

HTAP Impacts on Air Quality

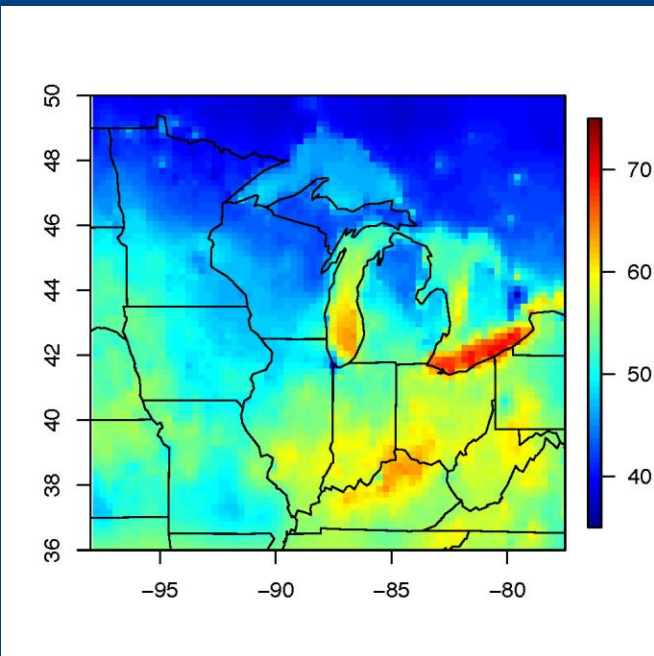
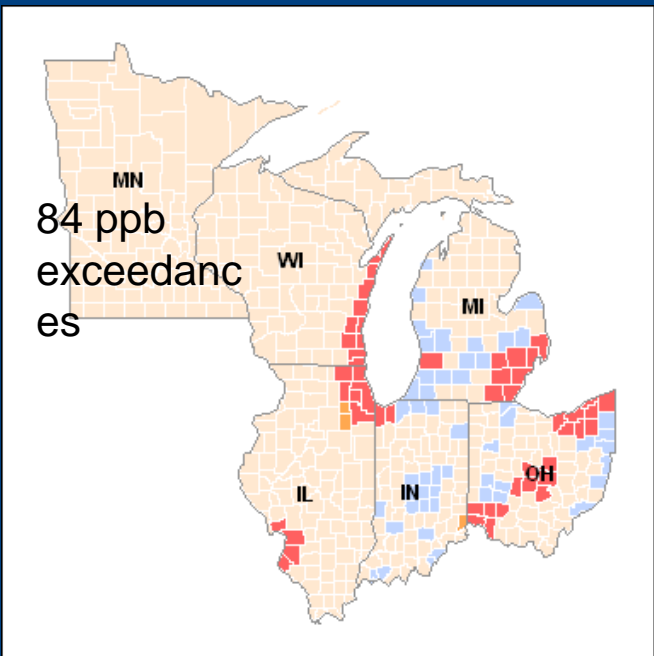
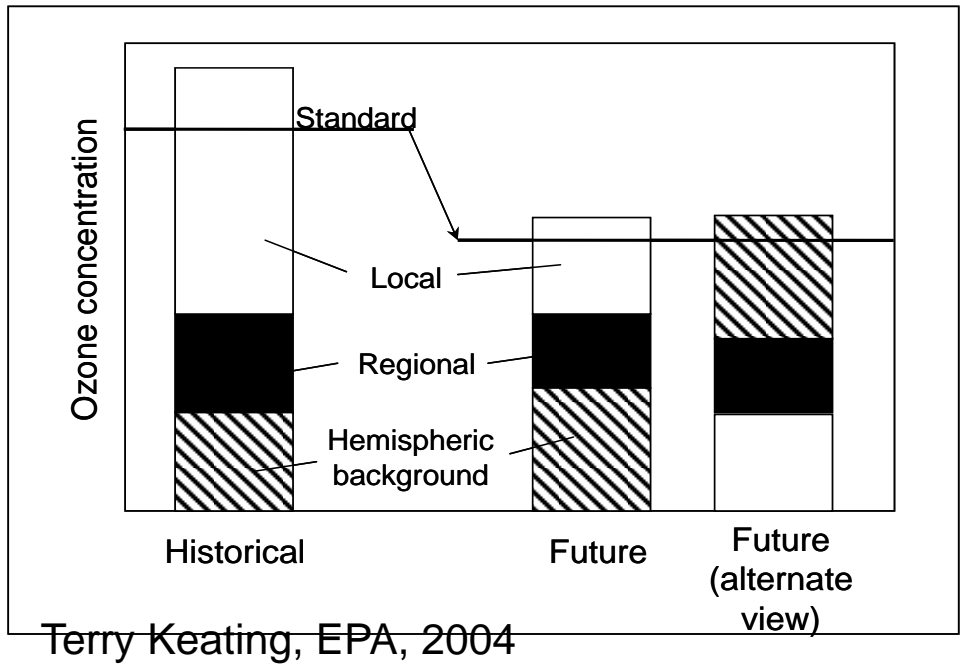
Discussion Notes

June 12, 2008

Washington DC

Motivating questions

- Are **sensitivity analyses** enough for AQ analysis (or are total contributions needed?)
- How well do the global models simulate **air quality** ... vs. obs? ... vs. regional models?
- Do we need more analysis of spatial or temporal **variability**? (regions, day-to-day, year-to-year)
- How to quantify **uncertainty**?



2002 JJA
O₃ from
CMAQ



Setting the Stage

- HTAP and O₃ air so far... (*Arlene Fiore*)
- HTAP results from a regional model (*Jerry Lin*)
- HTAP & AQ; Lessons from PhotoComp (*Frank Dentener*)
- Plans for examining HTAP results over U.S. regions (*Dave Reidmiller & Dan Jaffe*)
- HTAP and aerosols (*Mian Chin*)

Analysis Needs

- More examination of **episodes** (both for aq relevance, and to evaluate model skill)
- Analysis of **chemical ratios** ($O_3:NO_y$, $H_2O_2:HNO_3$, etc.) ... or other budget terms to evaluate processes
- Careful, **regional-specific** obs to model comparison
- Analysis of impacts and chemistry in **cities**
- More discussion of **observational QA protocols**; selection of appropriate measurement sites for comparison
- Calculate **contributions** (how?)

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selection of appropriate me **Europe: Rita Vandingenen;**
comparison **Asia: TBD**
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Possible Additional Runs

- different years for **interannual variability**
- a more **up-to-date** year for emissions
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**Jerry Lin, Joshua Fu,
Greg Carmichael, Tracey
Holloway, other MICS-
Asia participants....**

You?

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Summary

- To maximize relevancy to air quality, **more analysis could be performed** on current HTAP simulations (especially selecting smaller receptor cites/regions)
- “**How much is local vs. foreign?**” is difficult to answer definitively ... but it would be most useful to policymakers
- **Higher resolution** global models and planned engagement with **regional modeling groups** will increase relevancy to air quality analysis