Atmospheric Measurement Techniques

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Discussions

Interactive comment on "Block based cloud classification with statistical features and distribution of local texture features" *by* H.-Y. Cheng and C.-C. Yu

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Page 11782, line 15: Yes, in the process of block division, the cloud coverage percentage is lost. However, the cloud coverage percentage is only one of the features in the 12-dimensional statistical feature vector in the work of Heinle et al. 2010. And actually the cloud coverage percentage is prone to be erroneous using R/B ratio cloud detection method. As a result, the advantage of reducing the cases of mixing features of different classes is more important than the loss of cloud coverage percentage information. If a more robust and accurate cloud detection result can be obtained, the information can be used in the post processing stage. However, with current cloud detection results

via RB ratio thresholding, we are very conservative when correcting the classification results using cloud coverage information in the post processing stage. In figure 12, we have validated that using voting would result in better classification accuracy for our dataset.

Page 11783, line 3: There are 9 votes for class 3, 8 votes for class 1, and 6 votes for class 4 in Fig.6. Line 3 should be revised as: "From the classification results in Fig. 6, we have the knowledge that there are more votes for class 3 than other classes in this all-sky image.

Figure 7 and relevant text: The purpose of including the images with the line caused by the sunlight is to train the classifier to avoid classifying them as clouds.

Figure 8 and relevant text: Thank you for the comment. We check the ground truth, the first example is labeled as cirrostratus and cumulus. We have corrected the manuscript.

Due to the privacy issue of the data provider, we were requested to use a mask on the image to eliminate the surrounding buildings. We have added the statement about the mask in the manuscript.

Figure 10 and relevant text: For the selection of training and testing images, we have specified that we use 10-fold cross validation. We have enough image blocks for all cloud types. For the variation of solar zenith angles, we include all the positions within the mask. We do not empathize classifying the clouds close to the horizon since the purpose of this work is for solar irradiance prediction.

Page 11776, line 20: Thank you for the comment. We revised the manuscript as "Altocumulus or scattered cumulus clouds are middle to low altitude clouds."

Page 11776, lines 5-15: With the proposed classification results, the subsequent applications can have the knowledge of which cloud type appearing at which position.