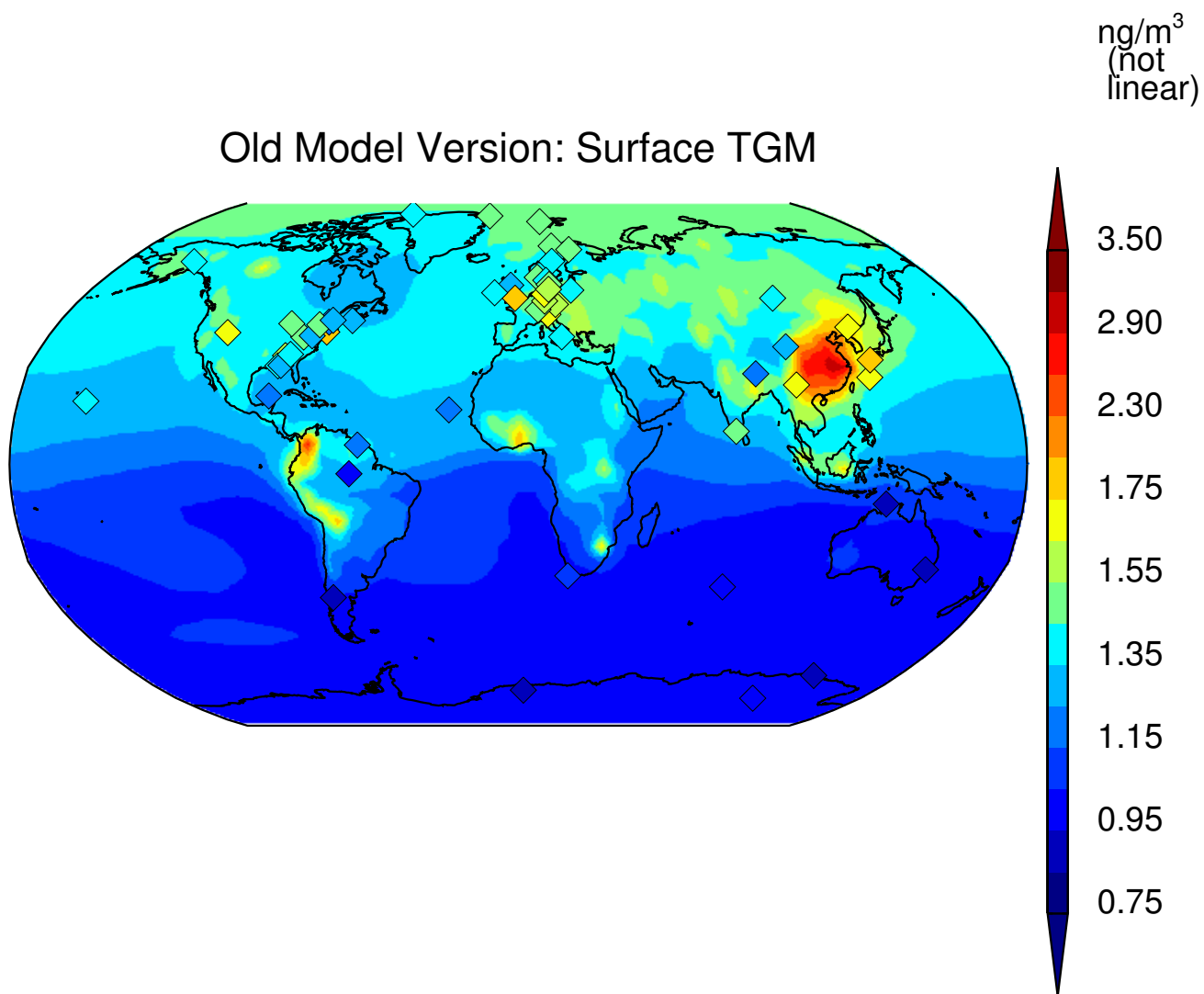


Terrestrial $R^2 = 0.54$

Mean Obs. = 1.38 ± 0.26 ng/m³

Mean Mod. = 1.42 ± 0.38 ng/m³

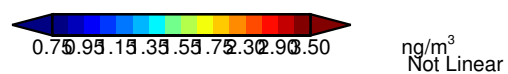
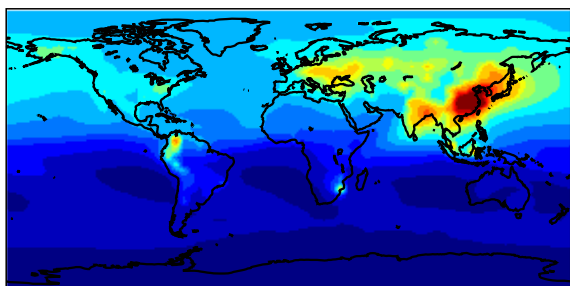


Terrestrial $R^2 = 0.62$

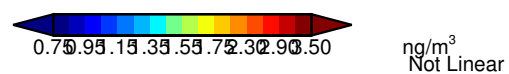
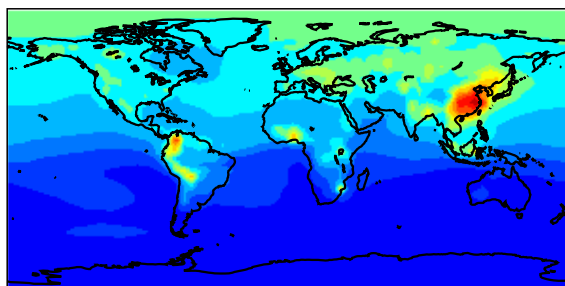
Mean Obs. = 1.38 ± 0.26 ng/m³

Mean Mod. = 1.40 ± 0.21 ng/m³

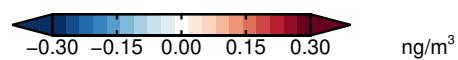
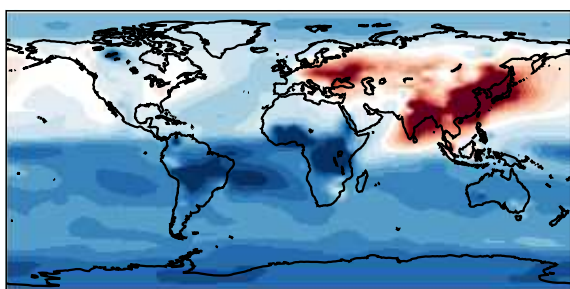
New Model Version: Surface TGM



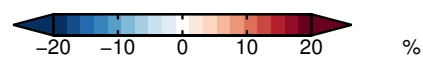
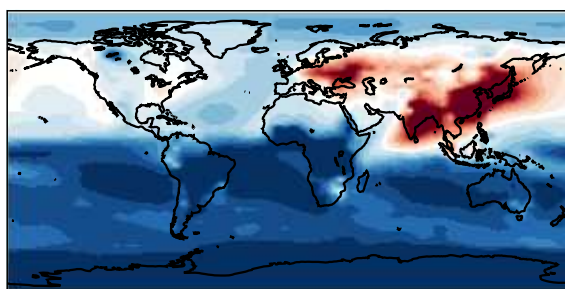
Reference Model Version: Surface TGM



Absolute Difference

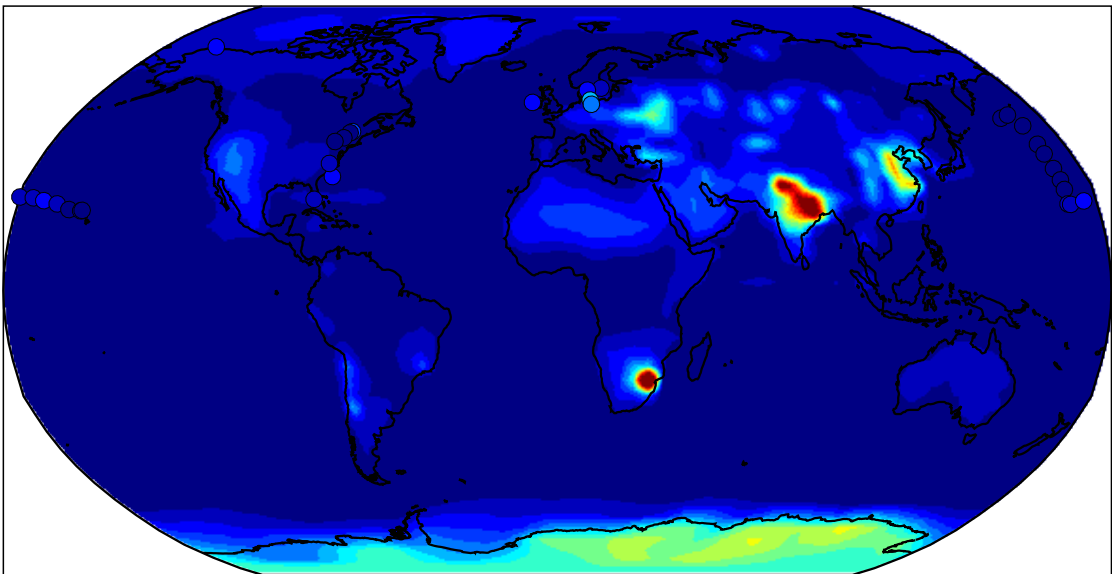


Percent Difference



pg/m³

New Model Version: Surface Hg(II)+Hg(P)



150

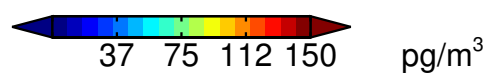
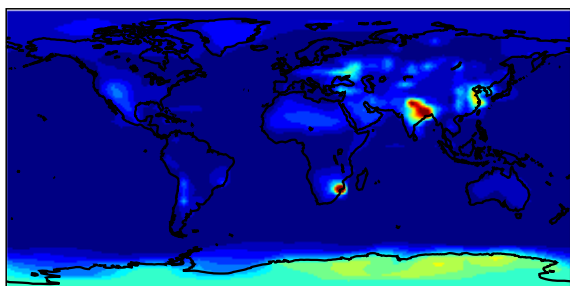
112

75

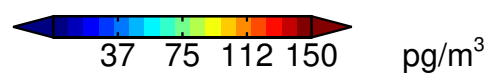
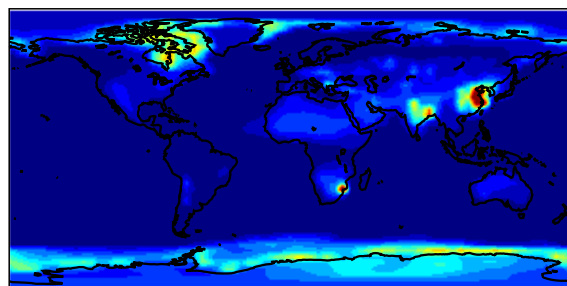
37

