

AEROCOM Workshop (June 2–3, 2003, Paris)

Evaluation of SPRINTARS

(Spectral Radiation-Transport Model for Aerosol Species)

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(Research Institute for Applied Mechanics, Kyushu University)
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SPRINTARS

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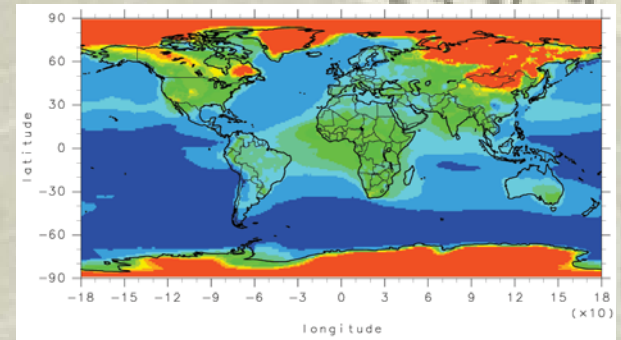
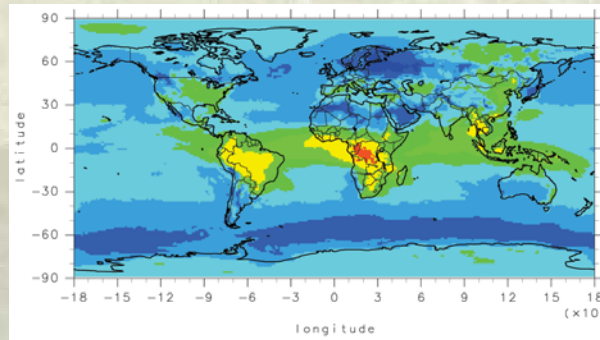
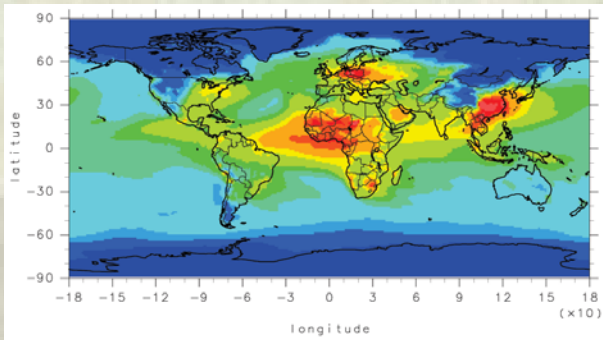
Aerosol optical properties by SPRINTARS

optical thickness
(0.55 μm)

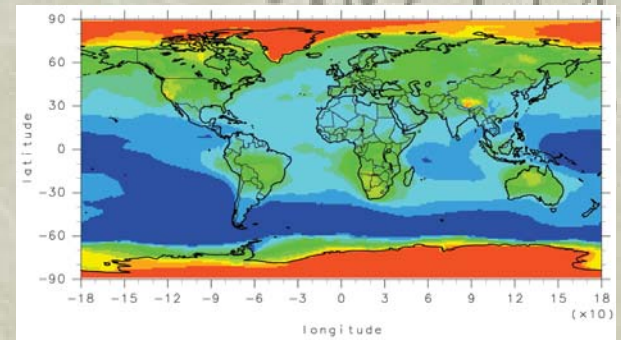
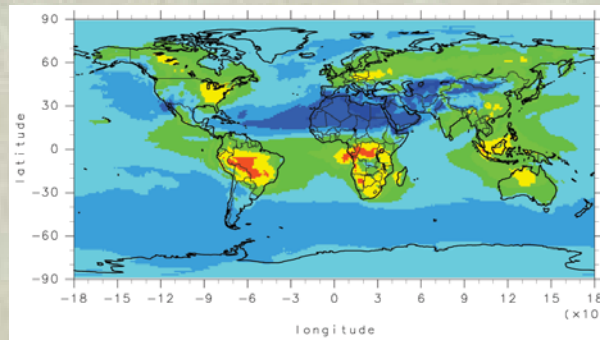
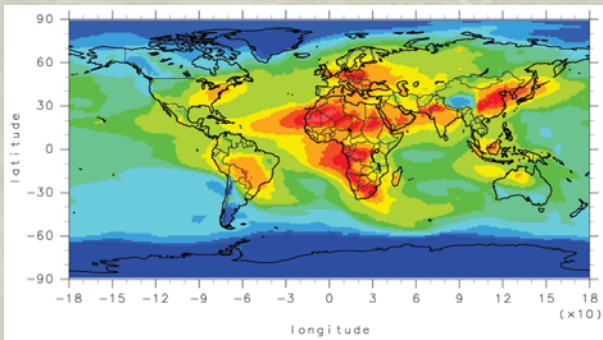
Ångström exponent

