

***Interactive comment on* “Screening for Snow/Snowmelt in SNPP VIIRS Aerosol Optical Depth Algorithm” by Jingfeng Huang et al.**

Anonymous Referee #4

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This paper described the snow/snowmelt screening scheme for VIIRS AOD. The presentation is quite clear and the article is well-organized and concise. The method obviously works well as it has been implemented in the NOAA operation. It will be a useful documentation for the VIIRS AOD users.

Specific points:

Title: AOT is used throughout the manuscript. Why is aerosol optical DEPTH used in the title?

Line 49: The word "artificial" is redundant here.

Lines 76-78: It is stated that the snow screening tests "are designed to prevent the aerosol algorithm from making retrievals in inappropriate snow cover conditions" al-

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though true Snow/Ice products are also available (Key et al., 2013). Can the authors comment on why the VIIRS Snow/Ice products are not used in the AOD algorithm?

Line 99-103: They are identical to those listed in Table 1. It is better not to repeat the same words. Same for lines 149-153, 176-178.

Line 153: has been set 0.01 in Mx8.10 and in newer versions -> has been set to 0.01 in Mx8.10 and newer versions

Line 170: Are the 7x7 area centered around the snow pixel?

Line 188: Something does not correctly show after the parenthesis.

Line 206: Please elaborate what are the criteria for the careful selection?

Lines 219-281: These two paragraphs are too long. Try breaking them into short ones.

Line 432: The sorting is not right here. This reference should be moved to Line 401.

Figure 1: Difficult to read. Please improve the quality of the image.

Figure 3: The three colors for the last three populations are too difficult to differentiate. Please change them to other distinct colors.

Figure 4: Difficult to read. Please improve the quality of the image.

Figure 5: Some "N of Good AOT" numbers in (b) are greater than "N of Top2AOT" in some latitude bins (e.g. lat=60). Something seems wrong here.

Figure 5: Showing "-100" and "100" for Latitude Bins should be avoided.

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