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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Future changes in surface ozone over the Mediterranean basin in the framework of the Chemistry-Aerosol Mediterranean Experiment (ChArMEx)" *by* Nizar Jaidan et al.

Anonymous Referee #2

Received and published: 5 September 2017

Review of Nizar et al.

This is a paper of interest to the CHARMEX community, providing a reasonably standard analysis of a series of models and their performance over the Mediterranean basin for various scenarios (RCP; time slices). However, I find that the paper describes many model results, but does not attempt sufficiently to explain their performance (e.g., why they differ from observations, why there are outliers). Furthermore, I see little evidence explaining the credibility of the model results for the future scenarios. For this reason, in my view the paper is not ready for publication in ACP. The authors should try to

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Discussion paper

address these points, perhaps engaging in intelligent speculation if needed.

The authors should also address the specific comments below.

Specific comments

P. 3:

L. 22: With multiple citations stick to either an alphabetical scheme or a chronological scheme, but do not mix them.

P. 6

L. 84: uses -> use.

P. 9

L. 158: Introduce acronym for ppbv. Make sure all acronyms are introduced, both in the abstract and in the main manuscript.

P. 10

L. 171: Why do these models represent best the annual cycle of surface O3?

P. 12

L. 214: Why do these models show less variability than the observations?

P. 13

L. 239-242: What is the reason for this behaviour in the models?

P. 14

L. 256: Is this trend significant?

L. 267: probably -> likely.

P. 15

L. 279: asset -> assets.

P. 16

L. 306: Why are these models outliers?

P. 17

L. 314: You mean the simulated emissions, correct?

P. 19

L. 364-370: How credible are these model results?

P. 23

Conclusions: The authors should consider splitting this into a discussion section and a short conclusions section.

Table 1: The paper mentions 11 models, but the table suggests that less are used. Could the authors clarify this.

Fig. 4 caption: I suggest you indicate what the endpoints of the colour scale mean. Same for similar figures.

Fig, 6 caption. Indicate what the coloured ellipses mean.

Fig. 7 caption: "... The metrics used...".

Fig. 8 caption: Identify the colour scheme in the caption. Same for Figs. 12, 13.

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2017-553, 2017.