

Interactive comment on “Impact of model resolution on chemical ozone formation in Mexico City; application of the WRF-Chem model” by X. Tie et al.

Anonymous Referee #1

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General Comments

The authors present a study about the influence of different grid scaling in the formation of ozone in central Mexico, the study concentrates mainly in the horizontal dimension. In the document the authors explain the chemical model used, also describe the network of measurement sites and explain the issues related to the use of different grid scaling. In the text is presented the results obtained by applying different scales, those results have difference among them. The authors used carbon monoxide (CO) as tracer of the meteorological transport and ozone as photochemical indicator of the differences obtained in the photochemistry.

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The authors explain three different issues related to the change of the grid scale (meteorology, emissions and photochemistry). However there is another dimension to be considered the vertical structure in the model that also has to be changed if the horizontal scale varies.

The authors describe the issues related to the change of the grid dimension. Their finding, as they point out, may be suitable only for Mexico. Therefore the results have only local application. As technical information it is interesting and can be published as technical note in order to be considered by other researchers in the field. This work is shorter than other similar (i.e. Miseneris et al 2010)

Specific comments

There is no explanation about the way that the authors extract the concentrations values from the model, it is possible to obtain the station values by bilinear interpolation but also is possible to do an average of the stations and compare with model results. It is possible that the authors are comparing volume average (model) against point values, and it can lead differences between measurements and model.

Reference:

Miseneris, C., Zhang, Y. An examination of sensitivity of WRF/Chem predictions to physical parameterizations, horizontal grid spacing, and nesting options Atmospheric Research, . Article in Press.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 9801, 2010.

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