

Interactive comment on “The MACC reanalysis: an 8-yr data set of atmospheric composition” by A. Inness et al.

Anonymous Referee #1

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General comments:

The authors presented an overview of an assimilation system developed and used in the course of the MACC project. The provided reanalysis of an 8-yr data set of CO, O₃, NO_x, and HCHO species represents an effort to derive a coherent set of tropospheric and stratospheric fields that are of high importance to the atmospheric modelling community.

I recommend the paper be published after some minor issues are addressed.

Other comments:

Page 31249 line 17: “in most situations” – in most seasons/regions?

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Page 31253 line 11: “and harmful at high concentrations” – harmful to whom?

Page 31253 line 23 and 25: “Austral” vs. “boreal” – please make it consistent.

Page 31254 line 1: “clear oceans” – what does it mean?

Page 31255 line 23: “wave number of T255” – letter “T” belongs to the truncation type not to a wave number. The whole sentence is confusing and inaccurate. Please re-write this sentence.

Page 31258 line 19: “JNO₂ depends on . . .” – please add “solar flux”

Page 31261 line 1 and 2: “mixing ratios” and then “concentrations” these should not be used interchangeably.

Page 31261 line 27: “the Troposphere” should be “The Troposphere” – sounds strange but this is the way J. R. Drummond named the instrument.

Page 31263 line 27: “diffusion” – please add “vertical”.

Page 31273 line 1: “Brewer-Dobson observations” – these are two different instruments. Do you mean “observations made with Brewer and Dobson Spectrophotometers”?

Page 31274 line 8: “ozone layer is very thin and values around” – values of what? Do you mean “partial pressure”?

Page 31275 line 21: “WOUDC, SHADOZ, NDACC” – please expand or add a footnote.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 31247, 2012.

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