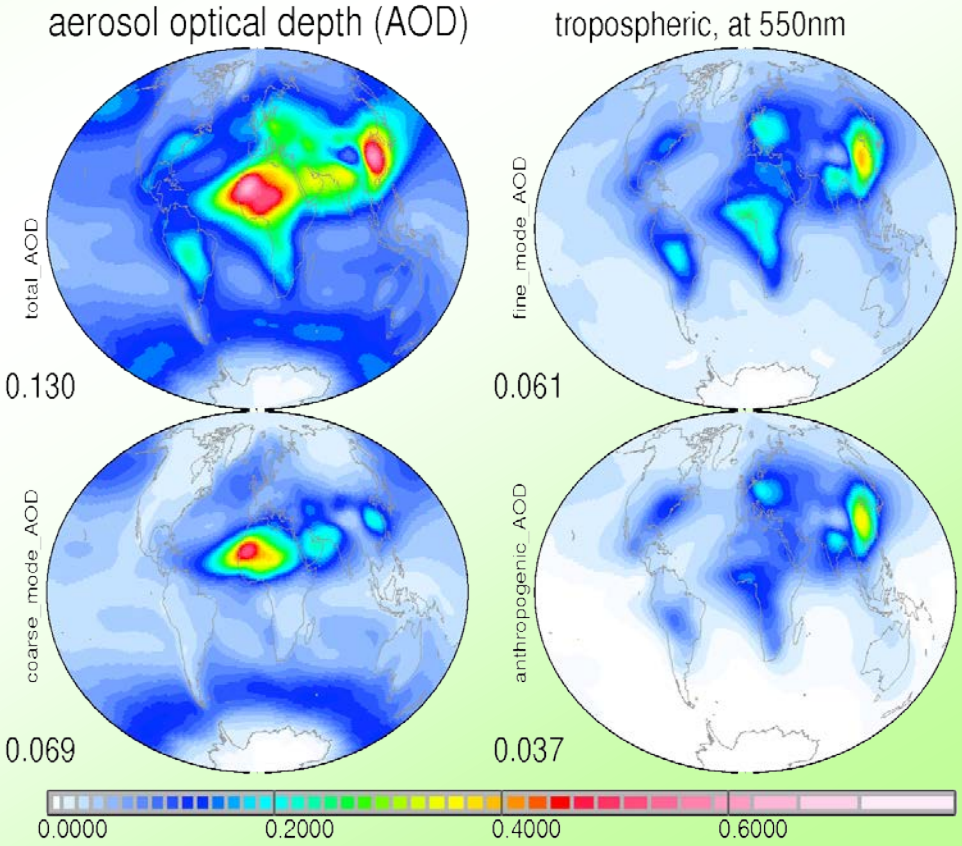
# climatology – a simple alternative

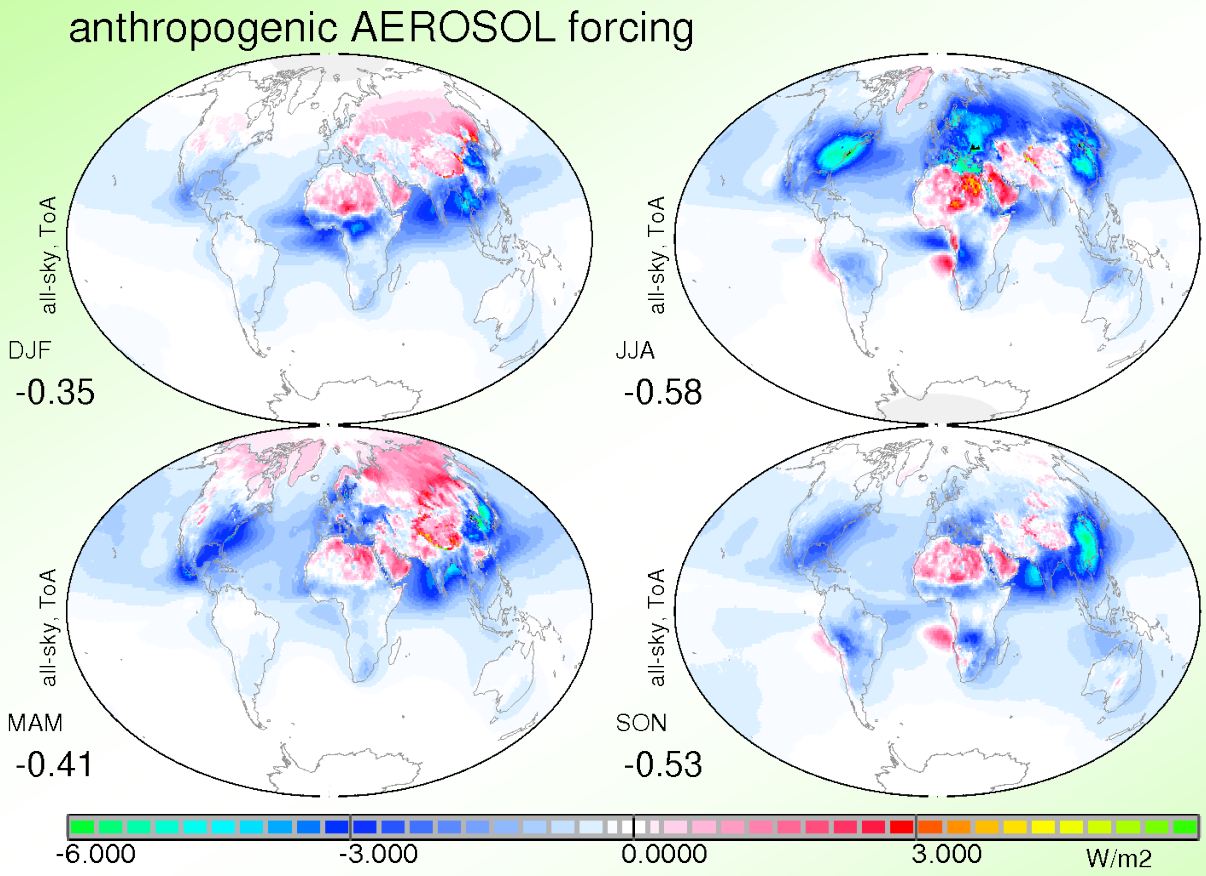
- start with model median monthly maps
- allow AERONET to locally modify