0

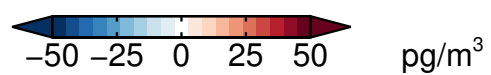
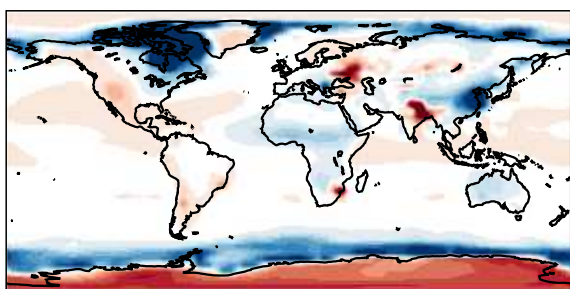
New Model Version: Surface Hg(II)+Hg(P)



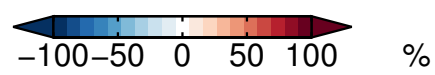
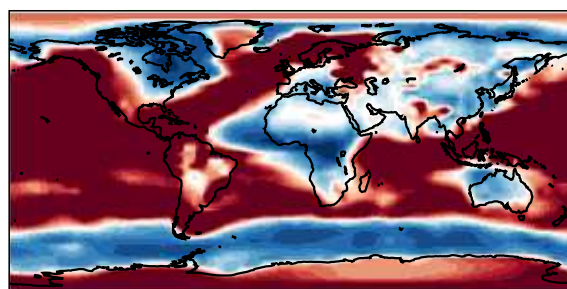
Old Model Version: Surface Hg(II)+Hg(P)