single scattering albedo
(0.55 μm)

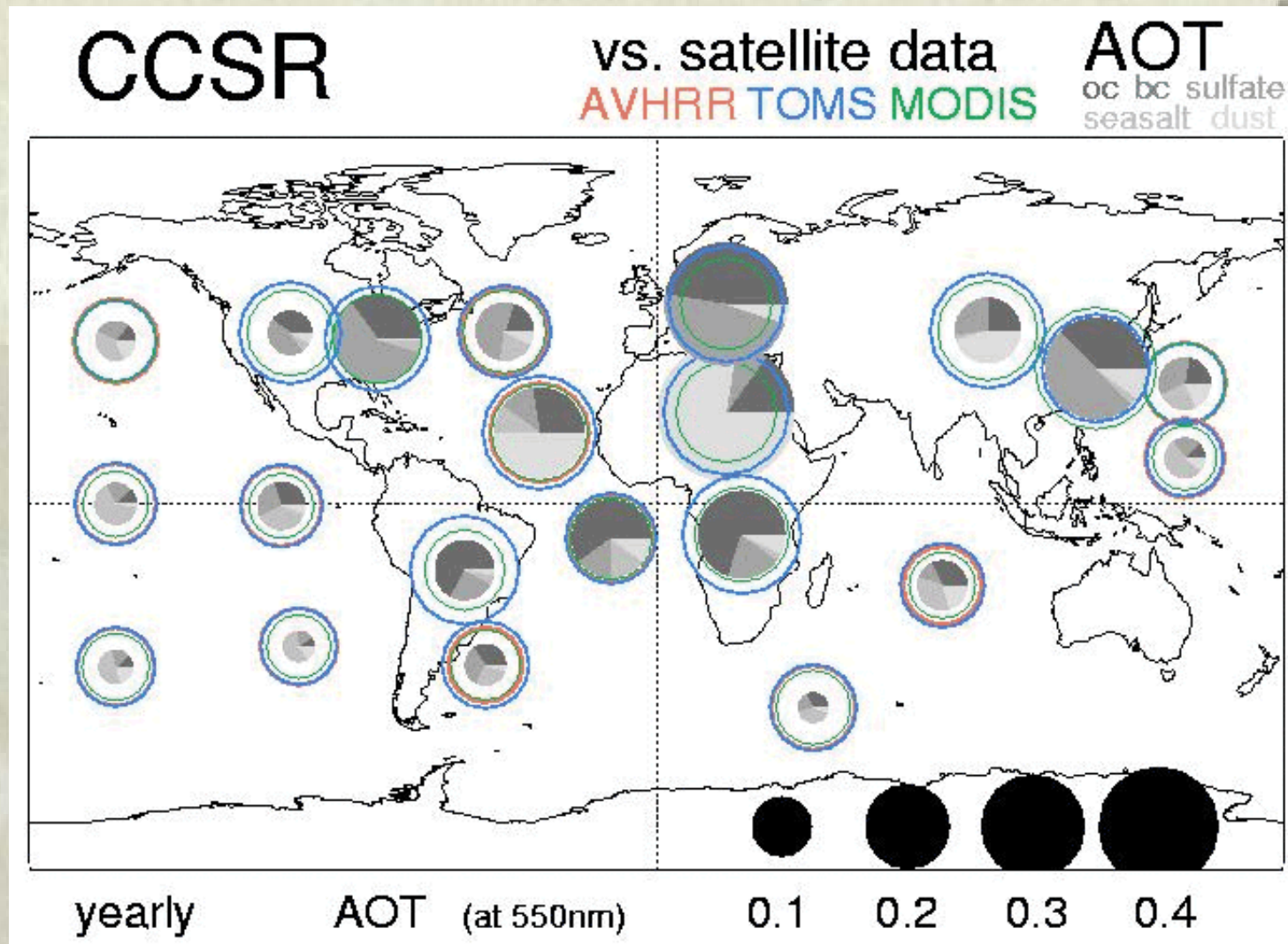
