A Challenge for TF HTAP

- How do we get the S/R relationships derived from the HTAP experiments into the hands of policy analysts and enable them to explore different policy scenarios?
- Can we create a framework that can use such S/R relationships (or scenarios) from other projects (e.g., FASST, CCAC screening tool, ...)?
- Can we make such an analysis tool available via the web?

An Opportunity from AQAST

- NASA's Air Quality Applied Science Team (AQAST) is a team of 23+ experts who are funded for 5 years to serve the needs of the U.S. air quality management community through the use of Earth Science satellite data, suborbital data, and models.
- Each year, AQAST members form Tiger Teams to address a set of quick-turnaround projects, which are selected with input from the air quality management community.
- In 2012, Scott Spak and Greg Carmichael posed the following problem to be addressed by a Tiger Team:

How can we translate research-grade sensitivity modeling into intuitive decision support tools for use by air quality managers, and then employ satellite data assimilation to improve the quality of directly policy-relevant information?

An Opportunity from AQAST

In 2013, the concept was incorporated as one task into a proposed AQAST project:

Web-Enabled Tools for Air Quality Management Decision Support

Lead PIs: Jim Szykman and Scott Spak

- AQAST Members: Greg Carmichael, Daven Henze, Dick McNider, and Brad Pierce
- Deliverable 3) "A new interoperable web-based decision support tool to translate response surfaces from user-generated source-receptor relationships and adjoint and forward sensitivity model simulations into policy-relevant information, including extension to health and climate impacts and demonstrations of the benefits of satellite data assimilation. This tool, to be integrated with RSIG, will support userprovided source-receptor relationships and sensitivity calculations. Two initial applications will be populated with simulations from TF HTAP and GEOS-Chem adjoint calculations in support of the UNEP Climate and Clean Air Coalition."

EPA's Remote Sensing Information Gateway

http://badger.epa.gov/rsig



Developed to compare CMAQ output to satellite observations.

Overlay of Model AOD and PM2.5 with Satellite and Surface Observations

Questions for You

- Would you like to be involved in the development of such an communication tool?
- What are examples of tools that we might learn from?
- What questions should the tool be designed to answer?
- The HTAP/CCAC/FASST... application focused on S/R relationships lends itself to implementation through a GIS-based approach. Is such an approach useful for exploring other types of sensitivities?
- Is there an approach that would be more useful for exploring modeling sensitivities in general? E.g. manipulating netCDF files. Or are such tools already available?