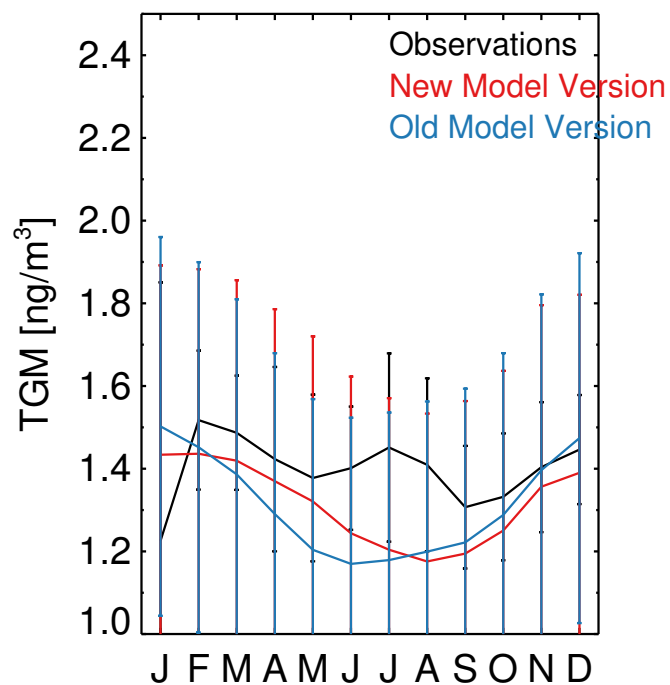
Absolute Difference



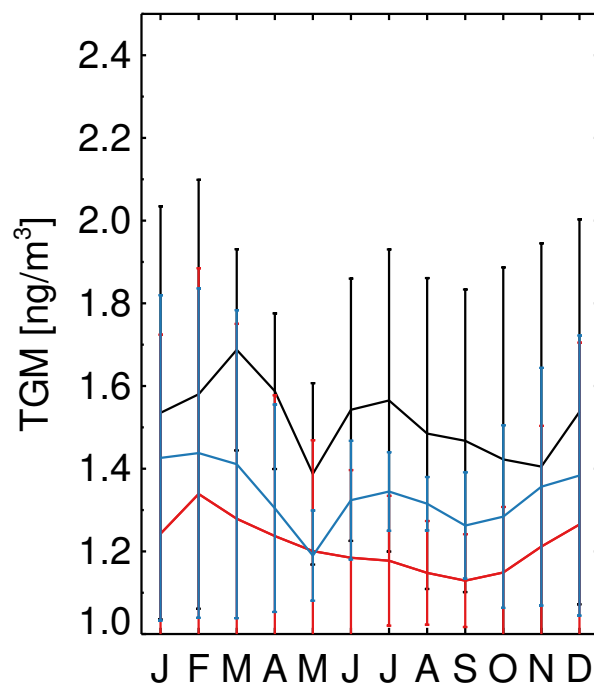
Percent Difference



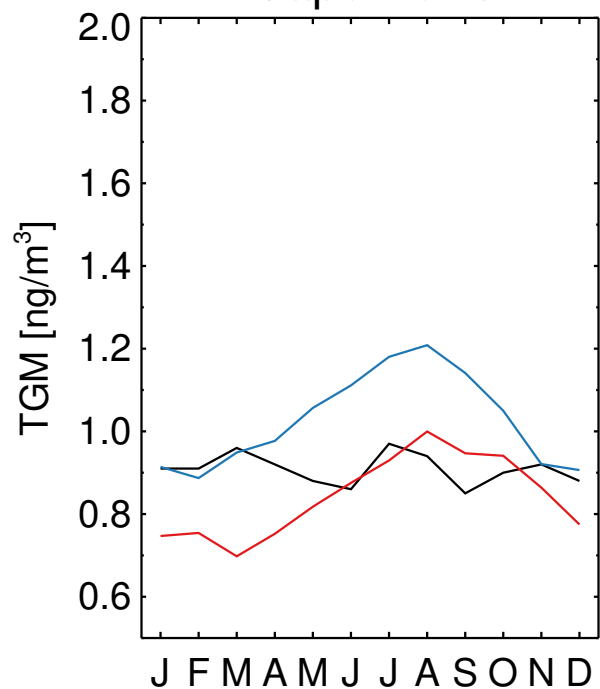
Mid-latitudes



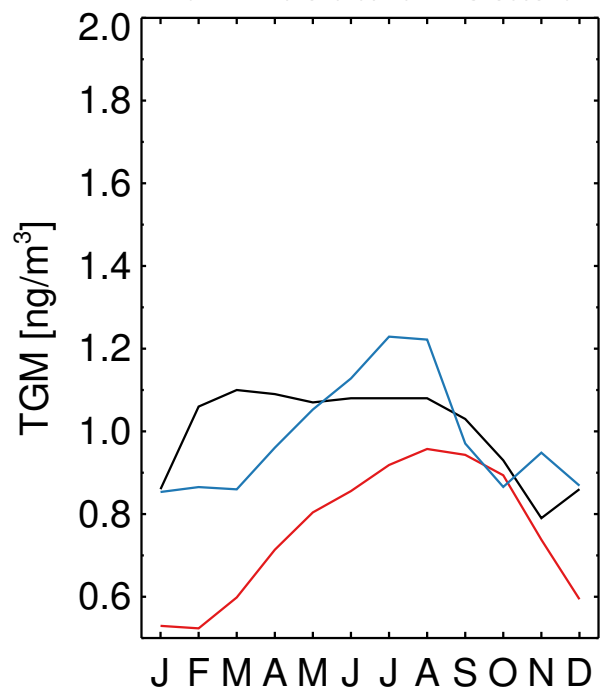
Arctic

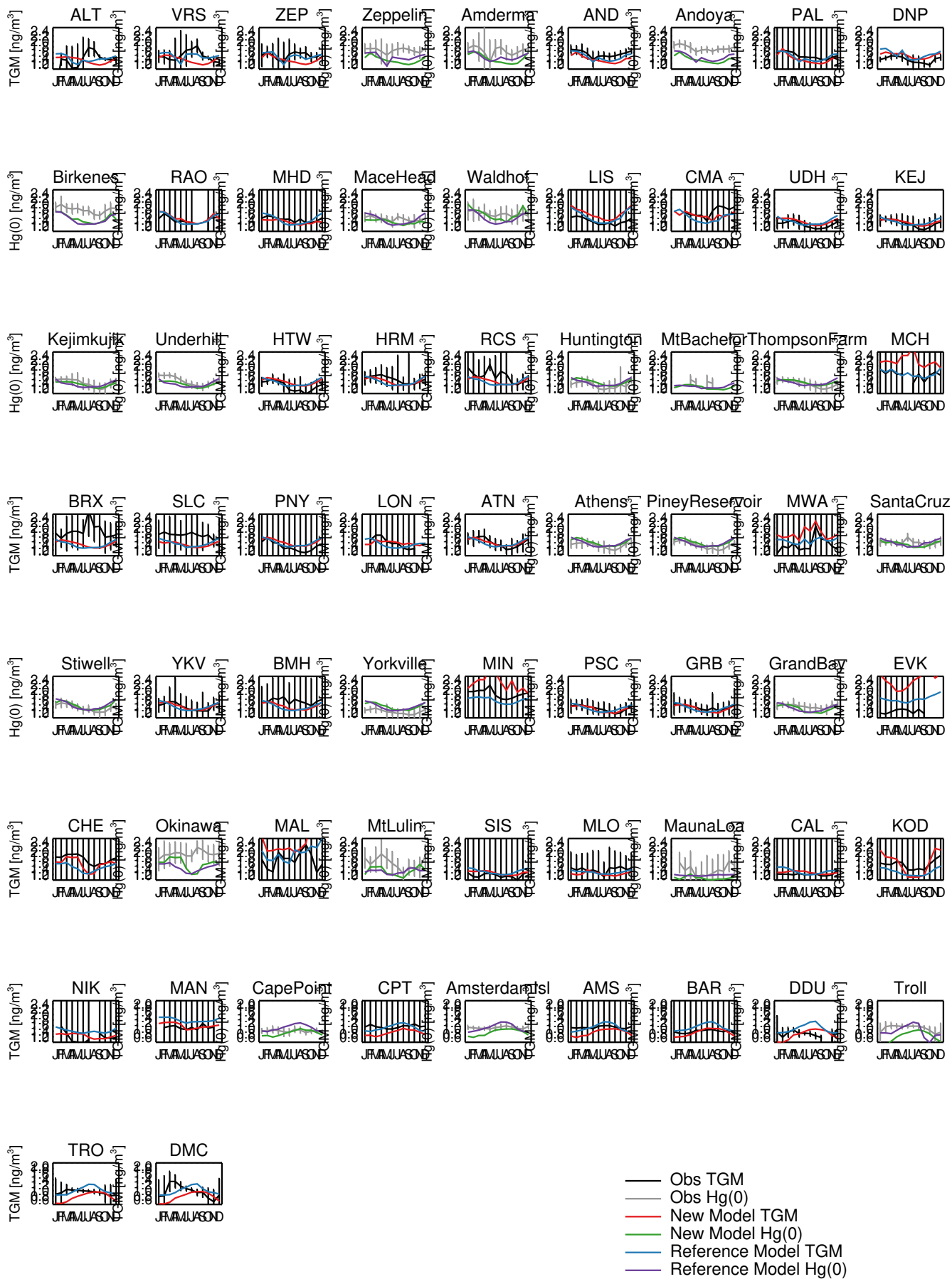


Cape Point

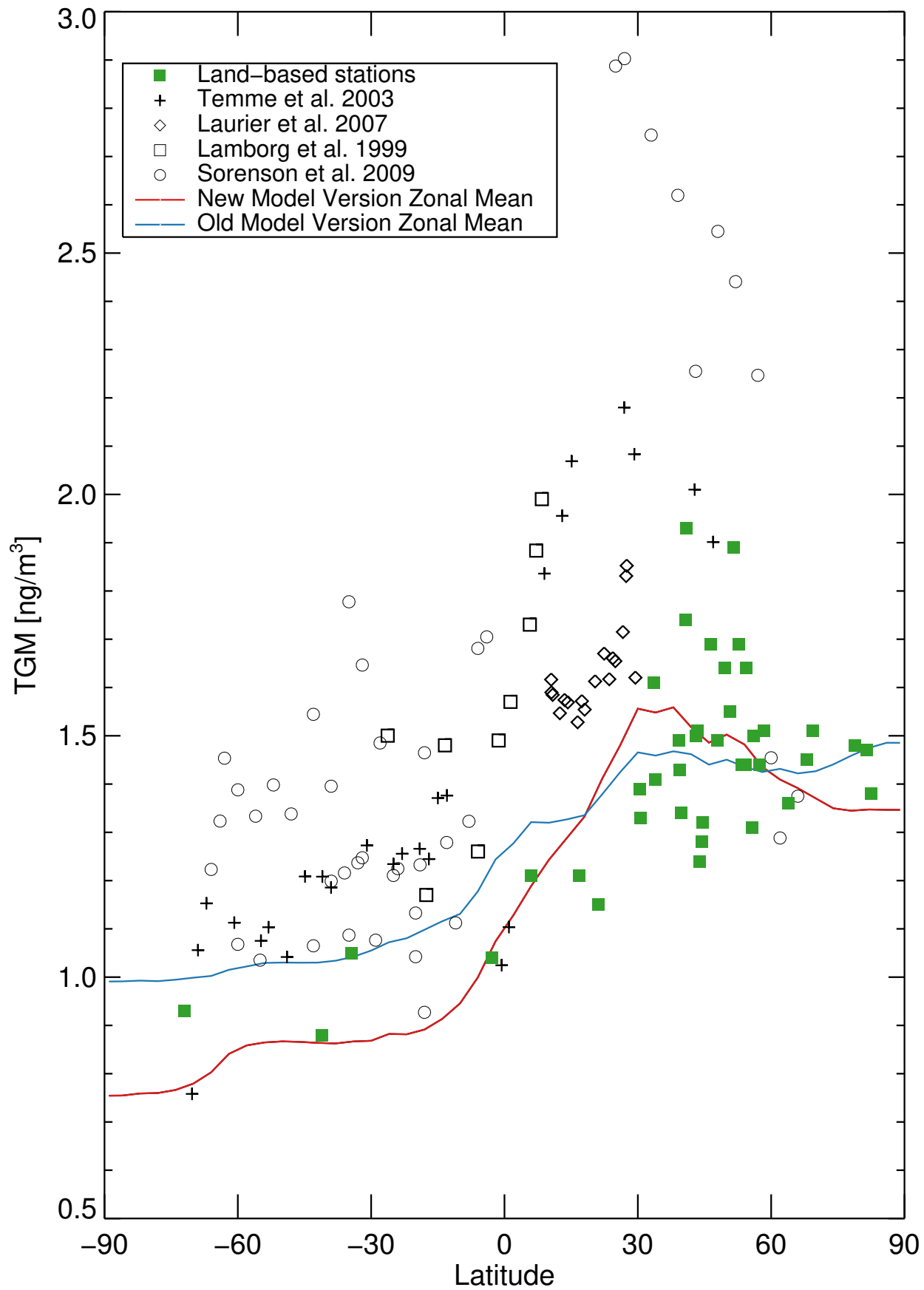


Troll Research Station



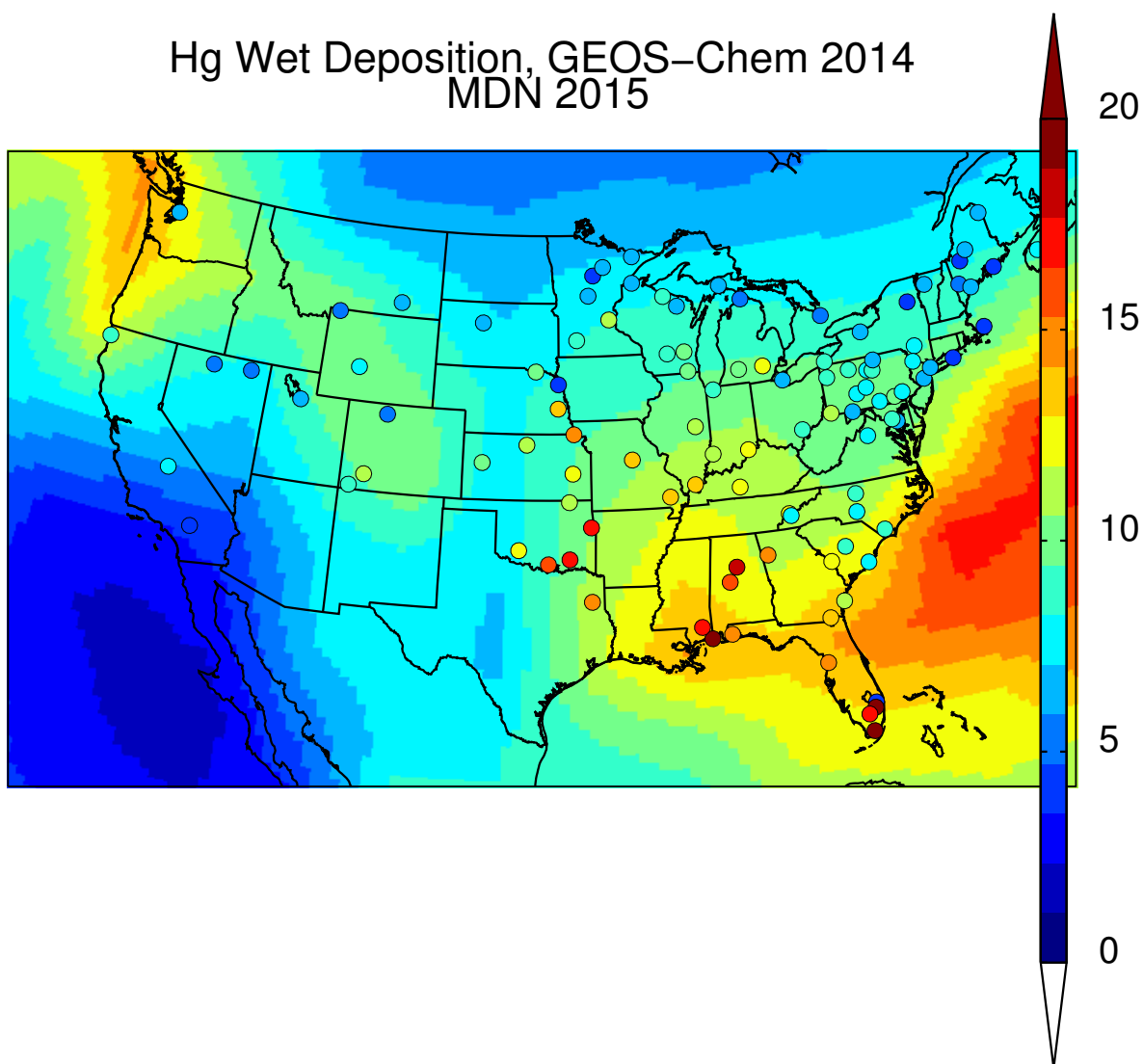


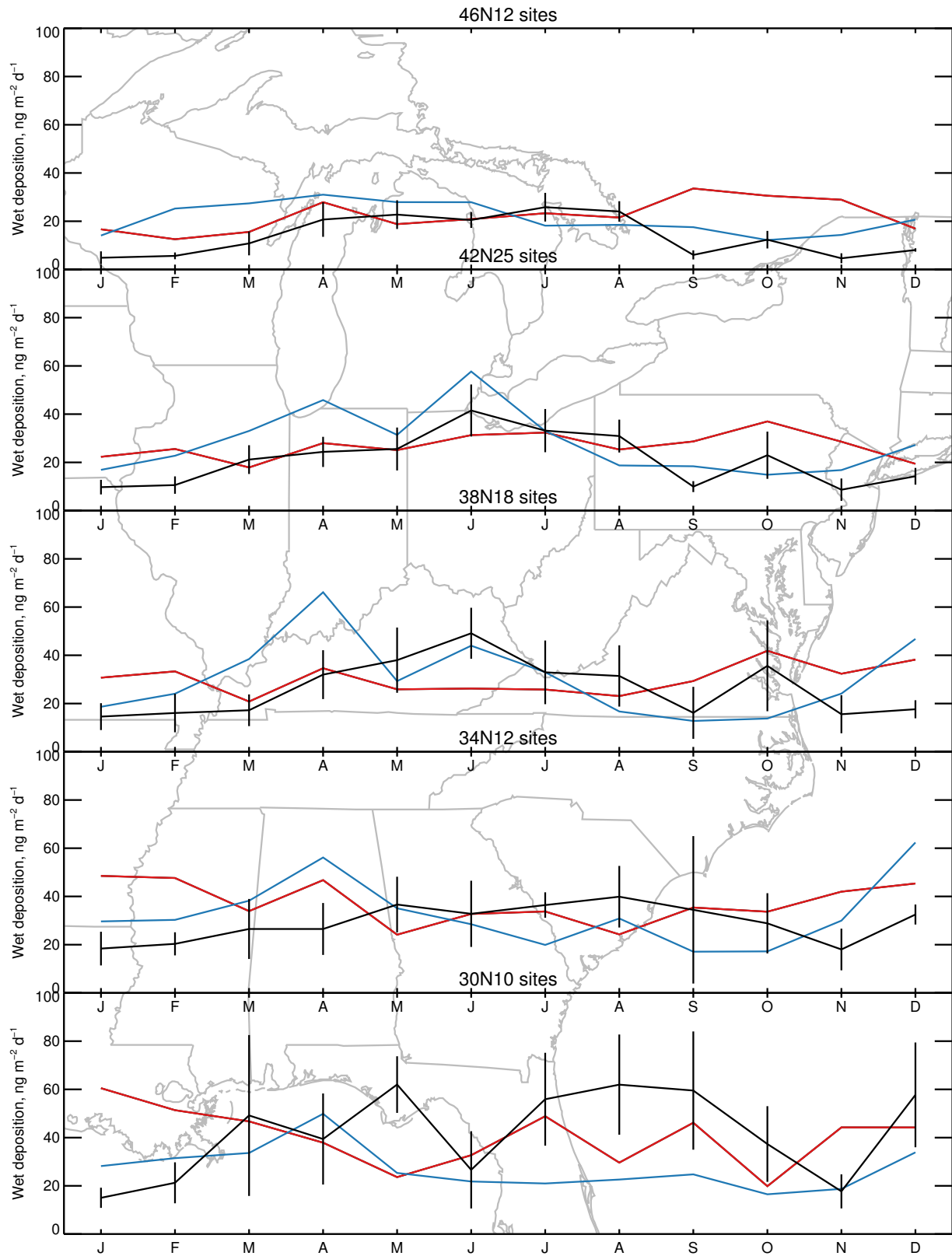
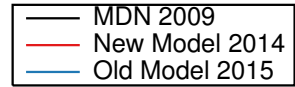
Surface TGM



