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Interactive comment on "A total sky cloud detection method using real clear sky background" *by* J. Yang et al.

Anonymous Referee #1

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The authors describe and demonstrate a cloud detection algorithm for total sky images. This method takes full advantage of the sun position, which can be easy to be localized based on longitude and latitude of the TCI and the time of cacpturing a total sky image, and constructs a real clear sky background library to eliminate background of total sky images. The proposed method sounds good and describes with results reasonably compared to other methods.

Specific Comments: 1. Pg2 line 10. rewrite "Sensitivity tests show, as long as the positions of the sun in the two images are the same, the cloud detection results are satisfactory".

2. Pg2 line 20. The phrase "cloud coverage measurement accuracy" in "However,the subjectivity of visual observations introduces significant uncertainty into cloud coverage

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measurement accuracy." can be revised to "the accuracy of cloud coverage measurement". Please check other similar noun phrase.

3. Pg9 line 15. Clarify "By analyzing the brightness histograms of the green channels,the gray values of the cloudy image are adjusted, pixel by pixel, by multiplying or dividing by a number to ensure the two green channel images have the similar background brightness distribution.". How do you define the number?

4. Pg5 line 10. "It is true the simulated background sometimes ..." to "It is true that the simulated background sometimes ..."

5. Pg7 line 5. rewrite "Then, for any TCI cloudy image, the longitude and latitude and its ..."

6. Pg13 line5. rewrite "However, Yang et al. (2015) suggested using the 1-D green channel of the RGB image to instead of the 2-D R=B and the 3-D RGB methods in the cloud detection methods 10 by analyzing the imaging principle of the color camera."

7. Please double check all the usage of articles.

8. The labels (a, b, c, and d) of subimage in Fig3 - Fig10 should be placed at the bottom of each figure.

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