Discussion:
Satellite-Model-Ground-based Inter-comparisons (WG-3)

GOALS

- **Identify information content** / provide thorough characterization and documentation of the limitations and strengths of each satellite and also ground-based aerosol retrieval products
  [see also WG-2, WG-4]

- Suggest **approaches to** achieving the widest benefit from **comparing and integrating** *in situ* data with satellite and ground-based remote sensing data, **and with models**
The value of Aerosol Measurement & Model Integration is Clear...

Satellites
- frequent, global snapshots;
aerosol amount & aerosol type maps,
plume & layer heights

Remote-sensing Analysis
- Retrieval Validation
- Assumption Refinement

Regional Context

Suborbital
- targeted chemical & microphysical detail

Aerosol-type Constraints/Predictions

Model Validation
- Parameterizations
- Climate Sensitivity
- Underlying mechanisms

CURRENT STATE
- Initial Conditions
- Assimilation

Models
- space-time interpolation,
  DARF & Anthropogenic Component
calculation and prediction

Adapted from: Kahn, Survey. Geophys. 2012
Discussion Questions

Beyond what is already being done:

1. Are there additional aerosol data product validation steps or product modifications that would improve satellite-suborbital data integration?*

2. Are there additional aerosol data product modifications that would improve measurement-model integration?

3. Are there specific additions to data product documentation that would improve their use in models?

4. Are the new method or procedure ideas for measurement-model integration that should be explored?

*Integration can include comparisons, constraints, assimilation, & communication