$\mu\text{g m}^{-2} \text{y}^{-1}$

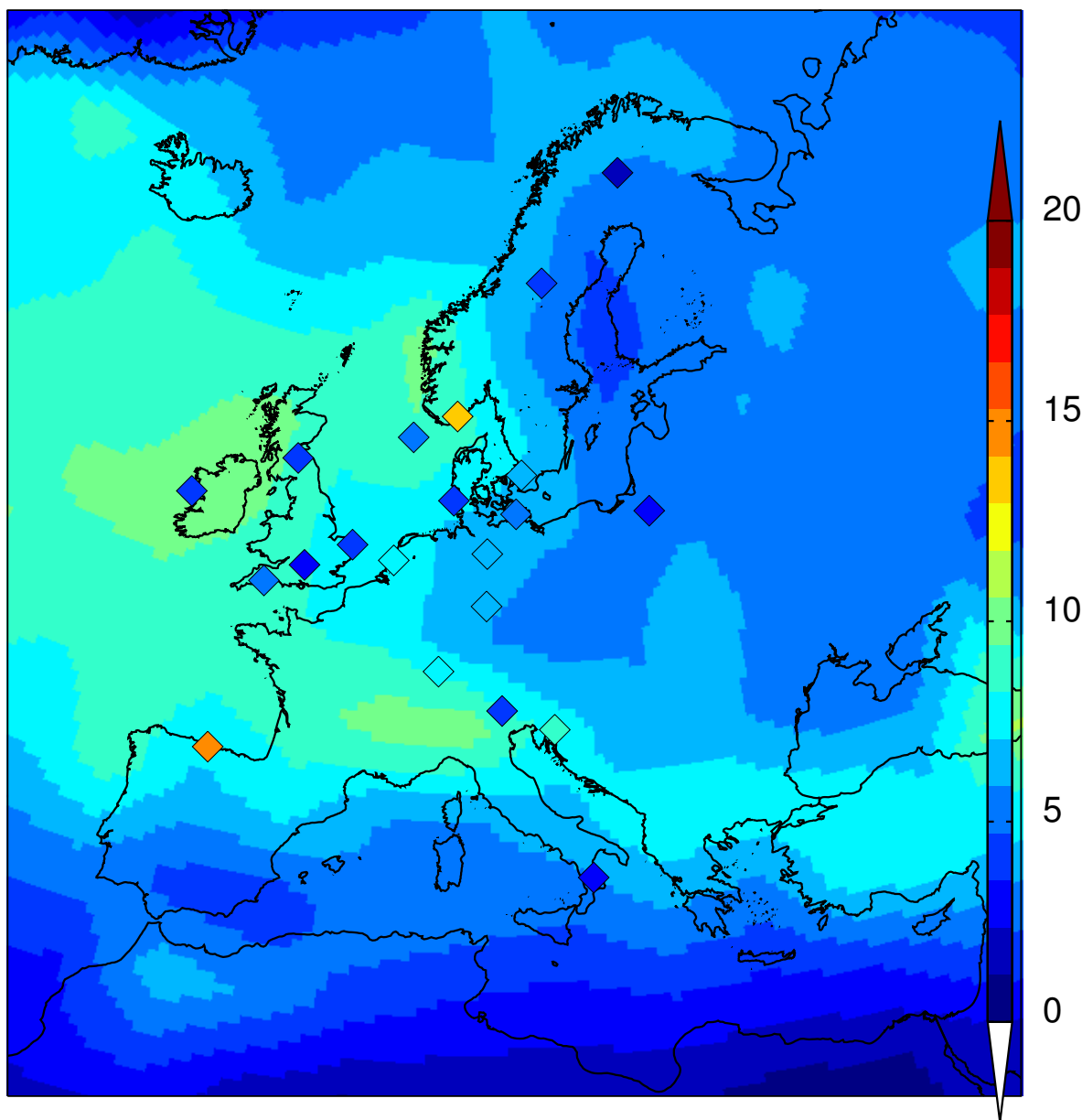
Hg Wet Deposition, GEOS-Chem 2014
MDN 2015



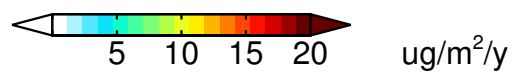
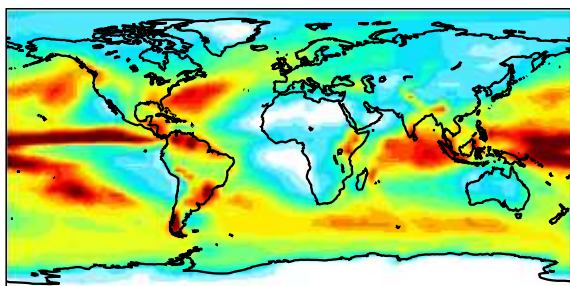


Hg Wet Deposition, GEOS-Chem 2014
EMEP 2015

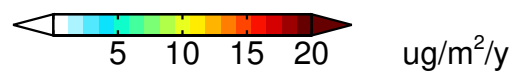
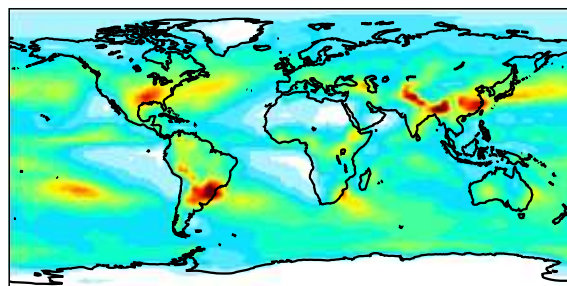
$\mu\text{g m}^{-2} \text{y}^{-1}$



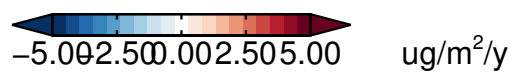
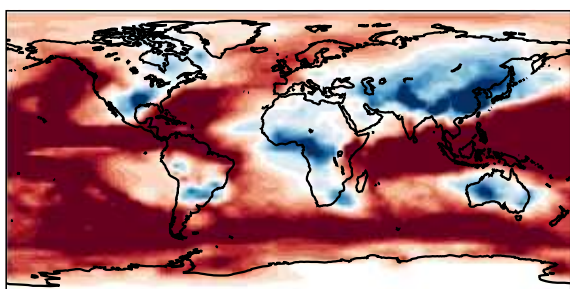
New Model Version: Total Wet Dep



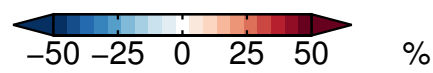
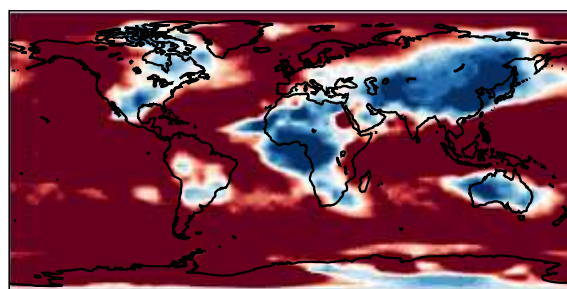
Old Model Version: Total Wet Dep



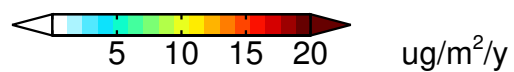
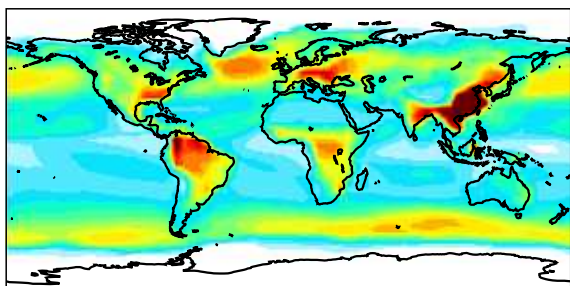
Absolute Difference



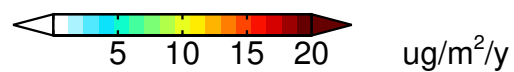
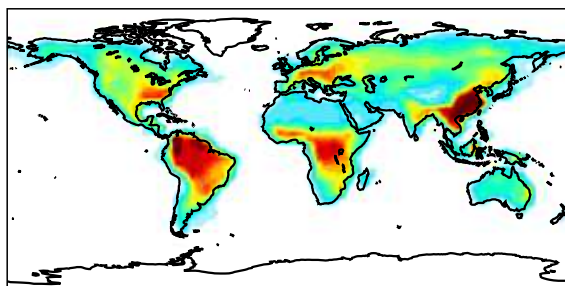
Percent Difference



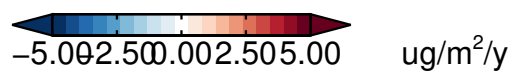
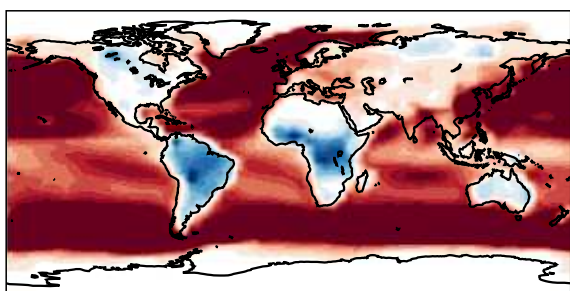
New Model Version: Hg(0) Dry Dep



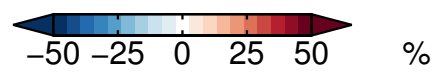
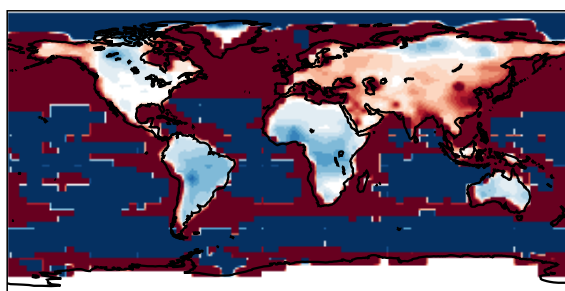
Old Model Version: Hg(0) Dry Dep



