

List of differences between the various 1-year benchmarks (bmy, 5/7/07)

#	Item	v7-02-03	v7-04-02 w/o MEGAN 1995 fossil fuel year	v7-04-02 w/o MEGAN 1998 fossil fuel year	v7-04-02 with MEGAN 1998 fossil fuel year
Simulation					
1	Number of tracers	50	43	43	43
2	Met field year	2001	2001	2001	2001
Chemistry					
3	Uses 2ndary organic aerosols?	YES	NO	NO	NO
4	Uses SO4s, NITs?	NO	YES	YES	YES
5	Use gravitational settling of SO4s, NITs?	NO	YES	YES	YES
6	Aerosol thermodyn equilibrium	RPMARES	ISORROPIA	ISORROPIA	ISORROPIA
7	Computes sea-salt alkalinity	NO	YES	YES	YES
8	Computes sea-salt # density	NO	YES	YES	YES
9	Uses rxn S(IV) + O3 -> SO4	NO	YES	YES	YES
Emissions					
10	Fossil Fuel Scale Factor Year	1995	1995	1998	1998
11	Uses EMEP anthro emissions	NO	NO	NO	NO
12	Uses EPA-NEI99 anthro emissions	YES	YES	YES	YES
13	Uses GFED2 biomass emissons	NO	NO	NO	NO
14	Uses climatological biomass emissions	YES	YES	YES	YES
15	Lightning emissions	4.7 Tg N	4.7 Tg N	4.7 Tg N	4.7 Tg N
16	Use MEGAN biogenic emissions	NO	NO	NO	YES
17	Snow depth bug fix in dust code:	buggy	fixed	fixed	fixed
18	Land / water / ice flags	buggy	fixed	fixed	fixed
19	Sea surface temp (for DMS):	4x5, climatological	1x1 interannual	1x1 interannual	1x1 interannual
Dry Deposition					
20	Hygroscopic growth of dust in computing drydep velocity	YES	NO	NO	NO
21	Reynolds # criterion for smooth surface in drydep velocity code	1	0.1	0.1	0.1
Sea-Air Exchange					
22	Sea-air exch: DMS emissions	Liss & Merlivat 1986	Nightingale 2000b	Nightingale 2000b	Nightingale 2000b
23	Sea-air exch: Acetone ocean prod	Liss & Merlivat 1986	Nightingale 2000b	Nightingale 2000b	Nightingale 2000b
24	Sea-air exch: Acetone ocean loss	Liss & Merlivat 1986	Nightingale 2000b	Nightingale 2000b	Nightingale 2000b
Wet Deposition					
25	Deplete H2O2s same as SO2s in convection, rainout, washout	NO	YES	YES	YES

NOTES:

H2O2s, SO2s, are archived in sulfate_mod.f and then used in the wet deposition routines

SO4s, NITs are sulfate and inorganic nitrate on sea-salt aerosols. They were added for ISORROPIA in v7-03-01.