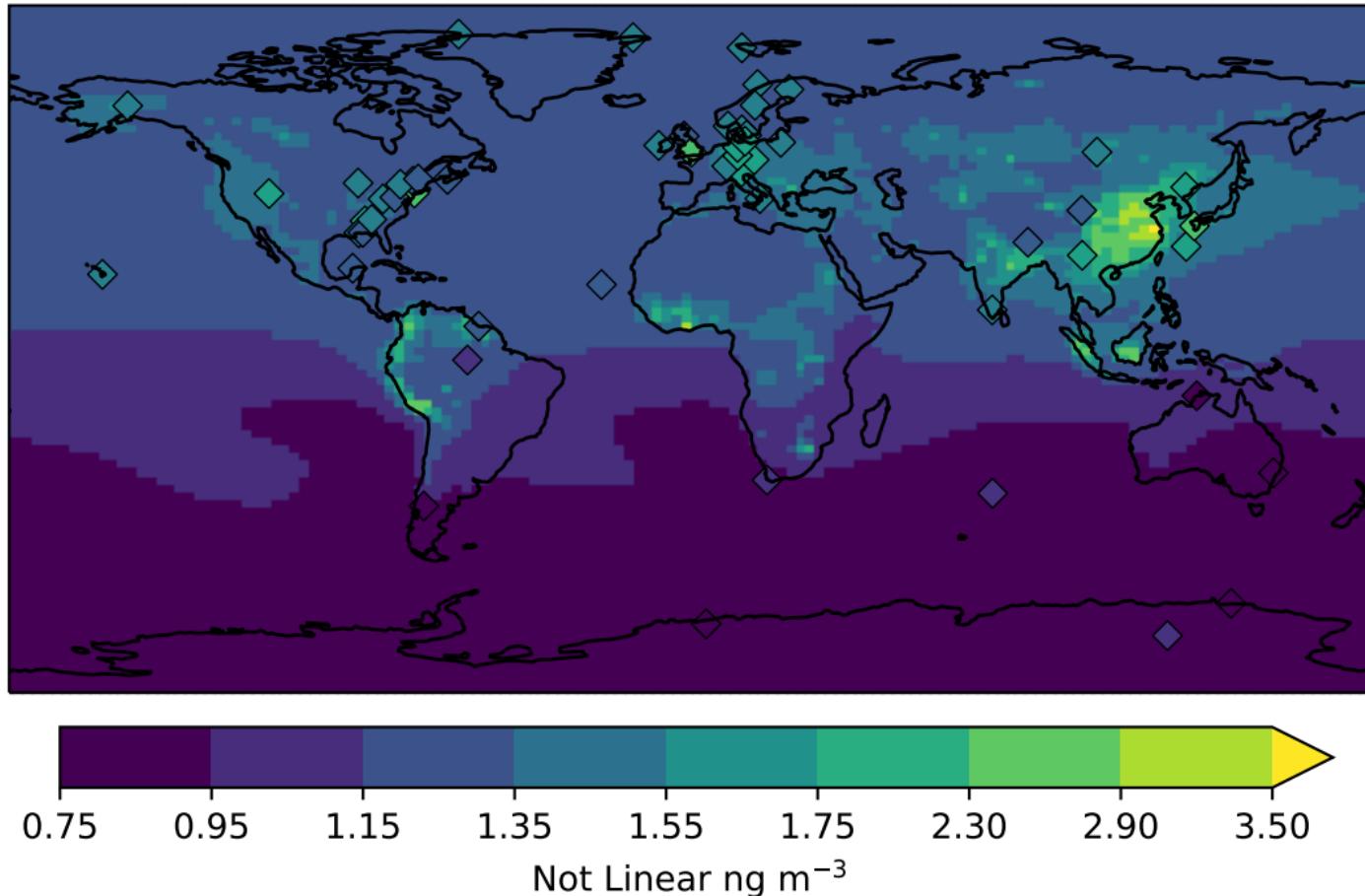


Reference Model Version: Surface TGM

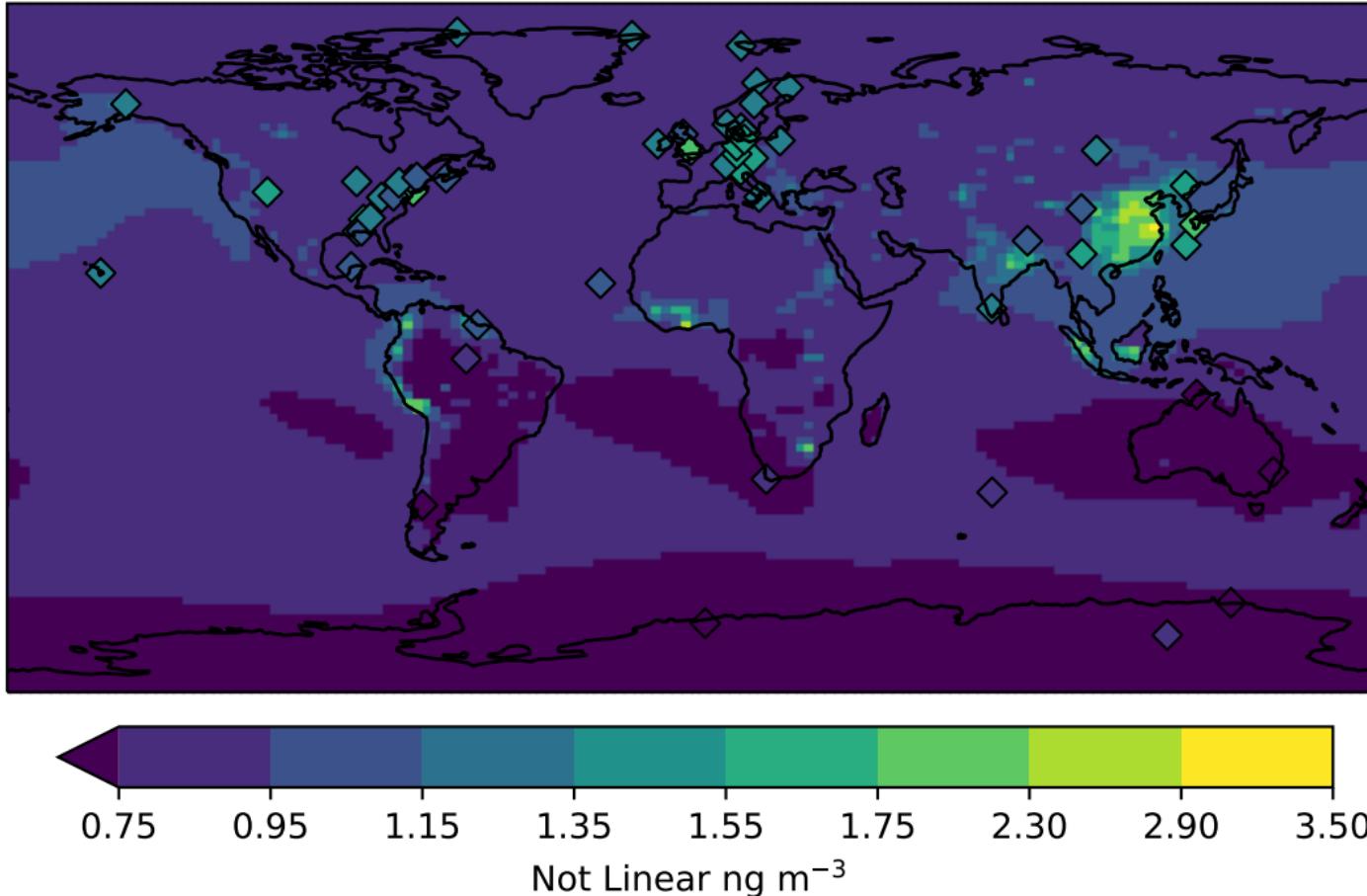


Terrestrial $R^2 = 0.598$

Mean Mod. = $1.29 \pm 0.19 \text{ ng m}^{-3}$

