

Peer review for Su et al paper.

Overall impression: Publish pending very major revisions.

General comments:

1. Whereas the overall research is of great importance as the various EOS algorithms are moving into the JPSS era, this paper is plain and simple incomplete. The authors give a pretty good discussion of the footprint size difference estimation experiments, in the title and the abstract they speak of retrieval algorithm differences as well, yet in the text the treatment of retrieval algorithm barely gets a sentence or two. I feel like the entire discussion of the retrieval algorithm is missing. In research it is important for published result to be reproducible to at least some degree. This work is definitely not reproducible. The footprint difference evaluation needs more detail and the algorithm difference evaluation plain and simple needs to be written.

2. Throughout, please consider the audience may not know what your different acronyms are. Please expand in text or provide an acronym table.

Specific comments:

Line 7: CERES, first mention of the instrument, please expand

Line 12: same thing for VIIRS and MODIS, consider the audience may not know what the acronyms are.

Line 26: "cloud property differences", elaborate what exact cloud properties you mean

Line 48: "flied" is not a word

Line 49: "were launch" is grammatically incorrect

Line 56-57: spacecrafts is not a word

Lines 115-117: why have you not considered the scattering angle?

Line 128: "the nighttime LW radiance is simply from the total channel measurements" doesn't make any sense.

Line 157: snow /no snow conditions, how are you getting this information?

Line 159: "to derived" is grammatically incorrect

Line 163-166: how are you getting snow/no snow information?

Line 178: replace 'assessed' with 'ascertained'

You talk about the simulated footprint generation, but where is the discussion of the algorithm differences? "We tweaked it" is not good enough.

Line 192: "that consist with" is not English, "result in less footprints" is not either.

Line 204-210: Why? Please explain

Line 224-227: This does not make any sense to anyone who might theoretically even consider checking your results.

Line 235: Why did your flux increase? Explain

Line 273: replace 'is' with 'are'

Line 275: replace 'these' with 'that'

Line 282: replace 'thus' with 'to'

Comments on figures:

Figure 2: so these CERES footprints are misaligned like that in real life or just in illustration? Please clarify.

Figures 3-6: can't be evaluated because I don't know what I'm looking at. There is no explanation in the text as to why the images look they way they do. Could be a thousand different reasons, so figures do not make sense.