

Interactive comment on “OzoNet: Atmospheric Ozone Interpolation with Deep Convolutional Neural Networks” by Mohamed Akram Zaytar and Chaker El Amrani

Anonymous Referee #1

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The paper discusses the method of interpolation of ozone field with data gaps using convolutional neural networks. Comparison with some traditional interpolation methods is performed. My comments are below.

1) Unfortunately, the paper is written in a very unclear way with poor English. This disturbs strongly the paper reading and understanding. The help of native or advanced English speakers is mandatory. In addition, the style should correspond the style of scientific paper (acronyms and abbreviations should be explained at first appearance; data should be described in the text, while technical details should be shortened and/or collected in tables and appendices (not in itemized list as in the present version e.g. in

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page 2); references should be according to Copernicus publication style etc.).

2) The objective for developing the interpolation method of the ozone field should be clearly stated. From the general point of view, filling data gaps by any kind of interpolation might introduce errors. Therefore, necessity of interpolation should be explained. Also some extreme cases should be illustrated, for example, when significant part of a plume is missing in the data. A discussion on data coverage, which is required for accurate interpolation, is also needed.

3) There are advanced interpolation methods that use information about the structure of data field (kriging). It would be advantageous to compare the interpolation results using CNN and kriging.

4) The description of OzoNet system is missing. A more detailed description is needed, with explanation what is contained in the Supplement.

5) I recommend naming cubic, linear and nearest-neighbors interpolation as “traditional methods”.

6) Since the OzoNet uses nearest-neighbors interpolated field as an input, the total OzoNet latency is actually the sum of two latencies: from “nearest-neighbors” and from the neural network interpolation.

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<https://doi.org/10.5194/gi-2018-53>, 2019.

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