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Interactive comment on "Estimation of bubbled-mediated air/sea gas exchange from concurrent DMS and CO_2 transfer velocities at intermediate-high wind speeds" *by* Thomas G. Bell et al.

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Byron, many thanks for your comments. Very helpful and some good suggestions. Three responses to your comments:

1. You are correct that air-side resistance is not a function of gas solubility. We will change the sentence on Line 104-105 to: "The relative contribution of air-side resistance to the total resistance is a function of solubility and thus different for the two gases."

2. I agree that the difference between the Knorr11 and HiWinGS measurements could

be driven by differences in the sea state. I will add Hs, Cp, wave age and whitecap fraction (Wf) data to Table S1.

3. I have already plotted kBubble estimates using an empirical fit to the Knorr11 whitecap data (red and black lines in Figure 8). The differences between the Knorr11 wind speed-Wf fit and other fits that use more recent Wf measurements (e.g. Callaghan et al., 2008; Schwendeman and Thomson, 2015) are small. I agree that eventually the COAREG B parameter should be tuned to fit observations. Once more data has been collected I think that this is a good idea. However, given the large discrepancy between the models and these first observations of kBubble, I do not see the value of adjusting the COARE model at this point.

4. I will consider adding gridlines to the plots where possible. However, I will not add gridlines if they make it difficult to see the data on the plots.

References:

Callaghan, A. H., de Leeuw, G., Cohen, L., and O'Dowd, C. D.: Relationship of oceanic whitecap coverage to wind speed and wind history, Geophysical Research Letters, 35, L23609, 10.1029/2008gl036165, 2008. Schwendeman, M., and Thomson, J.: Observations of whitecap coverage and the relation to wind stress, wave slope, and turbulent dissipation, Journal of Geophysical Research: Oceans, 120, 8346-8363, 10.1002/2015jc011196, 2015.

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