- AOD, SSA, ANG (→g)

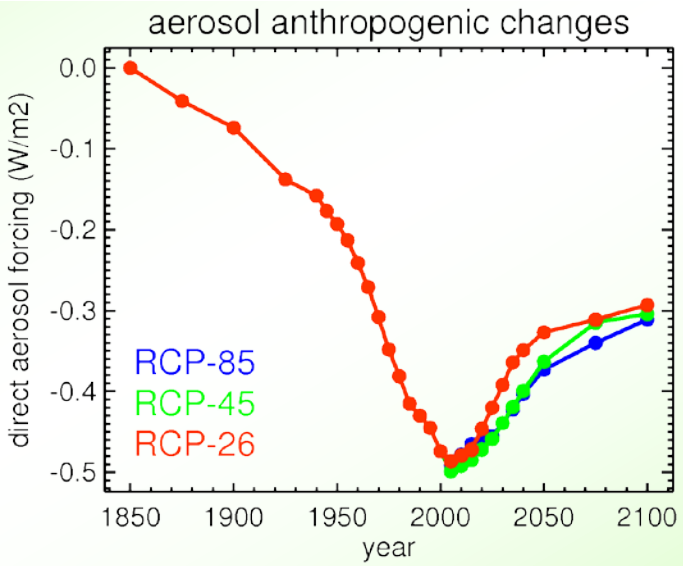
- altitude by model
- anthropogenic by model
- past change by model
- future via emission
- CCN via kappa
- IN via dust & BC

