Author's response:

We thank Byron Blomquist for his suggestions. We have prepared a revised version of the manuscript based on these comments and highlighted these changes in yellow. Below are our detailed line-by-line responses.

R1: I think the authors have addressed the most significant concerns and this version is suitable for publication with a couple minor additions. If they wish to use the Nightingale transfer coefficient model to estimate DMS fluxes for comparison with Lana et al., that's OK, but they should indicate that we now know the models with quadratic wind speed dependence are not representative of DMS transfer and will give significant overestimates for wind speeds above 10 m/s.

Authors: The referee is right. We have added this information regarding the transfer models in the manuscript (Section 2.3).

R2: Food for thought: A revision to the Lana et al. 2011 global DMS model is in preparation. I am hoping authors of this revision will address some of the deficiencies in the DMS transfer estimate. But, direct observations from the region covered by this manuscript are still sparse and not representative of the entire ENSO cycle (according to the conclusions of this paper). Nutrient measurements from this region are likely much better represented over all seasons. I wonder if the authors feel the correlation with N:P could be used to help validate the reasonableness of the new global DMS climatology, or perhaps even find use as a predictive factor for surface seawater DMS?

Authors: We tried to incorporate the N:P ratios and corresponding DMS concentrations which were measured previously in surface seawater off the Peruvian upwelling in June/July 1982 (Andreae, 1985) into our analysis. However, the N:P ratios and DMS concentrations from Andreae (1985) were not correlated, which indicates that N:P ratios are not a good predictor for surface seawater DMS over all seasons off the coastal Peruvian upwelling. Therefore, we think N:P values cannot help with the validation or prediction of DMS in this revised climatology.