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Geoscientific Model Development
Discussions
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Interactive comment on "Twelve-month, 12 km resolution North American WRF-Chem v3.4 air quality simulation: performance evaluation" *by* C. W. Tessum et al.

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Comment: The manuscript is well written and exhaustive, and will provide an excellent reference for future studies using WRF-Chem at 12 km resolution.

Response: We thank the reviewer for this comment.

Comment: I do not have any major comment on the manuscript and I think that it could be published as is.

Response: We thank the reviewer for this comment.

Comment: [I] agree with reviewer number 1 that seasonal statistics are more useful

than annual statistics, but I do find annual statistics interesting to get a first idea of the model performances.

Response: We agree that both sets of statistics are useful.

Comment: I suggest to add some maps of the different species making up for PM2.5 to the main text.

Response: As mentioned above, we have added the figures for PM2.5 subspecies to the main text.

Comment: Some species are more sensitive to emission errors, other to scavenging efficiency, others result from chemistry, so comparing these measurements can give an idea of what is causing the bias.

Response: We agree that these comparisons are useful, and we have tried to suggest possible reasons for the model errors we observer wherever possible.

Interactive comment on Geosci. Model Dev. Discuss., 7, 8433, 2014.