

## ***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.***

### **Anonymous Referee #2**

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In this manuscript the authors present an evaluation of the regional 12 km WRF-Chem CTM, coupled to the RACM chemistry mechanism and the MADE aerosol model. In particular, the authors present evaluation for PM<sub>2.5</sub> and ozone. The manuscript is well written and exhaustive, and will provide an excellent reference for future studies using WRF-Chem at 12 km resolution. I do not have any major comment on the manuscript and I think that it could be published as is. 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. I suggest to add some maps of the different species making up for PM<sub>2.5</sub> to the main text. Some species are more sensitive to emission errors, other to scavenging efficiency, others result from chemistry, so

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comparing these measurements can give an idea of what is causing the bias.

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

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