 18 L 2 typo in ferry

p.15-16 L 24-2 confusing sentence, doesn't make sense

p. 16 L. 7-12 – confusing sentence and too long

p. 3, L. 22 typo in recirculate

p. 10 L. 18 year needs to go after author

p. 3 L 5 typo in evaluates

p. 12 L 12 remove the first at

p. 15-16 L. 24-2, awkwardly worded such that I have to guess at what I'm reading

Fig 8b – difficult to read the scale

p. 17 L. 8-10 – fix initialize, change to initialization AND change times to be consistent with figure eg. 2pm is 14:00 and 9pm is 21:00

p. 18 L 17-21, sentence needs to be grammatically corrected.

p. 19 L 19, typos and sentence problems