Mean Obs. = $1.39 \pm 0.26 \text{ ng m}^{-3}$

New Model Version: Surface TGM

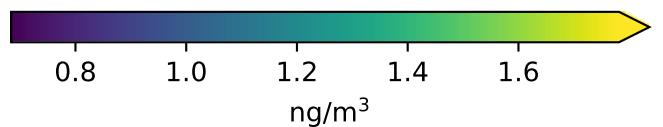
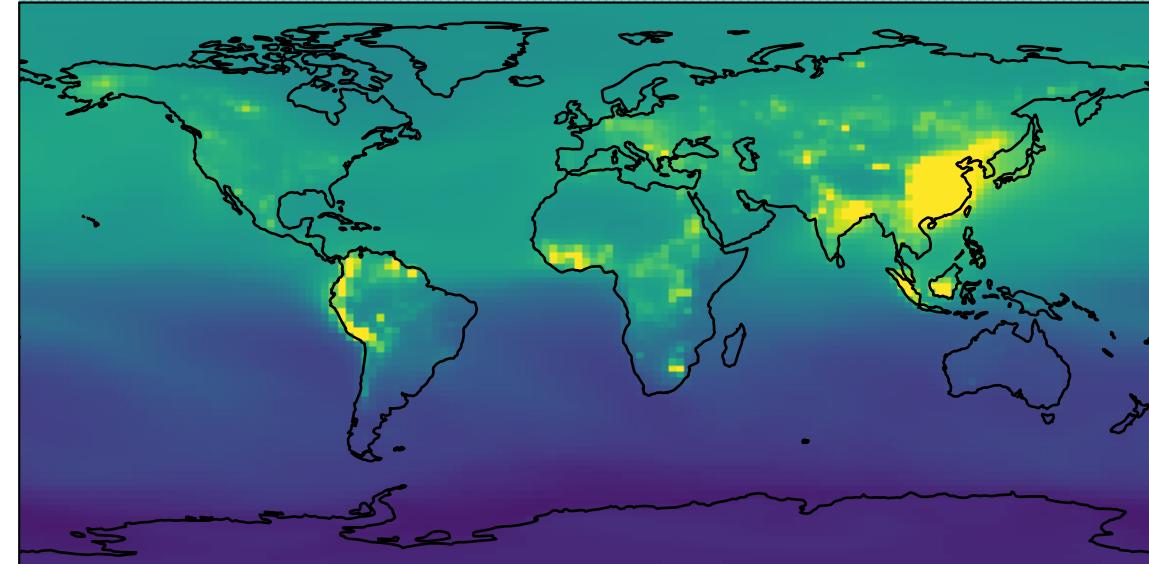