Northern Hemisphere winter



Northern Hemisphere summer

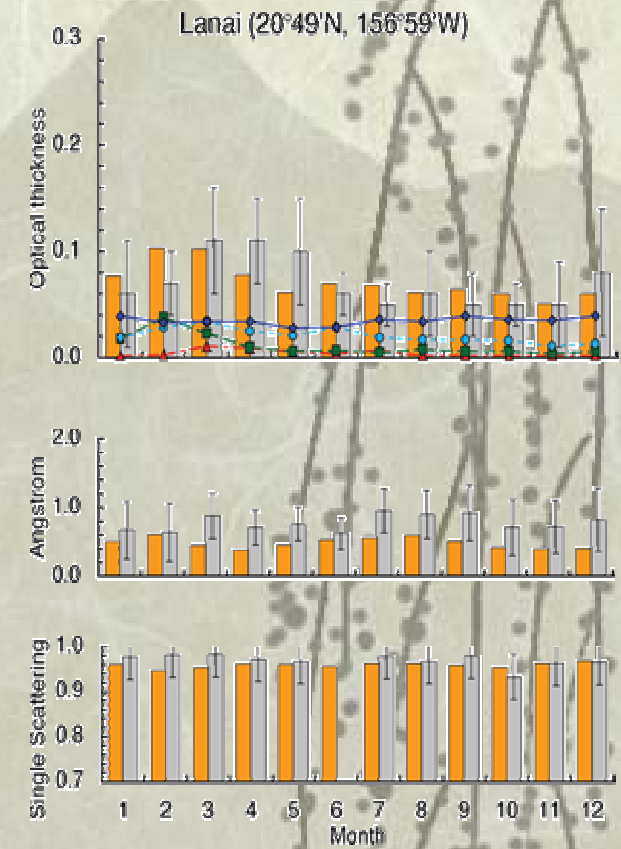
