

Atmos. Meas. Tech. Discuss., referee comment RC1  
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## Comment on amt-2021-405

Anonymous Referee #1

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Referee comment on "Identification of tropical cyclones via deep convolutional neural network based on satellite cloud images" by Biao Tong et al., Atmos. Meas. Tech. Discuss., <https://doi.org/10.5194/amt-2021-405-RC1>, 2021

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### General comments:

This paper focuses on the identification of TCs based on satellite cloud images via DCNN techniques. Two models are proposed to deal with identification issues associated with two kinds of SCIs that are widely utilized in this field. Visualization techniques are further adopted to examine how the DCNN models work internally. Overall, the article is well organized and written. Both the methodology (including datasets and models/methods) and main results are presented and discussed clearly and reasonably. The results are interesting and useful. This reviewer suggests the article be accepted after minor revision.

### Specific Comments:

- Abstract: "lack of concerns on the identification of TC fingerprint from SCIs have become a potential issue, since it is a prerequisite step for follow-up analyses". Please revise this sentence to improve its readability, meanwhile, have may be replaced by has.
- L66: there lacks a blank
- Line 131: tend--tends
- Section 2.2.1: the authors use rotation technique for data augmentation. As discussed in this section, some information of the image may be lost. Will this operation result in any influence on the identification results?
- Line 148: have—has
- Line 174: to judging
- Lines 178, 182, 208: format (especially for where)
- The authors proposed two DCNN models. Although associated prediction results seem to be quite good, how about the comparative performance of these models against others?
- The authors report two types of heat maps which vary with each other evidently. Are there any reasons for why there will be such two kinds of heat maps?

- Section 3.2.1: it seems that to use the IP technology the authors have to extract zoom-in view of TCs from the NWPO picture If it is the case, how to do this?