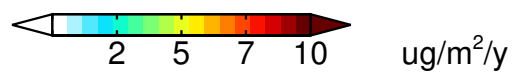
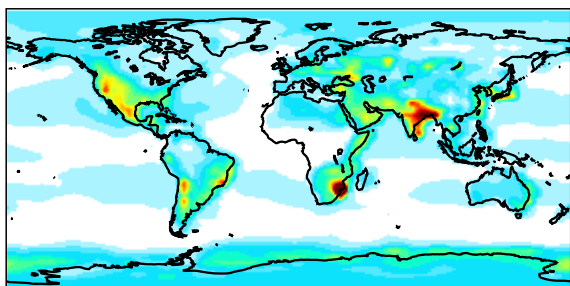
Absolute Difference



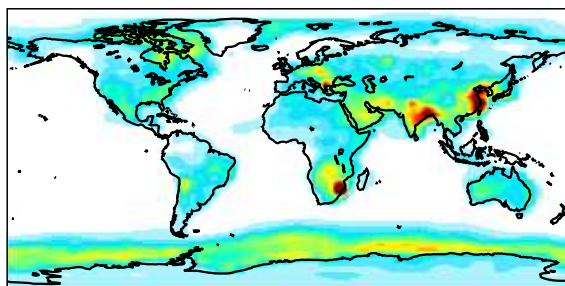
Percent Difference



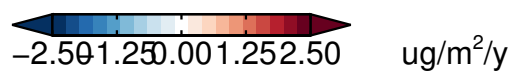
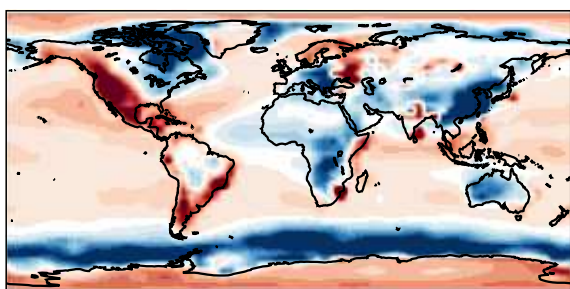
New Model Version: Hg(II)+Hg(P) Dry Dep



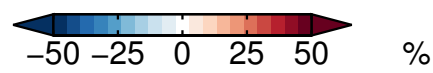
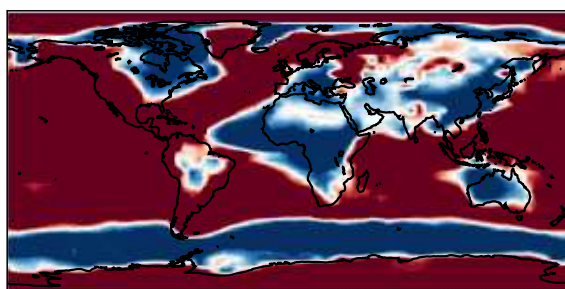
Old Model Version: Hg(II)+Hg(P) Dry Dep



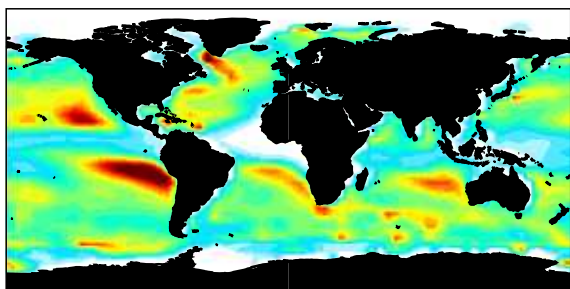
Absolute Difference



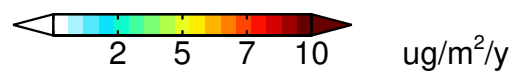
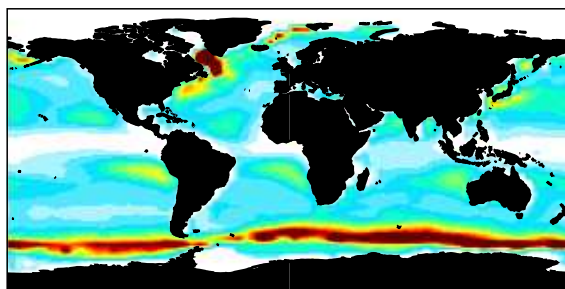
Percent Difference



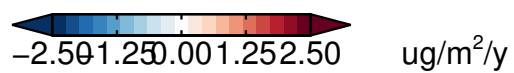
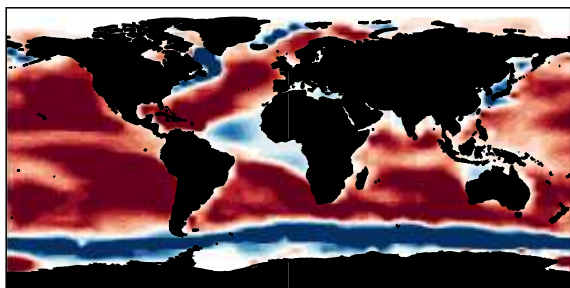
New Model Version: Sea Salt Uptake



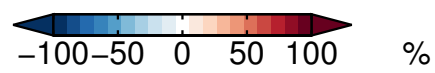
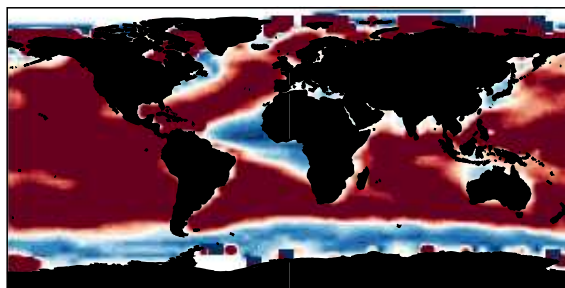
Old Model Version: Sea Salt Uptake



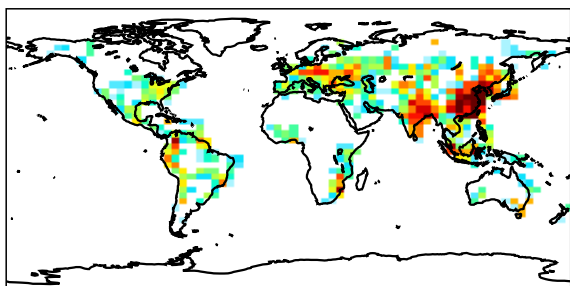
Absolute Difference



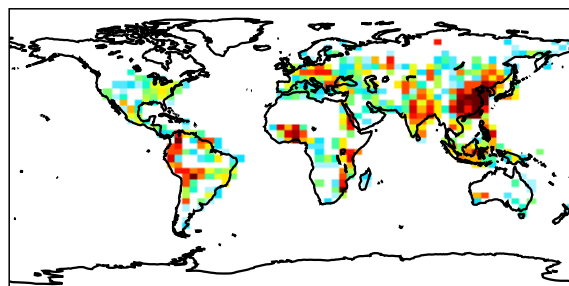
Percent Difference



New Model Version: Anthro Emissions – Hg(0) Old Model Version: Anthro Emissions – Hg(0)

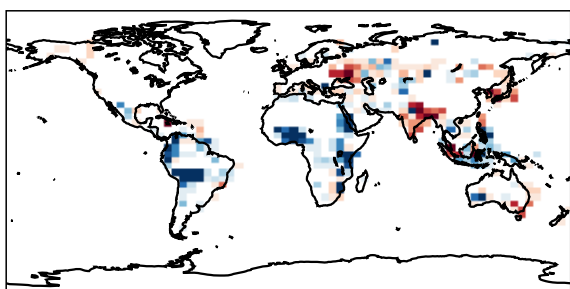


1.E-02 0.E+00 0.E+02 kg/y



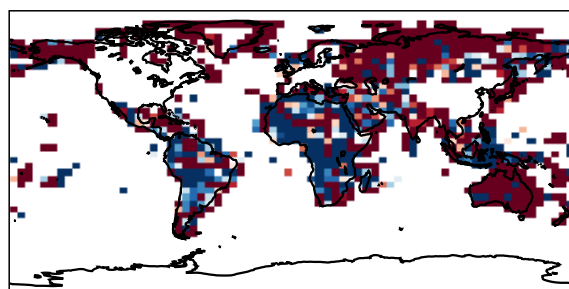
1.E-02 0.E+00 0.E+02 kg/y

Absolute Difference



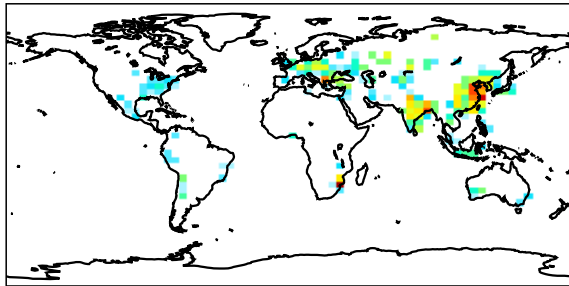
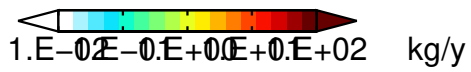
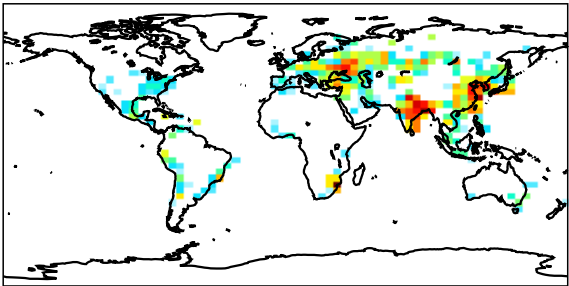
-20 -10 0 10 20 kg/y

Percent Difference

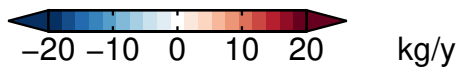
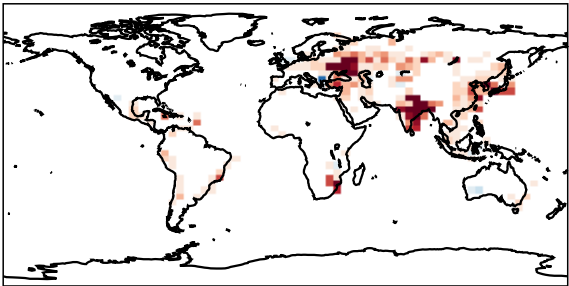


-50 -25 0 25 50 %

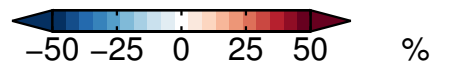
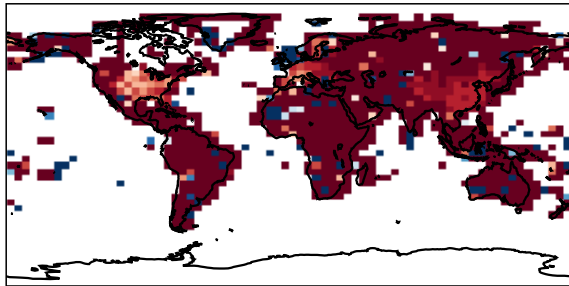
New Model Version: Anthro Emissions – Hg(II)+Hg(P) Old Model Version: Anthro Emissions – Hg(II)+Hg(P)