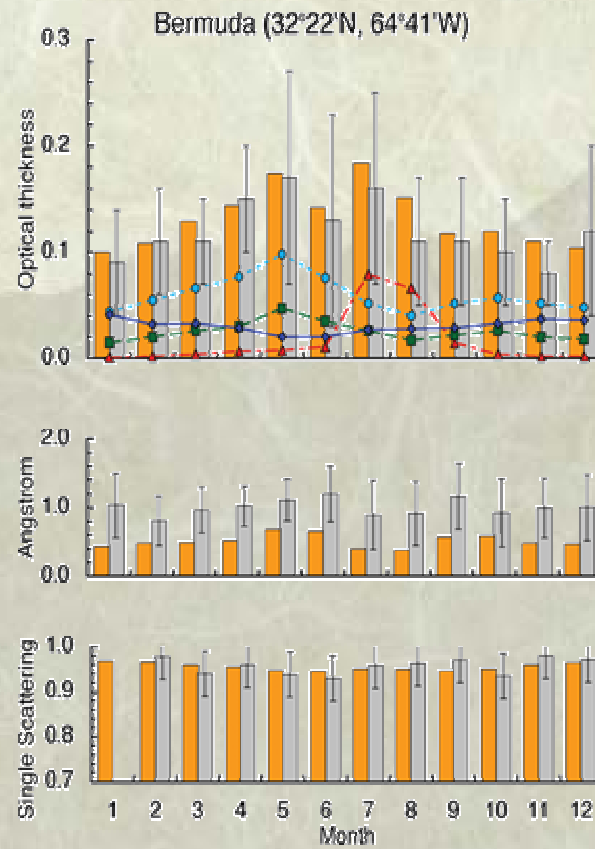
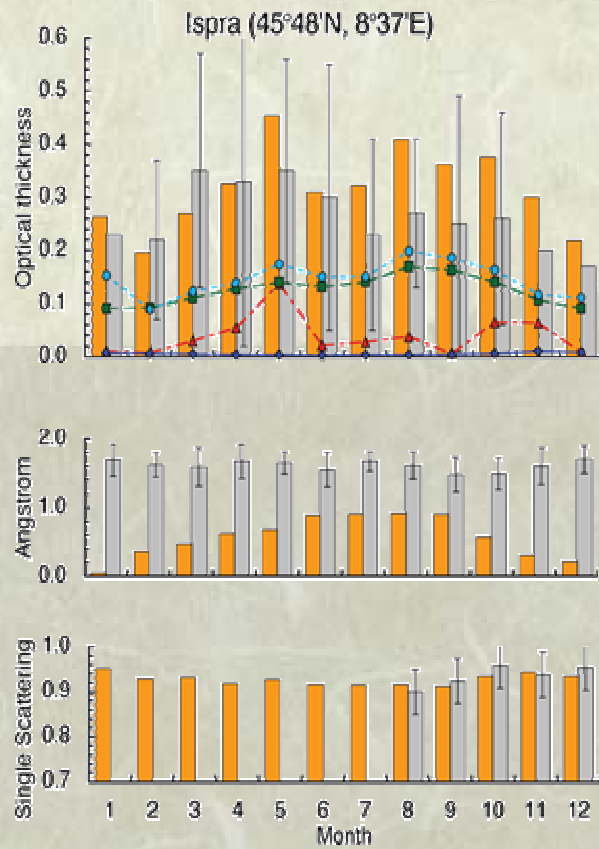