Terrestrial $R^2 = 0.432$

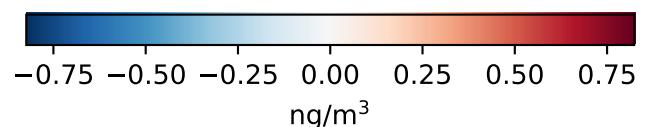
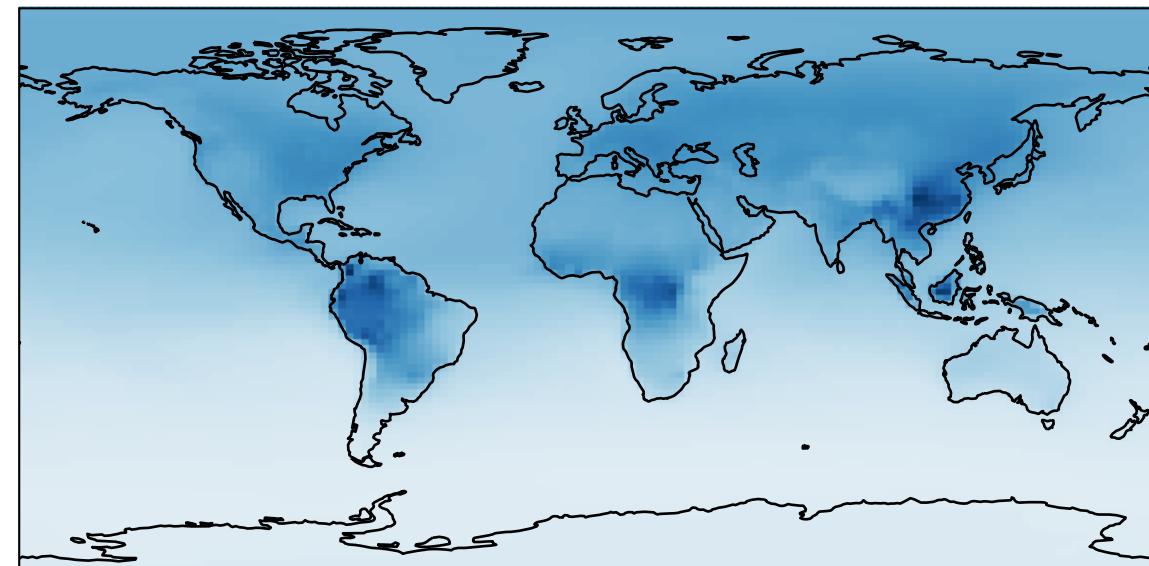
Mean Mod. = $0.87 \pm 0.11 \text{ ng m}^{-3}$

Mean Obs. = $1.39 \pm 0.26 \text{ ng m}^{-3}$

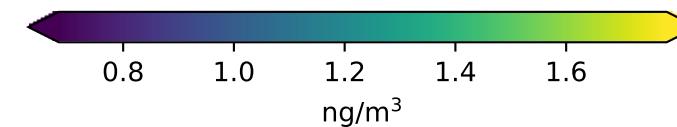
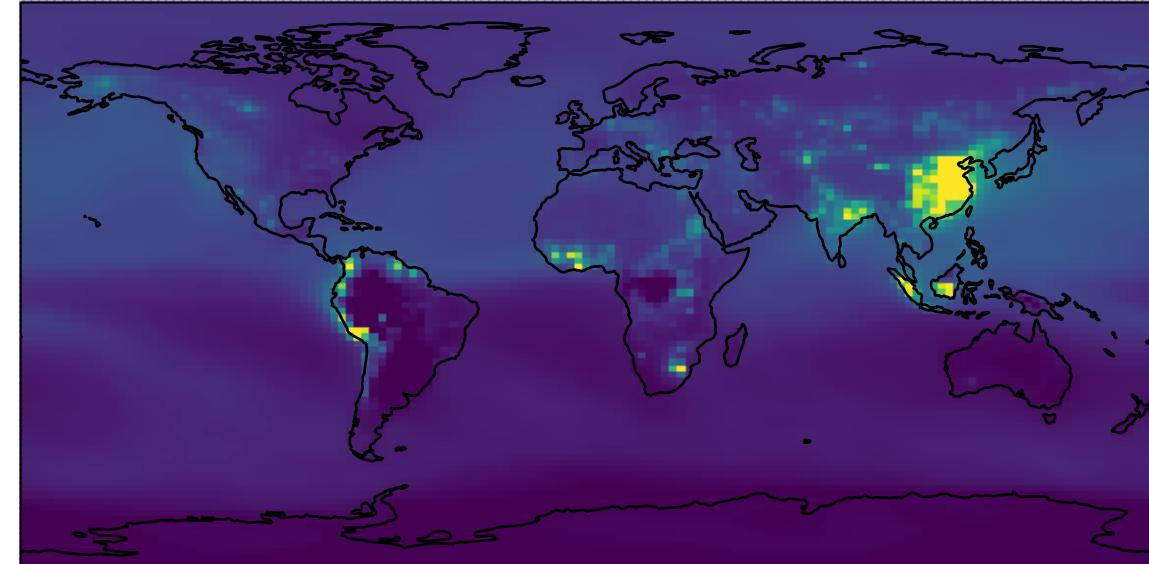
Reference Model Version: Surface TGM