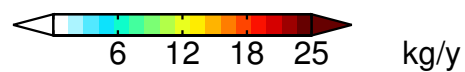
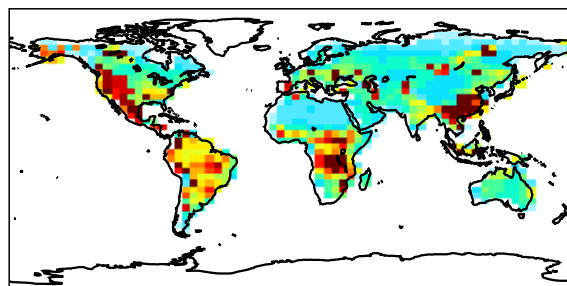
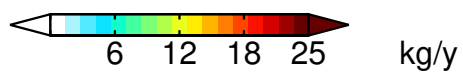
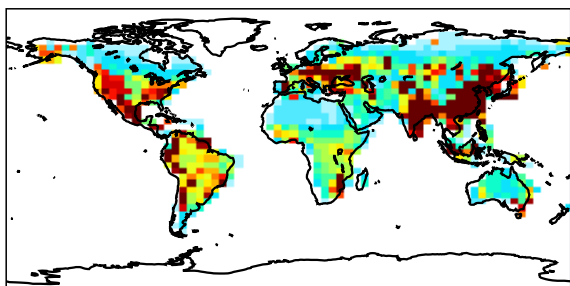
Absolute Difference



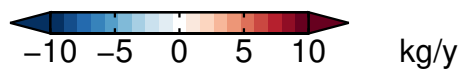
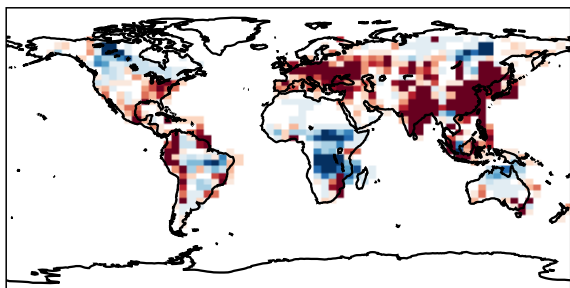
Percent Difference



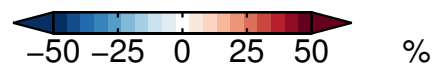
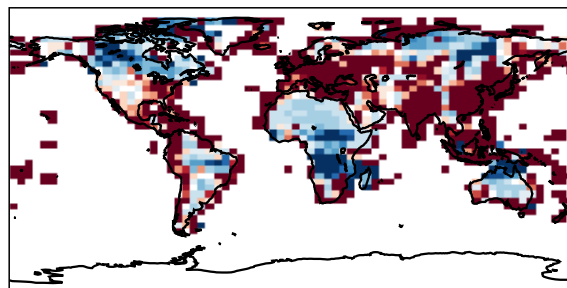
New Model Version: Direct Terrestrial – Geo, BB, & Soil Old Model Version: Direct Terrestrial – Geo, BB, & Soil



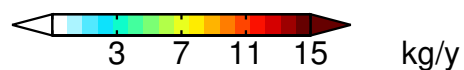
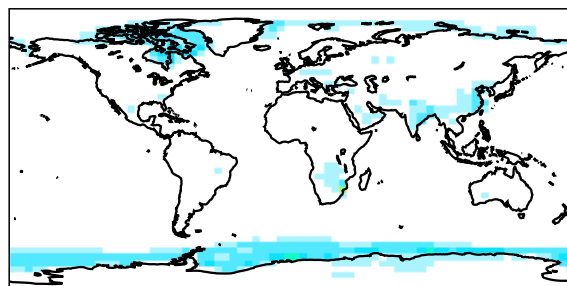
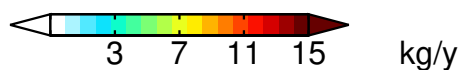
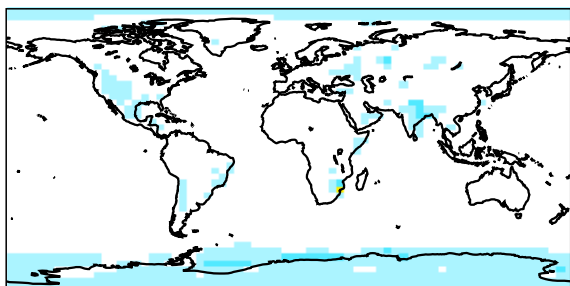
Absolute Difference



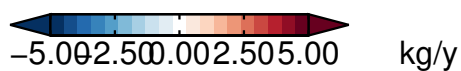
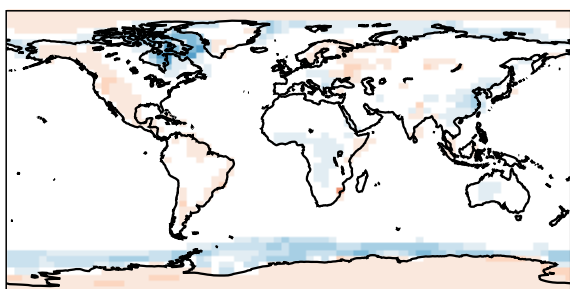
Percent Difference



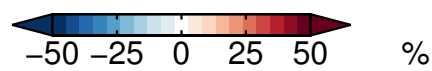
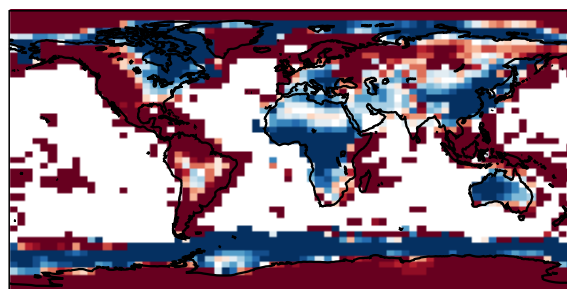
New Model Version: Prompt Reemission – Land & Snow Old Model Version: Prompt Reemission – Land & Snow



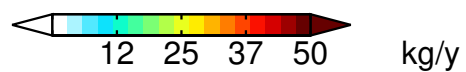
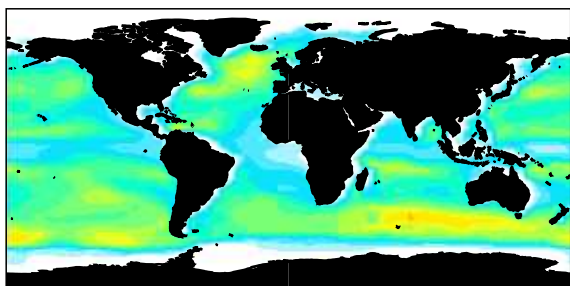
Absolute Difference



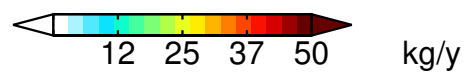
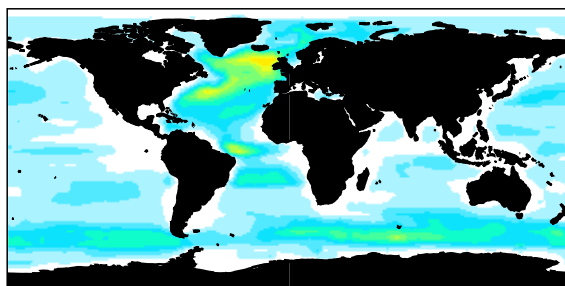
Percent Difference



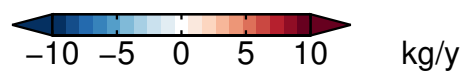
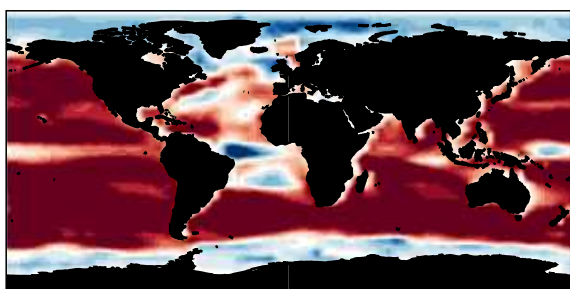
New Model Version: Gross Ocean Evasion



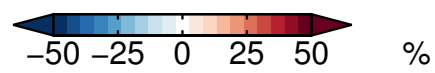
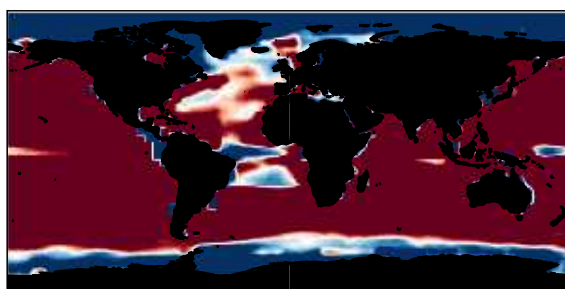
Old Model Version: Gross Ocean Evasion



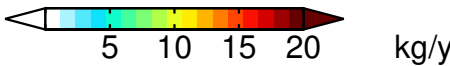
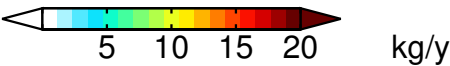
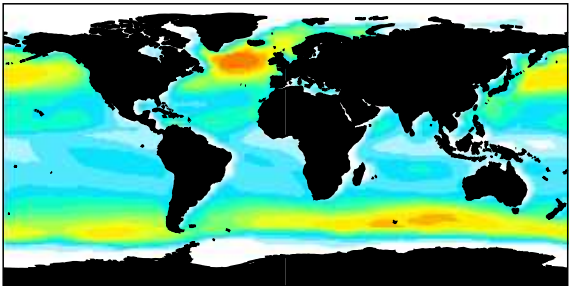
Absolute Difference



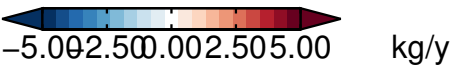
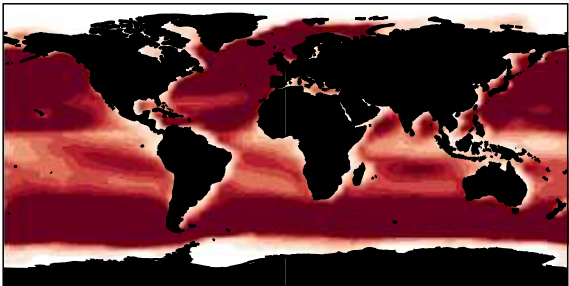
Percent Difference