Comparison with satellite retrievals

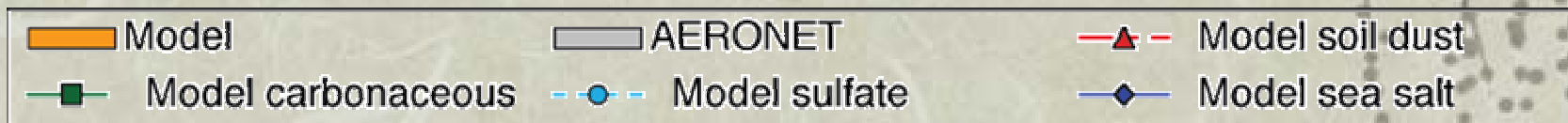
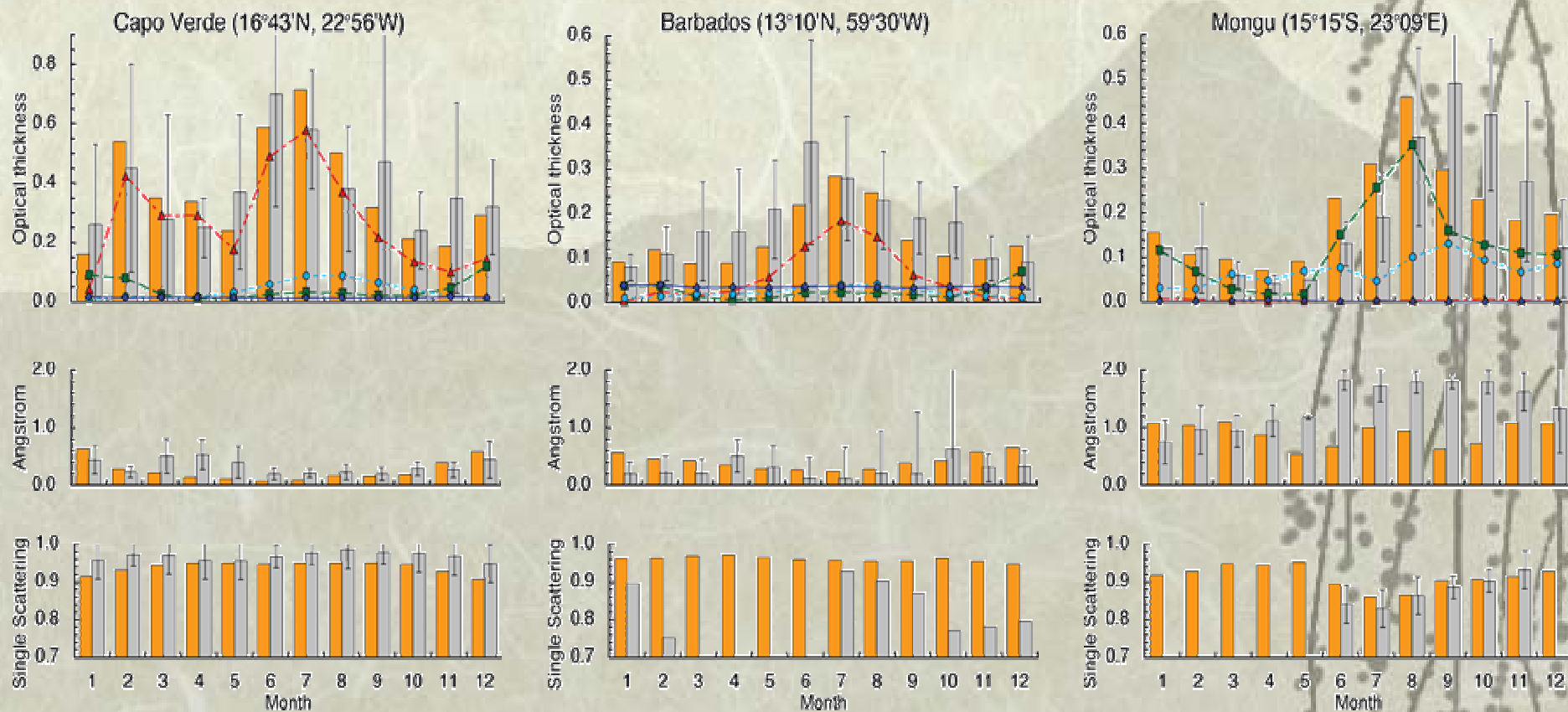


Kinne et al. (2003)

