

FINAL ASPECTS

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Hindcast experiments

RUN	Purpose	Set-up	Options	Notes
HCA-0	Aerosol trends, variability, spatial distributions, relationships between emission, mass, AOD, forcing that change with time	<ul style="list-style-type: none"> - Time-varying anthropogenic and natural emissions with participants' choice - Using reanalyzed or nudged meteorology 		Expected to be run by a few model groups early on (before October 2008)
HCA-IPCC	Same as HCA-0	- Same as HCA-0 but using IPCC emissions (available October 2008)	Using dust and sea-salt emissions as provided by selected model(s)	Expected to be run by most/all model groups
HCA-FX	Influence of weather/climate variability on transport and deposition of anthropogenic aerosols	Same as HCA-0 but using 2001 anthropogenic emissions (including biomass burning) for the entire simulation period	Same as above	Natural emissions are the same as in HCA-0 or HCA-IPCC
HCA-MET	Aerosol interaction with cloud and meteorology	GCMs with fully coupled aerosol-meteorology with prescribed SSTs		The GCMs only forced by SSTs, not nudged meteorology

Simulation year(s)	Exp Name / Diagnostics / Submission date
1750+2000	IND2 ongoing
2001	HTAP-TP1x soluble tracer! ongoing
1750+1980 ----- 2008	Hindcast => « monthly » HCA-0 ongoing
2006 (- 2007)	AeroCom A2 : intensified new Diagnostics Forcing/Microphysics/Organic Aerosol/ Prescribed forcing exp / 2D daily+supersites CALIOP 3D daily (mid 2006-2007) New models: simple diagnostics
March 2009	
1750+1980 ----- 2008	Hindcast => « monthly »
2000 ----- 2008	Hindcast => « daily »
	HCA-IPCC july , HCA-FX , HCA-MET oct
2008	Organics/Microphysics II (AeroCom A2 prolong)
2009	
1860-2100	coupled runs IPCC-aerosol
Mid 2010 to PCMDI	

Analysis and Actors

Indirect	Quaas/Storelvmo
Microphysics	Liu/Mann/Stier
Organics	Tsigaridis/Kanakidou/O'Donnell
Direct Forcing	Stier/Myhre
Hindcast	Chin/Wild/Kinne/Diehl/Schulz
Caliop/Lidar	Kinne/Ferrare/Textor/Earlinet?
Dust	Ginoux/Huneeus
Hindcast MET	Quaas/Seland/Balkanski
IPCC-aerosol	Shindell + x
Absorption	Koch
Score+Median	Schulz/Kinne
HTAP	Schulz/Chin

Diagnostics

Use CMOR // new version upcoming // examples: Paus
One file per variable and time resolution

Diagnostics packages

Make an estimate of how much output is generated?

1. Quicklook
2. Microphysics
3. Organics
4. Vertical distribution
5. Direct Forcing
6. Indirect Forcing
7. Hindcast
8. IPCC-aerosols

Diagnostics QUICKLOOK included in all others

For DUST,SS,BC,POM,SO4

Monthly: Emissions / 3D Loads / Wet&Dry Deposition

Daily: AOD speciated at 550+865 nm Full Coordinates

Diagnostics MICROPHYSICS

Monthly 3D fields of all aerosol tracers (number+mass),

H2SO4, NH3, SO2, DMS

Aerosol water as well

Formation rate of sulphate through processes, condensation sink

Supersites hourly or daily: all aerosol tracer concentrations,
dry and wet extinction, absorption

Diagnostics ORGANICS

MICROPHYSICS plus

Monthly 3D fields BC,POM,SOA, O3, NOX, OH, NO3, OM/OC ratio

Monthly 3D Formation rate of SOA, semivolatiles in gas/aerosol phase

Diagnostics VERTICAL TP1x for 2006

June 2006- 2007: Daily 3D speciated extinction/backscatter 532/1064

3D cloud cover

(??10 lidar sites hourly extinction, RH, mass speciation, rad. fluxes ???)

Diagnostics DIRECT FORCING

2D: AS/CS SW TOA/SRF speciated forcing , cloudy sky forcing

(SO₄,BCFF,POMFF,BB,NO₃,SOA), cloud cover 3D

Surface Albedo=downward/upward SW at surface

Asymmetry factor

Absorption AOD, direct/diffuse CS, UVVis / NIR

Diagnostics INDIRECT FORCING

see protocol IND2

CO₂ + aerosol quasi forcing Fluxes in a run with fixed SST

Diagnostics HINDCAST

Monthly 2D: speciated AOD_{440/550/865}, surface concentrations&deposition

Emissions, Loads, (diffuse/direct, diurnal temperature range,

SW/LW Flux down/up CS/AS TOA/SRF), cloud fraction

Monthly 0D supersites: surface concentration all tracers

2D Daily 2000-2008: fine/coarse AOD, absorptionAOD

Diagnostics IPCC aerosols

To be discussed with AC&C working group

Next AeroCom workshops :

Oct 2009 - Princeton University , US
hosts: Ginoux&Ramaswamy

Last week Sep 2010 - Oxford/Leeds , UK
hosts: Stier&Carslaw