

Interactive comment on “Improved cloud mask algorithm for FY-3A/VIRR data over the northwest region of China” by X. Wang et al.

Anonymous Referee #1

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This paper presents an unbiased daytime cloud detection algorithm for the FY-3A/VIRR. Progresses have been made to identify the cloud over snow-covered and desert areas. This work is very important and interesting since accurate cloud masking is a very difficult problem over snow/desert area. It is well written and organized, and worth to be published. I only have few comments required the paper to be revised accordingly.

1. On page 2 line 15, recommend to change “variable” to “various”. There are several other place need to make changes, such as page 5 line 78.
2. On page 5 line 85, “NDSII” should be “NDSI”?

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Section 4.1 Comparison with official cloud mask product and MOD35

The authors use MODIS cloud mask product (MOD35) as a high-quality cloud mask product to validate the proposal algorithm through two indices: POD and FAR. However, the paper provides very little information about how do the MODIS and VIRR collocated, what are the collocated criteria? If there is time difference between MODIS and VIRR observations at the same place, how it will change the two parameters?

On page 16, lines 327 to 329: “Focused on the cloudy pixels for the case over desert, the values of POD for the new cloud mask scheme and the VIRR official cloud mask product are 53.261% and 67.217%, respectively”. If it is the case, the new cloud mask should be worse than the VIRR official cloud mask product.

On page 17, lines 345 to 347: “Focused on the clear-sky pixels for the case over snow, the values of FAR for the new cloud mask scheme and the VIRR official cloud mask product are 43.345% and 32.485%, respectively, . . .”. Same conclusion can be draw that the new cloud mask is worse than the VIRR official cloud mask product. Please correct the obvious errors which are not consistent with the paper’s conclusion.

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 8189, 2012.

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