Comparison with AERONET

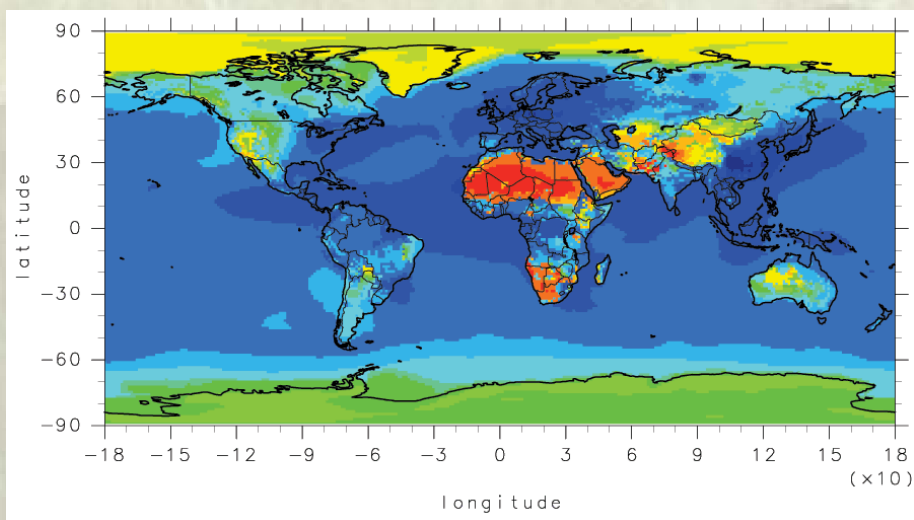


Comparison with AERONET

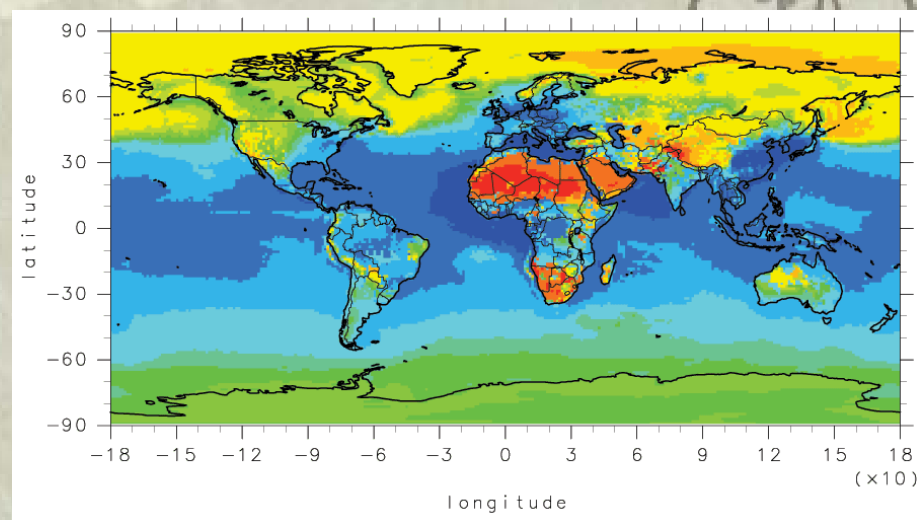


Aerosol direct radiative forcing by SPRINTARS

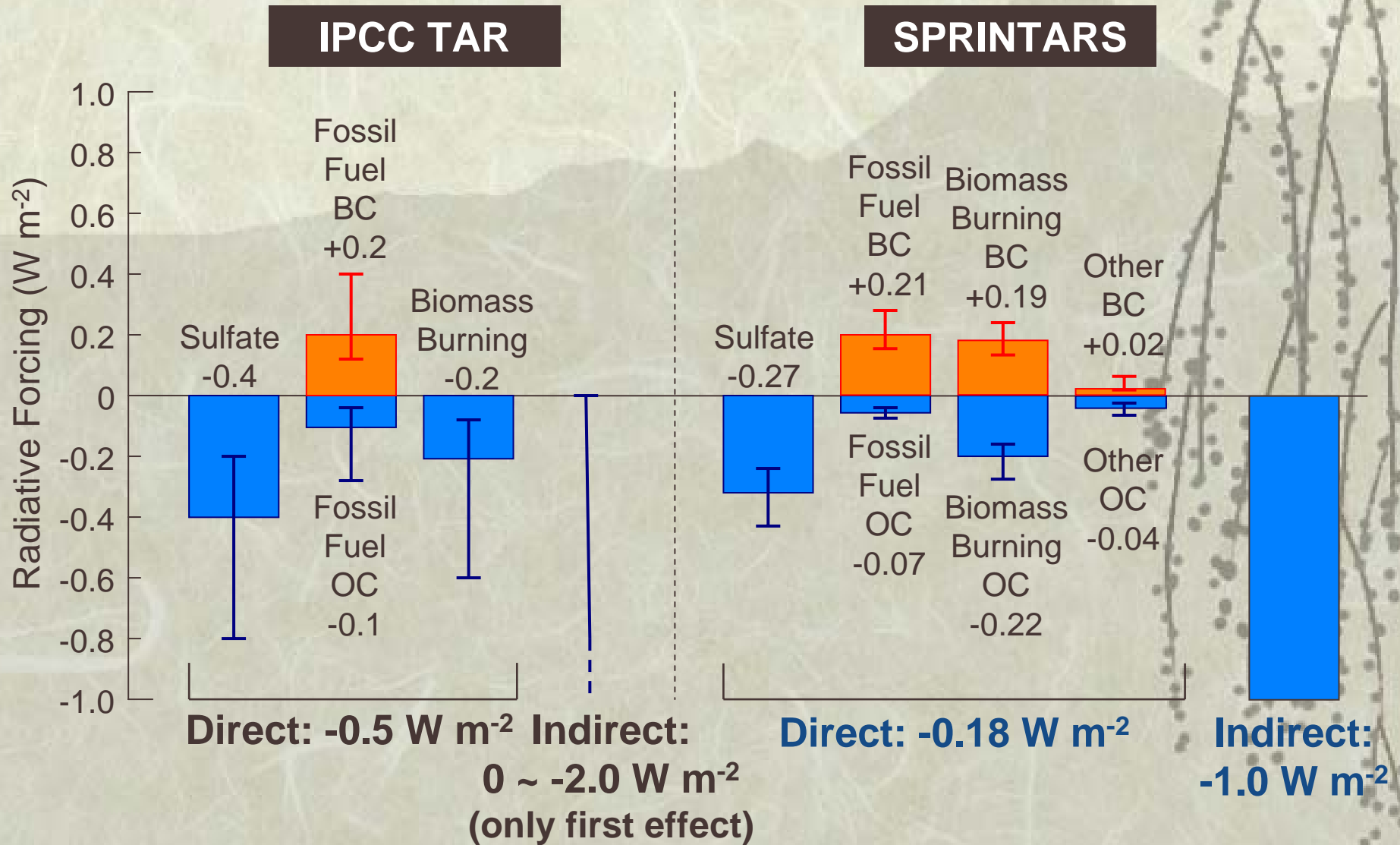
Clear-sky



