

Interactive comment on “Applying machine learning methods to detect convection using GOES-16 ABI data” by Yoonjin Lee et al.

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The authors greatly appreciate valuable comments from the two reviewers. Line numbers in this response is referring to the line numbers in the revised manuscript.

1. Details about the training process are missing:

(a) Number of epochs or iterations

The number of epochs are mentioned in lines 244-253.

(b) Optimizer used (Adam, SGD, ...)

Optimizer RMSprop is mentioned in lines 247 and 249.

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(c) The switching criteria during training between the two loss functions is not very well specified (line 228 mentions "a low steady value" which is a too much generic statement)

The sentence with "a low steady value" is changed to "a low steady value that no longer improves (which is determined by looking at the convergence plot of the loss function, the number of overlapping grid points between true and predicted convective regions as well as the sum of each true and predicted convective regions)" in lines 232-234.

(d) It's not clear if the output/ground truth is a single image or 5 images, and what is the timestep of the MRMS data (the ground truth)

More explanation is added in lines 155-156. "Five MRMS data with two-minute intervals are combined to produce one output map for the model, and grid points are assigned to 1 if the grid point is assigned as convective at least once during the five time steps."

2. Many figures are very hard to read or details are missing:

(a) Figures 6, 7, 8, 9, 10, 13 have too much useless white space. Please zoom the area to show only the relevant data.

All the figures are updated.

(b) Figure 1: insert the actual size of the input and output tensors (this helps clarifying also point 1.d)

Figure 1 is updated.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2020-420, 2020.

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