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Interactive comment on "Characterisation of the artificial neural network CiPS for cirrus cloud remote sensing with MSG/SEVIRI" *by* Johan Strandgren et al.

Anonymous Referee #1

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General comment

This study describes the performance of the ANN CiPS, used to retrieve cirrus cloud properties from MSG SEVIRI. The assessment includes analyses based on different land cover types, vertical arrangements of clouds and aerosols, retrieved cloud properties and sensitivity to noise in primary observations. It is within the scope of AMT, generally well structured, and the results are adequately presented and explained. Since it can contribute to the overall understanding on the performance, advantages and limitations of ANNs used for cloud properties retrievals, I recommend publication of this study after some minor clarifications and corrections given below.

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Discussion paper

Specific Comments

Section 3.2

A table would be useful here for better visualizing which input variables were used in each ANN. Since this is provided in Strandgren et al. (2017), the authors could refer to Table 2 of that study.

Section 4

While the OPF flag is an output of CiPS, it is not clear how it was treated in this study; was it just used for excluding opaque cirrus retrievals when characterising other CiPS output? Please clarify.

Section 4.3.2

First paragraph: It would be helpful for the reader if Fig. 5 was also referred here.

Section 4.5

Page 17, lines 8-10: This sentence provides general information on the CiPS training and evaluation data sets. The authors should consider adding this information to Section 2.3, in order to make more clear how the collocation, training and validation data sets are related.

Technical corrections

Page 3, line 27: the word "used" is repeated.

Page 10, line 12: Please replace "...are visualised..." with "...is visualised..."

Page 11, line 3: Please replace "liquid water/aerosol" with "liquid water cloud/aerosol".

Page 13, line 22: Please omit the second "the".

Page 14, line 12: "...liquid water..." should be replaced with "...liquid water clouds..."

Page 21, line 28: Please replace "increases" with "increase".

Page 22, lines 13-14: "... adjacent liquid water clouds..." should be "... adjacent to liquid water clouds..."