

1. Introduction



5. Next Steps



Air Pollution at Northern Mid-latitudes in a Future Climate

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(2) Evaluate air quality – meteorology relationships



July mean of max daily temp. (C)

Regional variability in the ozone-temperature relationship, plotted here as July mean daily maximum 8-hour average (MDA8) O_3 (ppb) vs. July mean daily max temperature (°C) from 1989 to 2004 at selected U.S. CASTNet sites in the northeast (Penn State, PA), far northeas (Ashland, ME), southeast (Sand Mountain, AL and western (Pinedale, WY) U.S.

How well are observed relationships (such as ozone-temperature, left) represented in global chemistrytransport models?

What other observed relationships should we use for model evaluation? *e.g.*, increase in high- O_3 events with decreasing frequency of migratory cyclones as determined from a recent observational analysis for the northeastern U.S. [Leibensperger et al., 2008]

(3) Determine whether modeled meteorological changes are forced by climate change (versus internal variability)

2. Simulations in the GFDL AM3 Chemistry-Climate Model

6. References

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