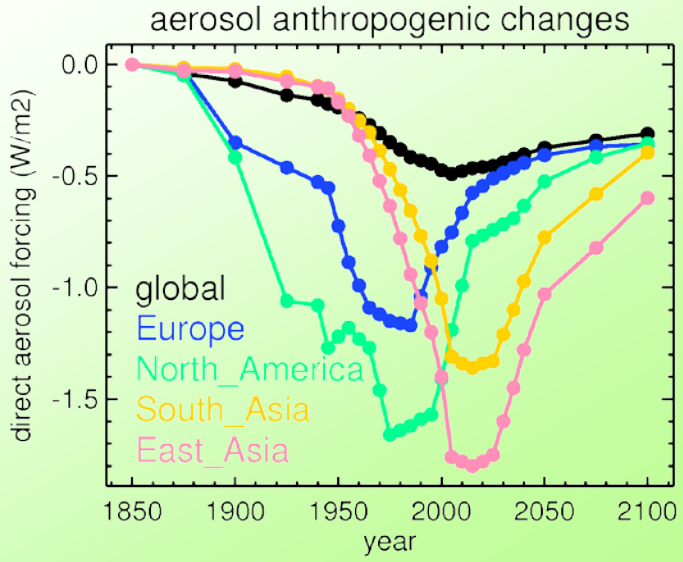


# application – rad. forcing at TOA, all-sky

- anthropogenic direct ToA forcing
- + 0.5 +/- 0.2 W/m2



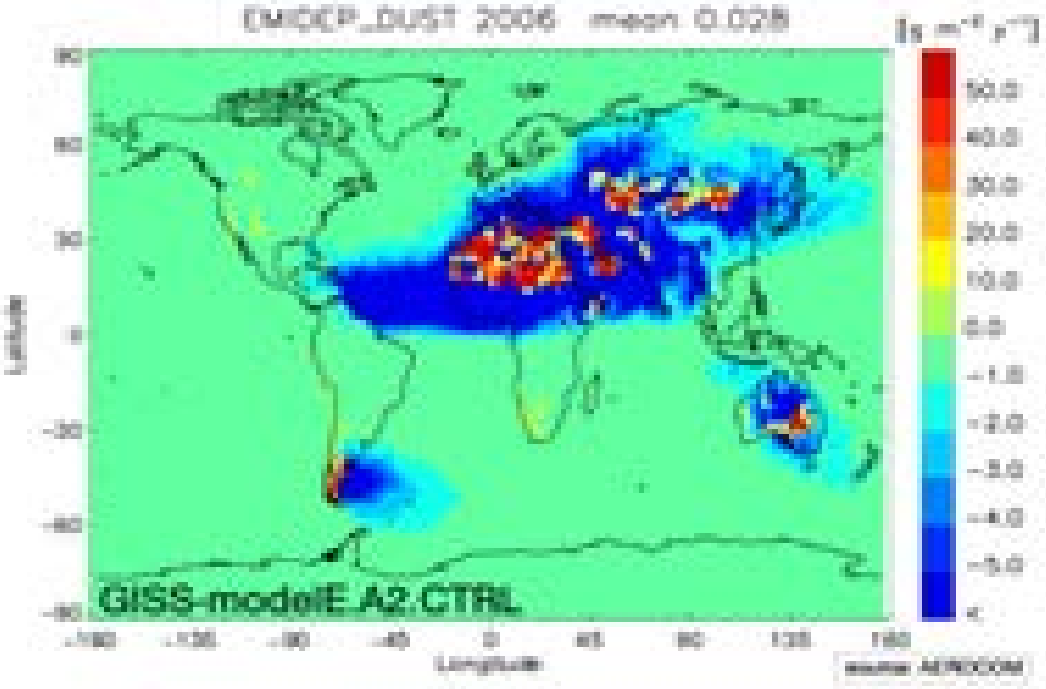



# emission *minus* deposition

- investigating removal diversity in global models
- explore the AeroCom website data resource
  - http://aerocom.met.no/cgibin/aerocom/surfobs_annualrs.pl
  - 6 models: CAM1, GISS-E, INCA, ECHAM, Oslo-CTM, Sprintars
  - 5 component BC, POM, dust, sulfate, seasalt

## take home messages

- explore your model
- explore model diversity
- a resource for studies
  - volunteers ???
- unclosed budgets exist



# BC direct effect

## + 0.3 W/m2

- after adjusting simulated regional AOD values *based on available* ***AERONET-model*** *data pairs for BC-AOD*
- AERONET based BC AOD is derived from absorption of fine mode aerosol and BC-SSA (← size, RFindex)

- model deficiencies:
  - SE Asia spring (3)
  - S Asia winter (4)
  - S America fall (2)
  - EU/N.Asia seasonality