

The authors would like to thank reviewer 1 for their review, and as a result, we have made several changes.

P7839 L10 - Do the scattering angles vary from a scattering angle of 60 deg to a scattering angle of 160 deg, or does the max difference in scattering angles between 9 cameras vary between 60-160 deg. Please be more specific here.

The reviewer makes a good point, as this is ambiguous. We have revised the statement to be clear that we are talking about scattering angle values (Minimum of roughly 60 degrees, maximum of roughly 160 degrees). This is the typical range of scattering angles sampled in mid-latitudes.

P7841 L11-18: How does the RA represent the ocean surface now? The paragraph seems to end suddenly without saying this. P7841 L19-end-of-paragraph: This paragraph seems out of place. What does this have to do with “Retrieval algorithm setup”?

The same surface roughness and whitecap models are still used (but with the adjustments to the whitecap model described in 3.2), as is the 40 degree glint exclusion region. We have revised this paragraph to be clear that these are still used, and have moved the reference to the 2005 paper to section 3.2.

Table 5 and Section 3.1: What is the adjustment described in Section 3.1 called in Table 5? I guess it is “median or min” but I don’t see it explicitly stated.

That is correct, and the definition of this technique as median-or-minimum is found on page 7849 Line 4.

Figure 5 and Section 3.2: So the retrieved blue AOD is higher when the ocean surface improvements are included? Please make sure the direction of the changes is clear.

Figure 5 shows retrieved AOD on a band-by-band basis. The inclusion of an under-light model has substantially lowered the bias in the blue, but it is still very high for other reasons (such as poor constraints on the aerosol optical models in the blue, and sensitivity to aerosol vertical distribution, and still possibly under-light). This highlights why this wavelength is not suitable for dark-water retrievals. As for the text in Section 3.2, it seems that we are consistent with the figure. The text states that the bias has decreased by about 0.1.

P7851: The two instances of “and conversely” here seem unnecessary, and they are a little odd for ending a sentence. Would anyone assume that the converse wouldn’t be true here?

We agree, and we have corrected this.

Section 4.4: NCF is not defined. Is it non-cloudy fraction? Are then NCF and FNC the inverse of each other? Why do both of these terms have negatives in them? Cloudy fraction or clear fraction would be a bit less mind bending

Thank you for pointing this out. We have changed all NCF references to FNC (one less redundant acronym is always better). NCF is non-clear fraction, and should just be FNC (fraction not-clear, described on Page 7846, Line 8). We use the term fraction not-clear because we are not entirely confident that there are always clouds in these sub-regions designated as not-clear (RetrAppMask=0).