

Atmos. Meas. Tech. Discuss., referee comment RC2  
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## Comment on amt-2021-379

Anonymous Referee #2

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Referee comment on "An all-sky camera image classification method using cloud cover features" by Xiaotong Li et al., Atmos. Meas. Tech. Discuss.,  
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### General comments

The paper addressed an interesting and challenging topic of cloud classification. Clearly, there is constant need of approximating the quality of obtained or planned measurements in astronomy, for example. As to my knowlegde, this need is decades old – and so are some early simple solutions. This time span was not mentioned in the paper. The references, dominately dating to recent years, seemed anyway well selected.

### Specific comments

In my opinion, the central research topic addressed in this paper was recognition of single pixels cloudy or cloud-free. Performance of all the other findings or suggestions are subject to that. As to recognition, the central idea was to compare (subtract/correlate) each routinely measured image with a clear sky an image obtained at the same date (ie. with the same position of the sun). As we are essentially discussing automated classification here, it remained unclear to me how these cloudless images are routinely obtained? And how does the algorithm perform if there is cloud near but not (fully) overlapping the sun? (I wondered if that area should be outright regarded useless and left out in calculations,instead.) But you make a strong claim! (Line: 232: "Generally speaking, the cloud detection accuracy of traditional methods around the sun and near-horizon regions is relatively low, but the method used in this paper can achieve better results in all regions.")

### Technical Corrections

Line 16: The starting sentence (!) contains the word "polymer", a term related to chains of molecules? Speaking about clouds, I wonder if you actually thought of \*aerosols\* instead?

Line 65: Finally, \*it is our conclusion\* in Section 5.

102: criteria is (are?)

112: I don't understand explanation of (1): esp. those several N classes. If you have thought of different technologies/applications like satellite imagery and land classes (forest, fields, waterways, urban areas,...) you could say that, or directly start from two classes focused: cloudy and cloud-free.

Figure 4. The left-hand image (a) is claimed to be original, but looks suspiciously thresholded. The other one (b) looks more like an original. Maybe I just did not understand.