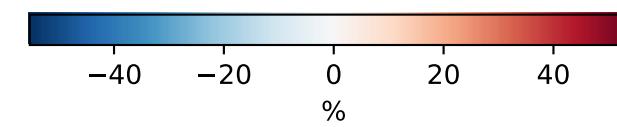
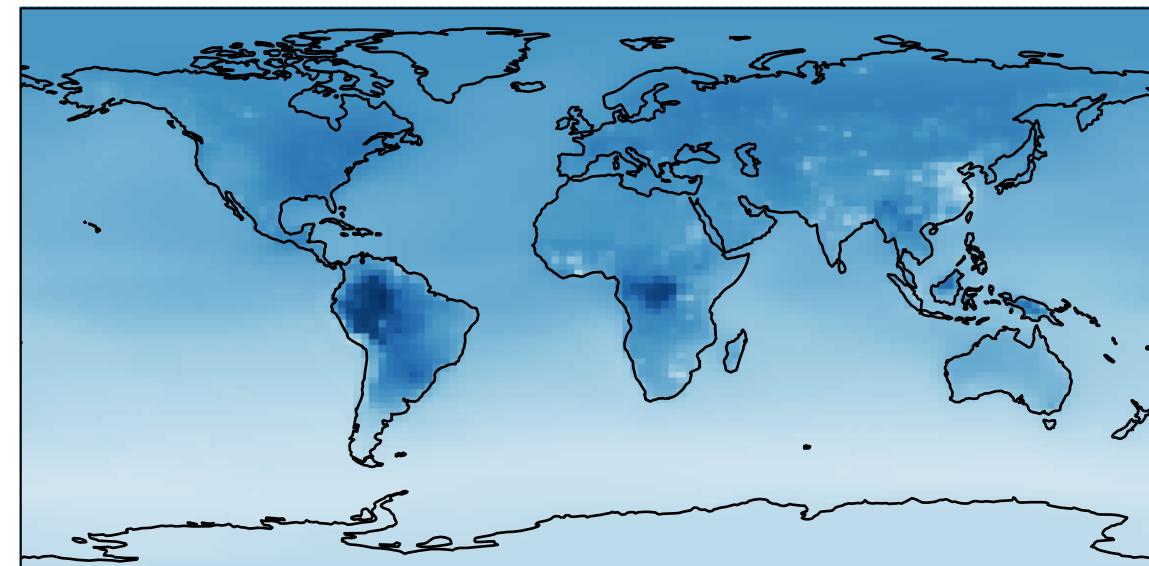
Absolute Difference