Whole-sky



Global mean radiative forcing by anthropogenic aerosols



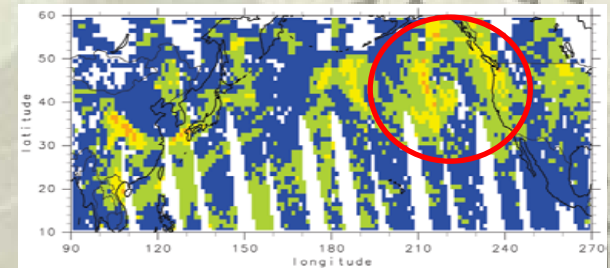
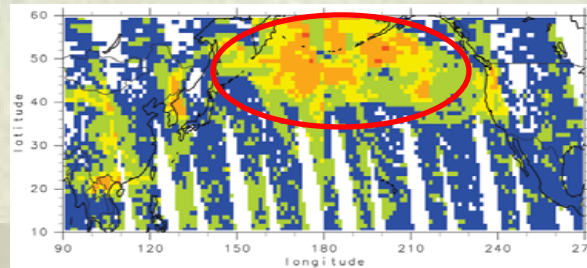
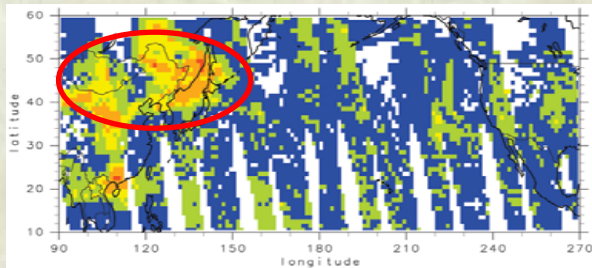
Trans-Pacific aerosol transport in 2001