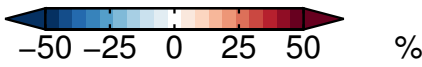
New Model Version: Gross Ocean Hg(0) UptakeOld Model Version: Gross Ocean Hg(0) Uptake



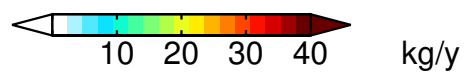
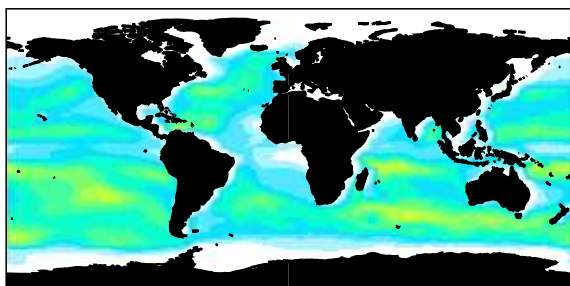
Absolute Difference



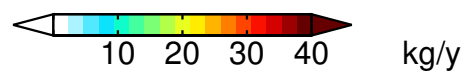
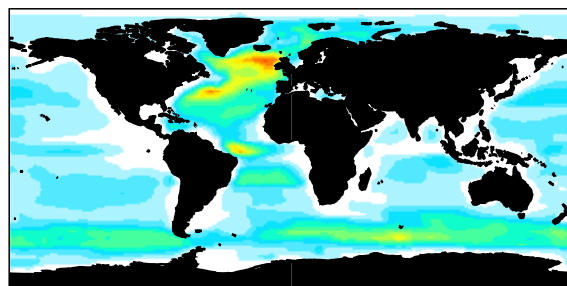
Percent Difference



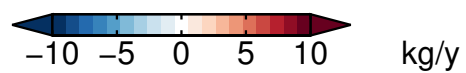
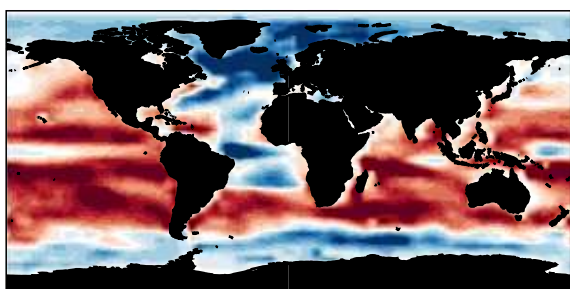
New Model Version: Net Ocean Evasion



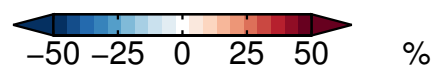
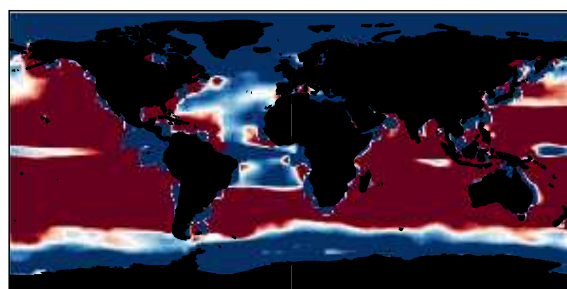
Old Model Version: Net Ocean Evasion