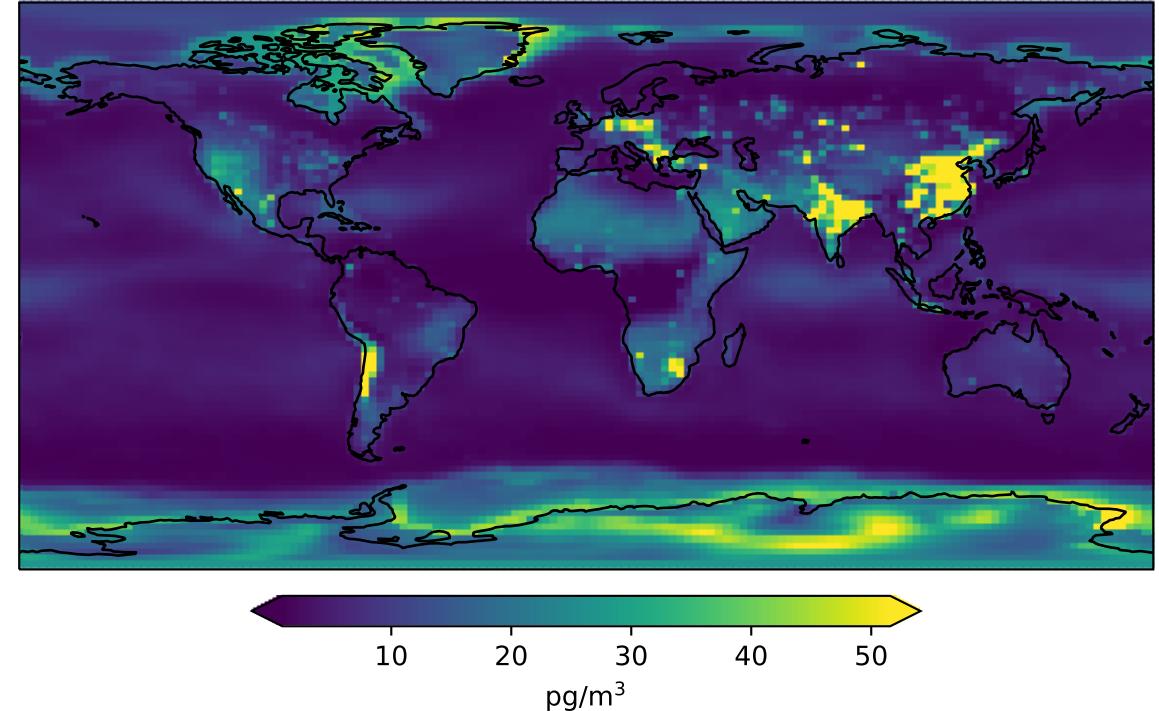
New Model Version: Surface TGM



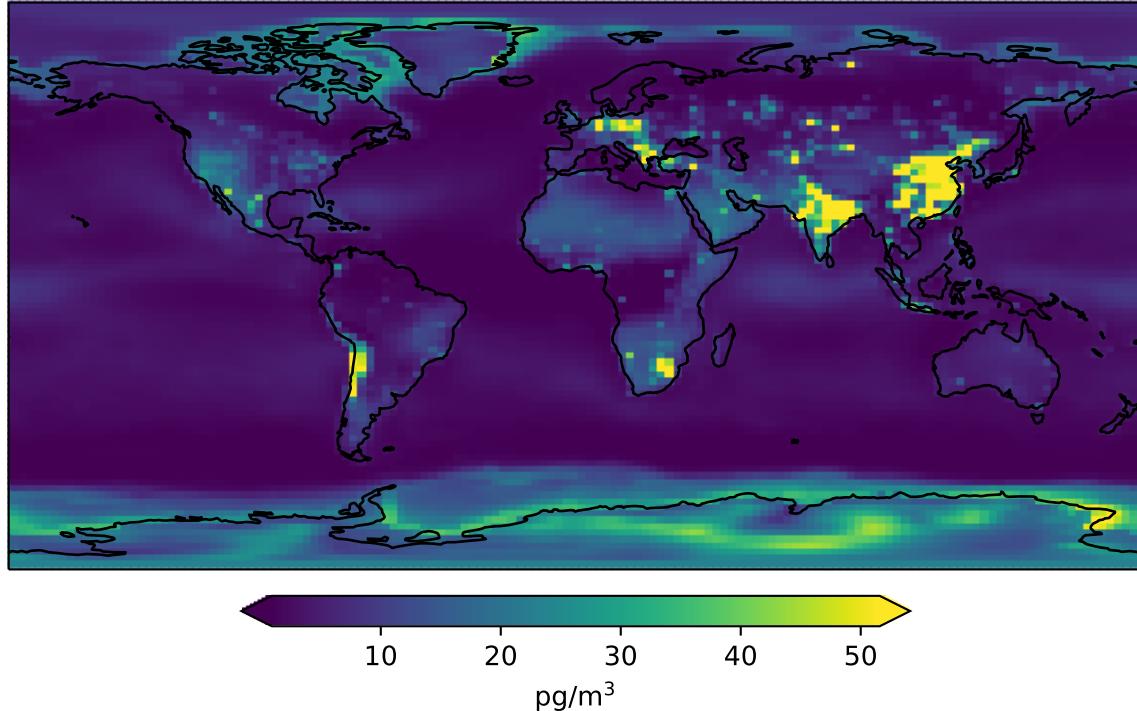
Percent Difference (%)



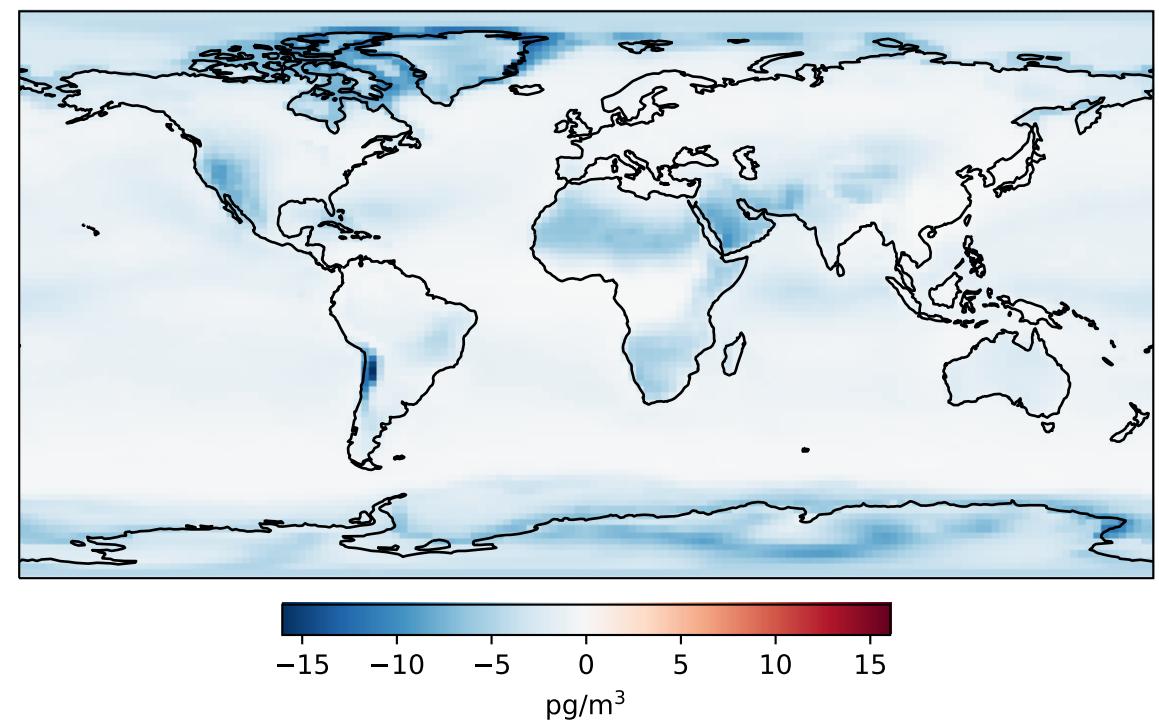
Reference Model Version: Surface Hg(II)+Hg(P)



