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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Modeling ozone plumes observed downwind of New York City over the North Atlantic Ocean during the ICARTT field campaign" *by* S.-H. Lee et al.

Anonymous Referee #2

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The authors presented a nice analysis to show the evolution of urban plumes from NYC using airborne measurements and model results. They did solid work to demonstrate the importance of the right IC/BCs in regional air quality simulation, which is one major aspect of the paper. Information on model simulations needs to be provided more clearly to avoid confusion. Specifically:

1. Which simulations were used for Section 4.2? This sort of information should be provided explicitly up front.

2. How were the background levels of O3 and CO defined? Page 16, line 4: the simulated CO mixing ratios averaged along the flight track were lower than the observed

by ∼40 ppbv, and the authors sated that it indicated a lower "background level" in the simulated mixing ratio. It could be many things that contributed to this model underprediction, among which lower emissions of CO could be one. Why is it necessarily due to the underpredicted background level only? And what is this "background" level? A clear definition is needed.

3. Page 16, lines 6-9: again, which simulations were being analyzed here? After one finishes reading the whole paper, it became pretty obvious that the controlled run was used in this section. If information like this was clearly given up front, it spares readers from guessing.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 14031, 2011.