April 8

April 12

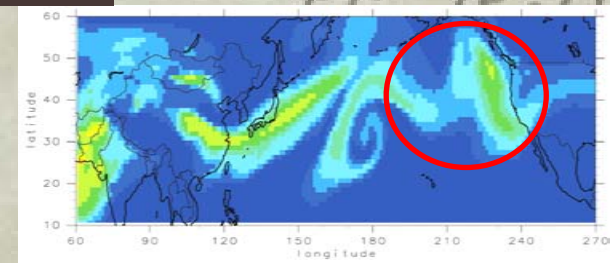
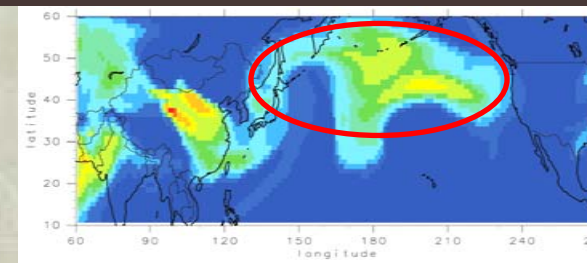
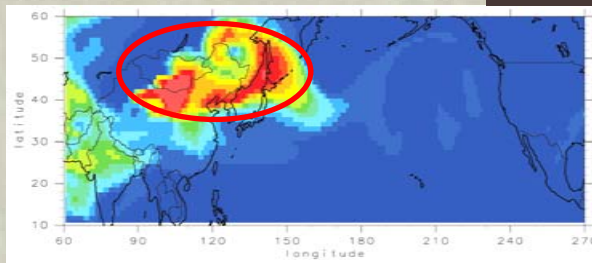
April 14

TOMS aerosol index

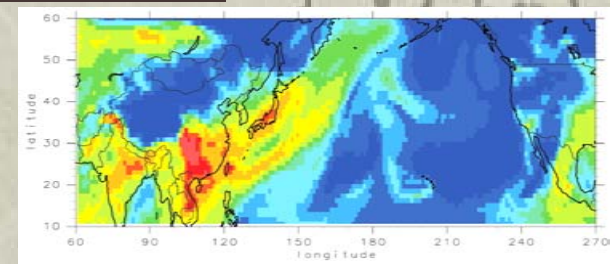
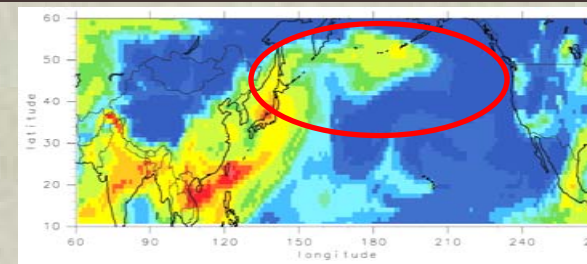
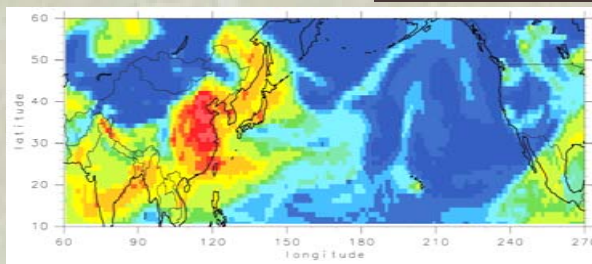


0.1 0.2 0.3 0.5 0.7 1 2 3 5 7

SPRINTARS optical thickness (dust)



SPRINTARS optical thickness (carbon+sulfate)



0 0.01 0.02 0.03 0.05 0.07 0.1 0.2 0.3 0.5 0.7 1

Takemura et al. (GRL, 2002GL016251, 2002)