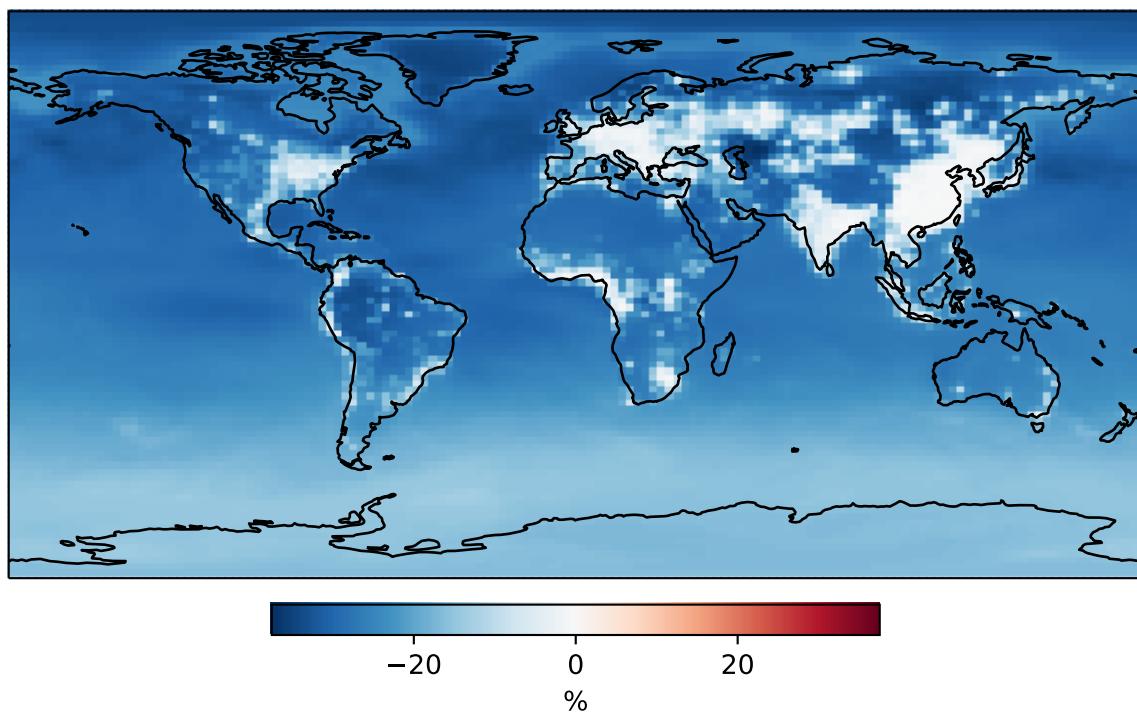
New Model Version: Surface Hg(II)+Hg(P)



