AeroCom
workshop

The Goals

DATA - goals

- **introduce available measurements (*also to modelers)***
  - **ground (in-situ)** **GAW, IMPROVE, …**
  - **g.remote sensing:** **AERONET, MFRSR, EARLINET …**
  - **satellite (older):** **TOMS, AVHRR, GOES / METEOSAT**
  - **satellite (newer):** **MODIS, MISR, POLDER, ICESAT**
- **identify sites most useful to large-scale modeling**
- **identify measurements most useful to modelers**
- **set strategies / identify paths to merge data-sets**

Data strategy

- **focus on the year 2000**
  - ***year of prescribed sources and year of nudged simulations***
- **combine strengths of data (MODIS /MISR /TOMS)**
  - ***for later years include POLDER /ICESAT /CALIPSO /CLOUDSAT***
- **identify good ground-sites for model-evaluations**
  - ***test regional representation with MODIS (+MISR) scaling***
- **merge ground data (at good sites) - *if possible***
  - ***extend/relate properties among ground networks***
    - ***AERONET:*** ***vertical distribition from lidars***
    - ***LIDAR:*** ***extend (Raman) lidar-ratios to AERONET-sites (for application to backscattering data from space)***

MODEL - goals

- demonstrate (severity of) model differences
  - at intermediate steps in component modeling
- illustrate limitations to evaluate with data
  - how to reduce the freedom to modeling
- re-examine prescribed model output
  - in light of available measurements
- determine (realistics) needs for data
  - Suggest new or modified measurement strategies

MODEL strategy

- **focus on the year 2000** – ***if possible***
  - ***year of prescribed sources and year of nudged simulations***
- **test consistency in modeling**
  - ***same yr + sources → are mass-fields consistent?*** **processing**
  - ***are mass→aot conversions consistent? (size- /r.hum-properties)***
- **evaluate model results with measurements**
  - ***match available data (aot / accu-fraction / absorption / surf.concentr.)***
  - ***conduct regional (global data) and multi-location comparisons***
  - ***quantify model-performance***
- **provide a fast / efficient website for feedback**
  - ***quick turnaround and access to measurement data-sets***

Expansion

- **aerosol and clouds**
  - **aerosol type**
  - **cloud changes *(cover? aot? microphysics? lifetime?)***
- **aerosol and chemistry**
  - **aerosol composition *(hydrophobic? mixing-reactions?)***
  - **trace gas properties *(concentrations, reaction rates)***
- **aerosol and precipitation**
- **clues from observations *(at different scales)* ?**
  - **statistical analysis of satellite/ground data**
  - **consistent with model simulations ?**