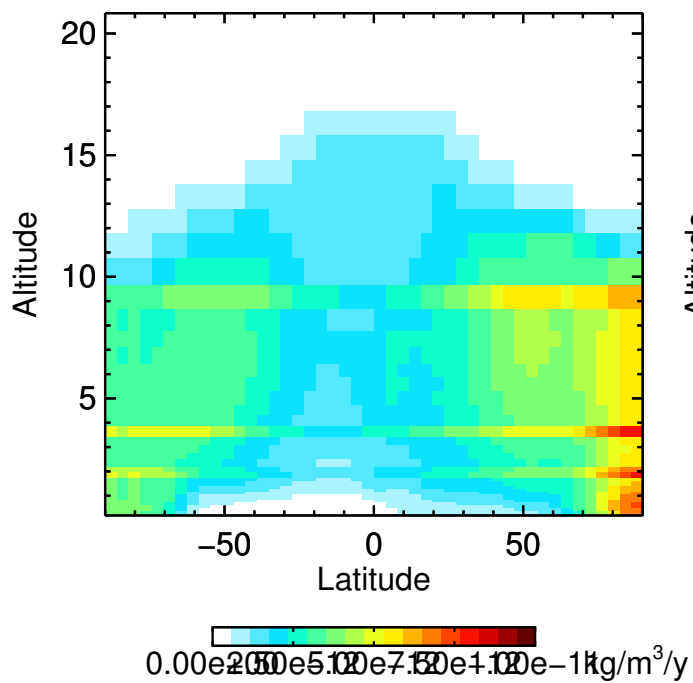
Absolute Difference



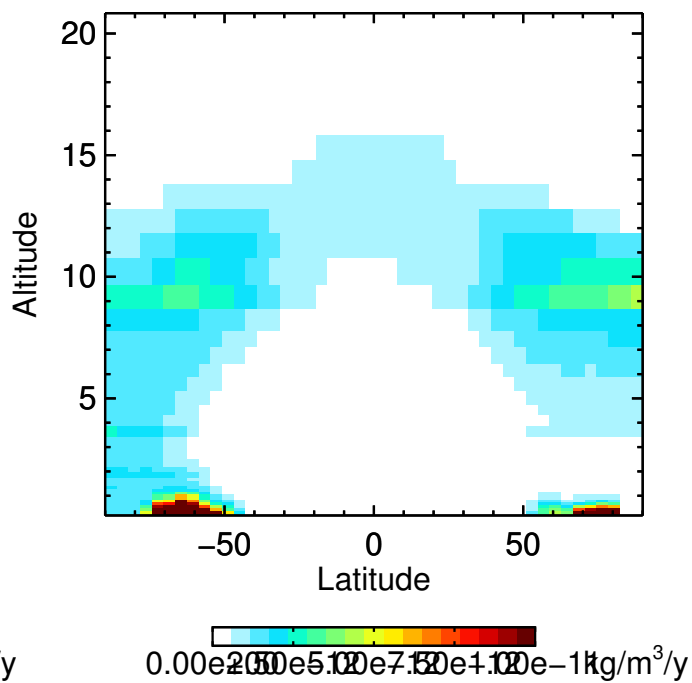
Percent Difference



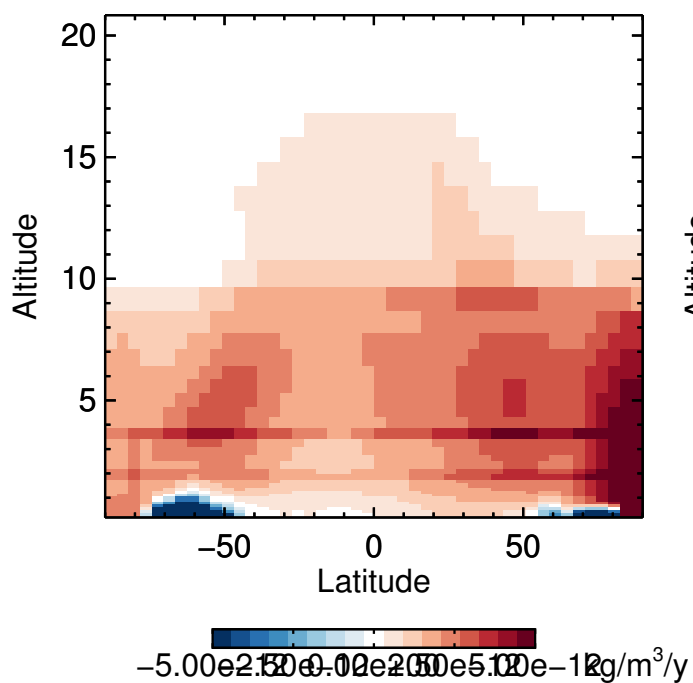
New Model Version: Zonal Gross Ox



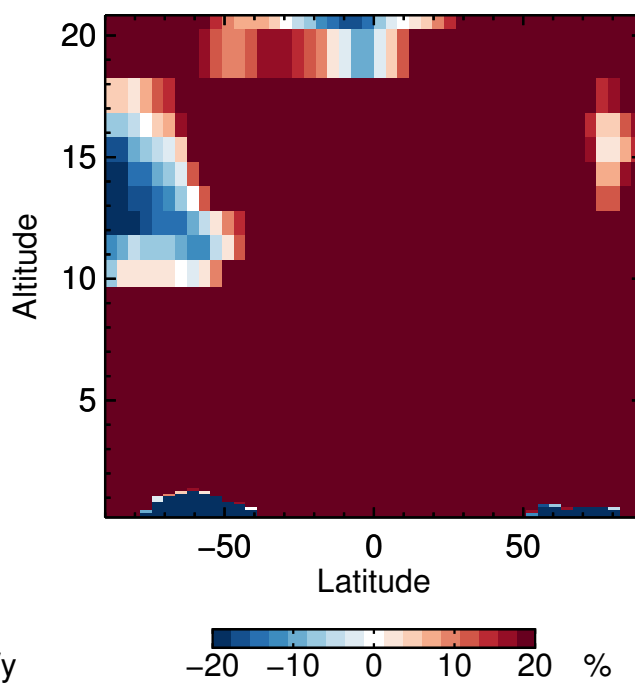
Old Model Version: Zonal Gross Ox



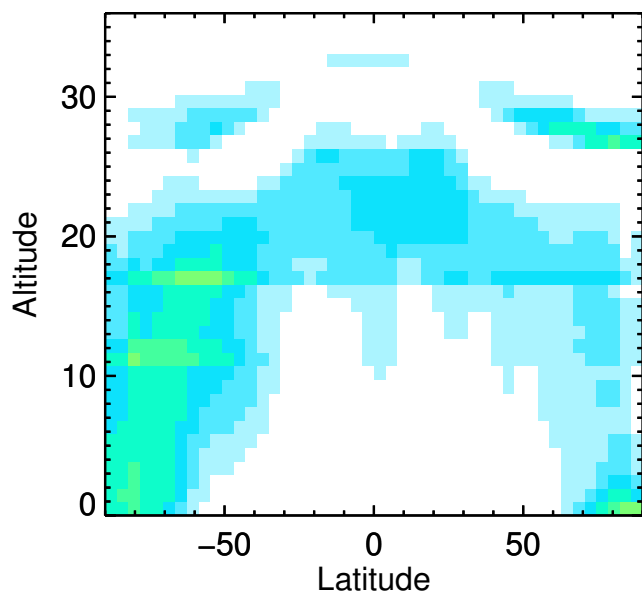
Absolute Difference



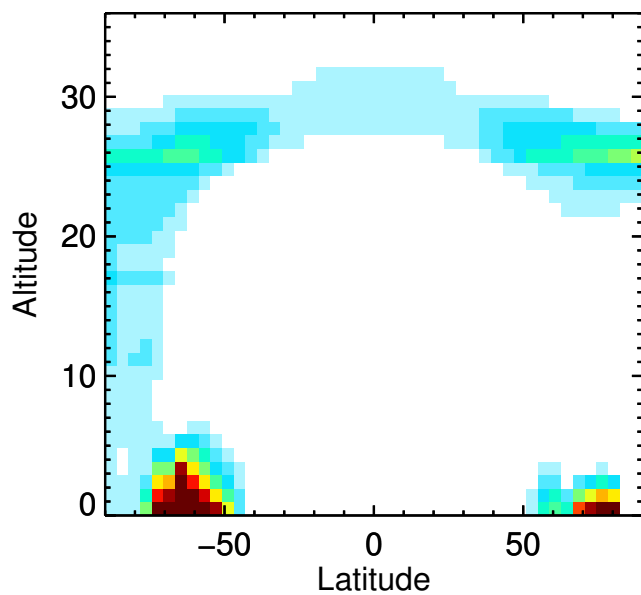
Percent Difference



New Model Version: Zonal Net OxidationOld Model Version: Zonal Net Oxidation

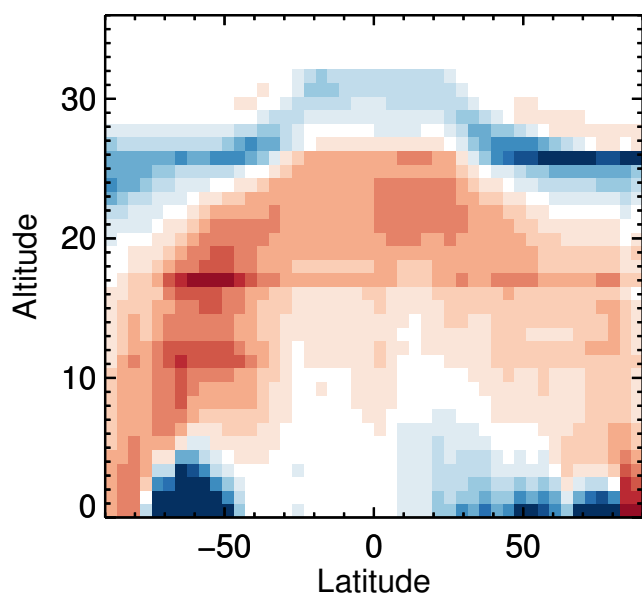


0.00e+00 2.50e-12 5.00e-12 7.50e-12 1.00e-11 kg/m³/y



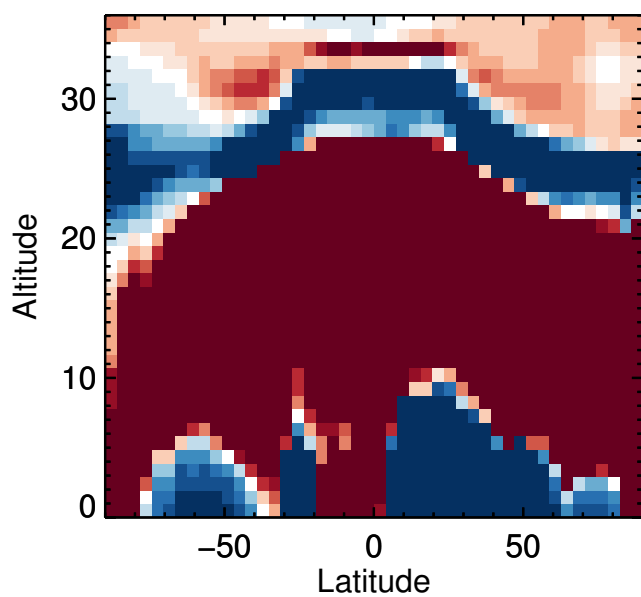
0.00e+00 2.50e-12 5.00e-12 7.50e-12 1.00e-11 kg/m³/y

Absolute Difference



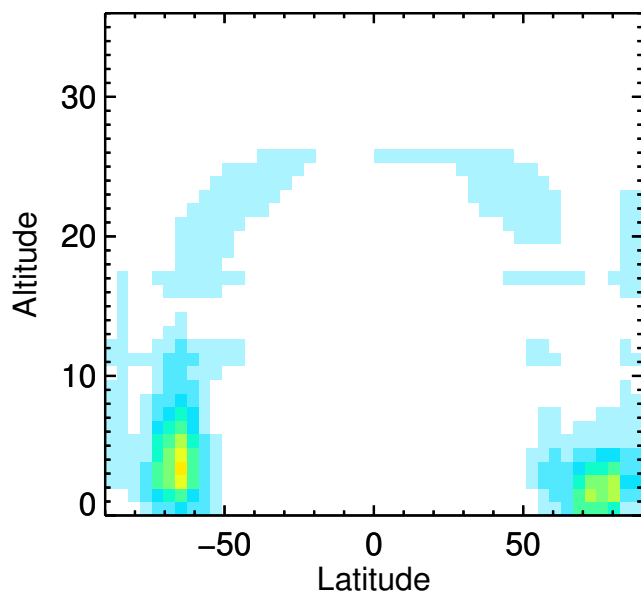
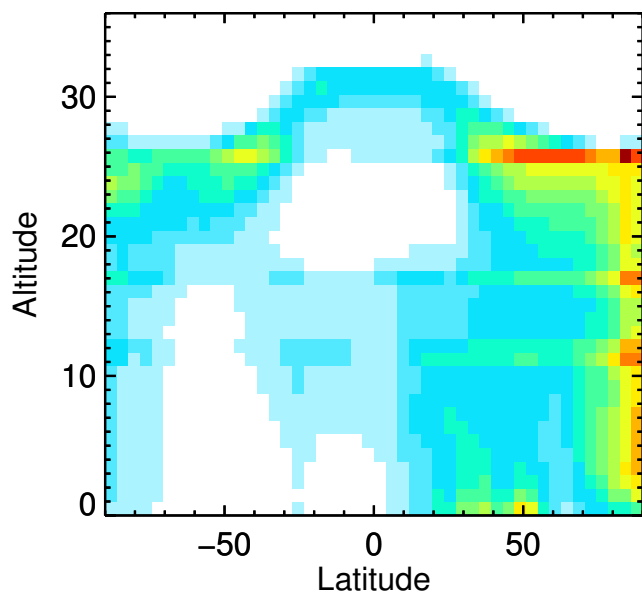
-5.00e-12 -2.50e-12 0.00e+00 2.50e-12 5.00e-12 kg/m³/y

Percent Difference

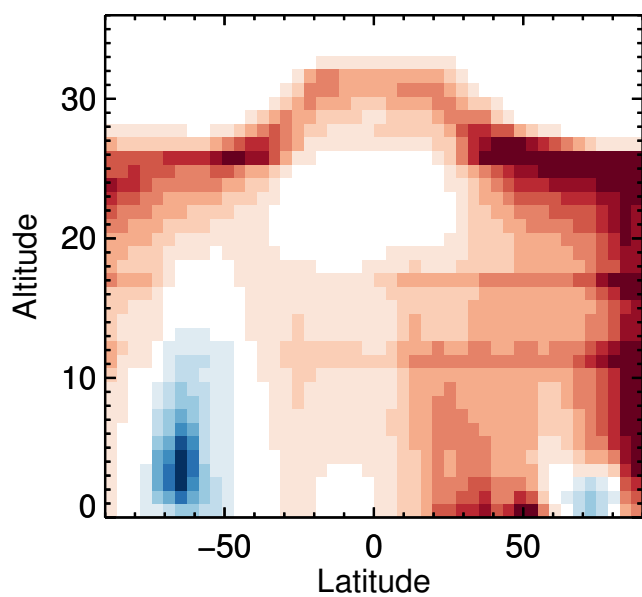


-100 -50 0 50 100 %

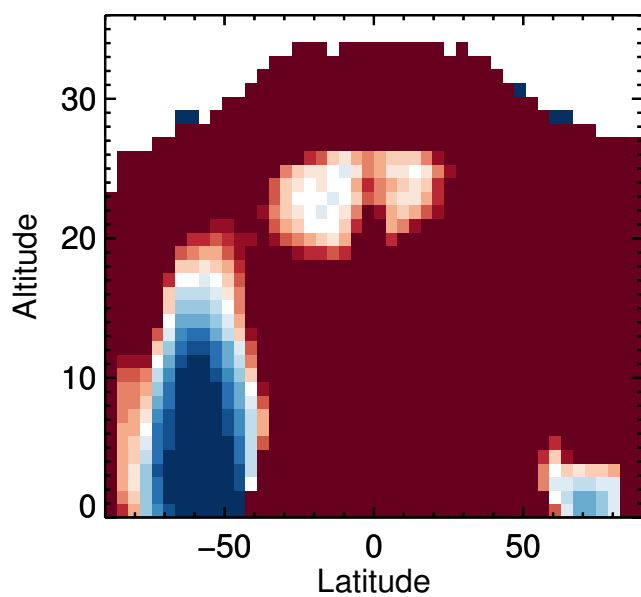
New Model Version: Zonal Gross Reduction Old Model Version: Zonal Gross Reduction



Absolute Difference



Percent Difference



OLD MODEL VERSION NEW MODEL VERSION

TROPOSPHERIC MASS		DEPOSITION	
Hg ⁰ :	3797 3473 Mg	Hg ⁰ dd:	1206 1189 Mg/y
Hg ² :	247 208 Mg	Hg ² dd:	613 619 Mg/y
Hg ^P :	136 75 Mg	Hg ^P dd:	25 16 Mg/y
		Hg ² wd:	2509 4202 Mg/y
SURFACE OCEAN MASS		Hg ^P wd:	256 146 Mg/y
Hg ⁰ :	203 Mg	Hg ⁰ oc uptake:	79 1738 Mg/y
Hg ² :	2190 Mg	Hg ² seasalt:	799 1213 Mg/y
Hg ^P :	140 Mg	TOTAL DEPOSITION:	5490 9126 Mg/y
EMISSIONS		REDOX	
Hg ⁰ anthro:	1558 1275 Mg/y	Gross Ox:	5745 16155 Mg/y
Hg ² anthro:	229 546 Mg/y	Gross Reduction:	1765 10520 Mg/y
Hg ^P anthro:	Mg/y	Net Oxidation	3980 5635 Mg/y
Hg ⁰ geo:	250 250 Mg/y		
Hg ⁰ soil:	967 837 Mg/y		
Hg ⁰ bb:	252 1275 Mg/y		
Hg ⁰ land re:	71 74 Mg/y		
Hg ⁰ snow:	72 51 Mg/y		
Hg ⁰ oc evasion:	2060 4767 Mg/y		
TOTAL EMISSIONS:	5463 9078 Mg/y		