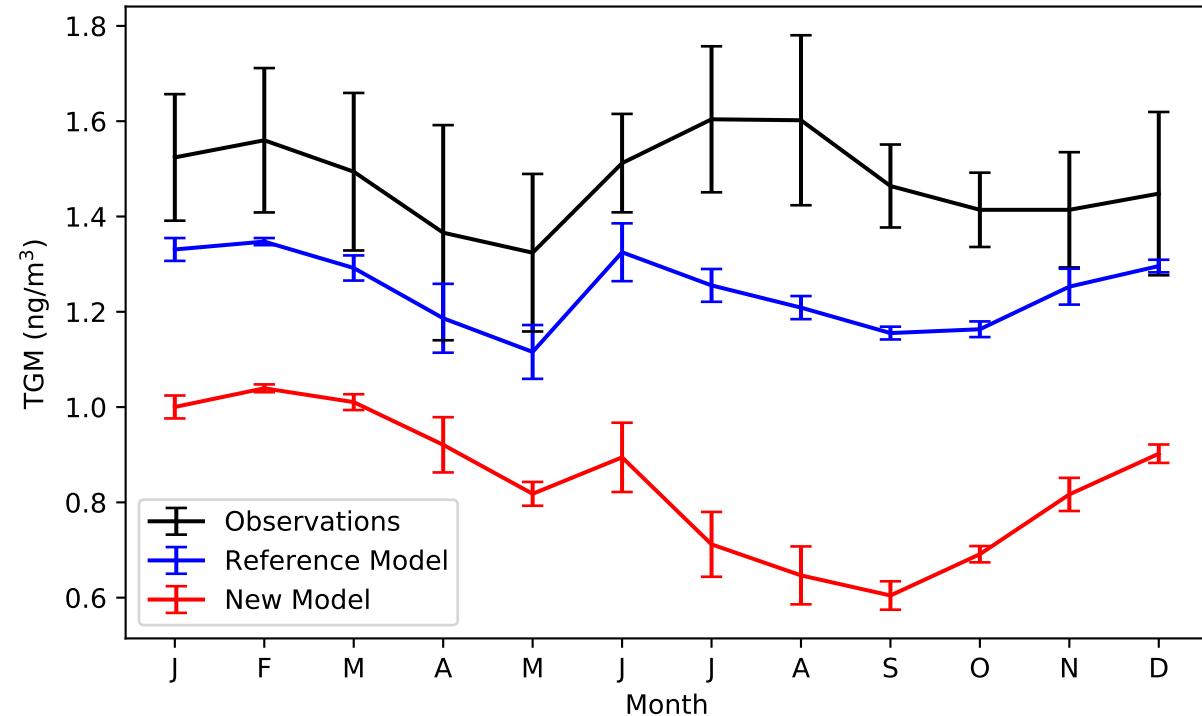
Absolute Difference



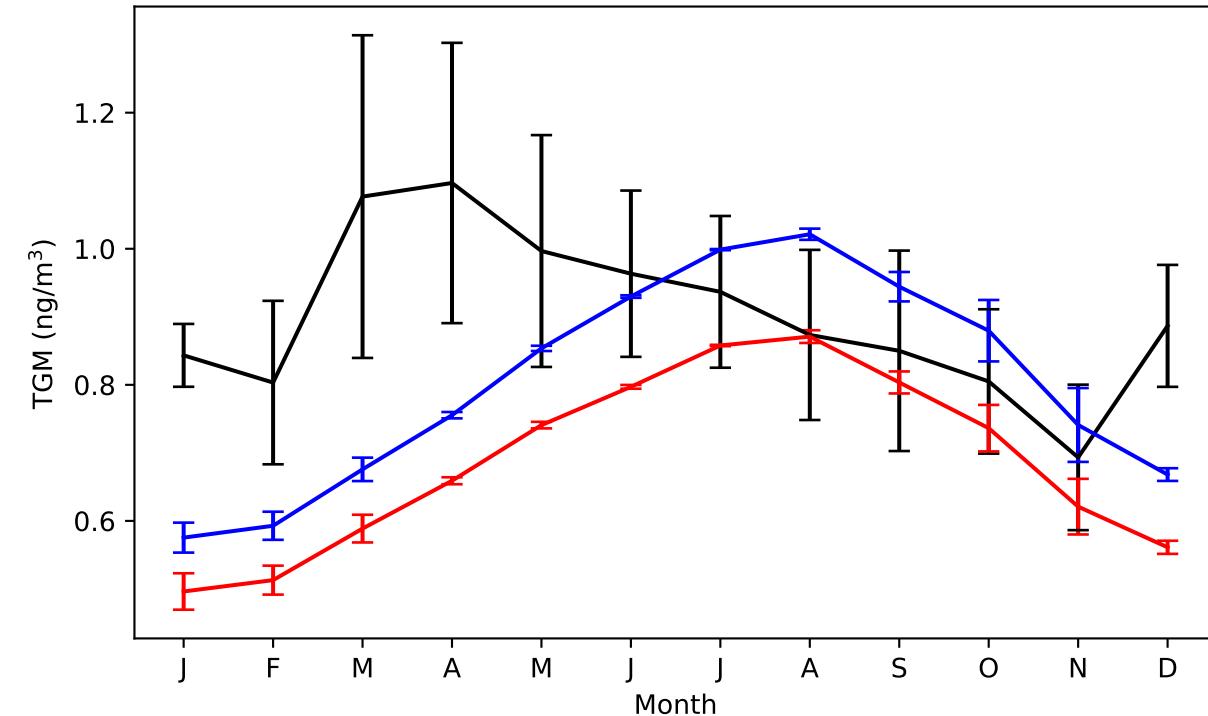
Percent Difference (%)



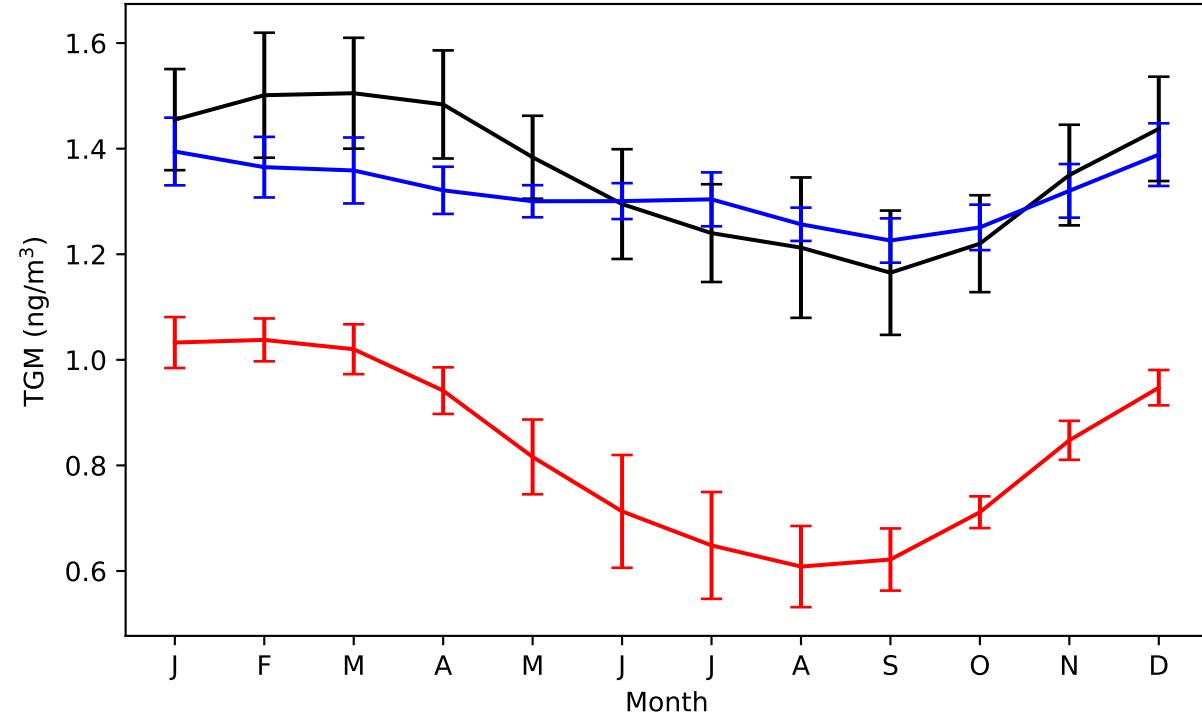
Arctic



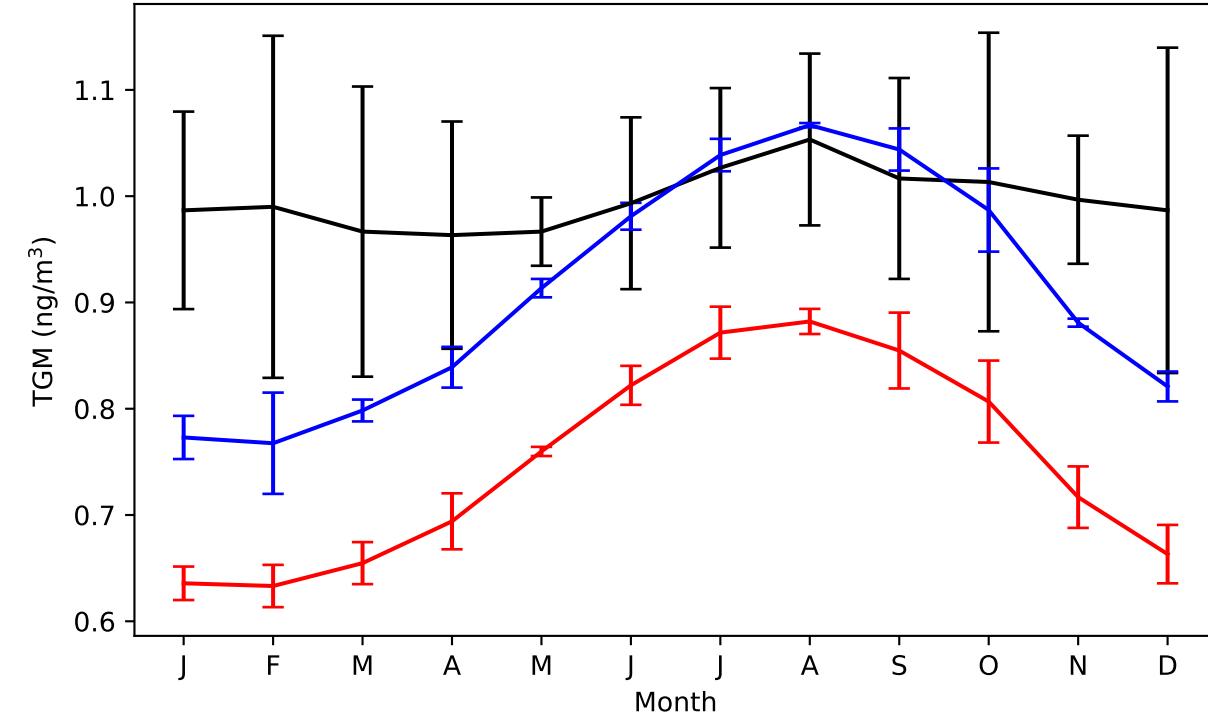
Antarctic



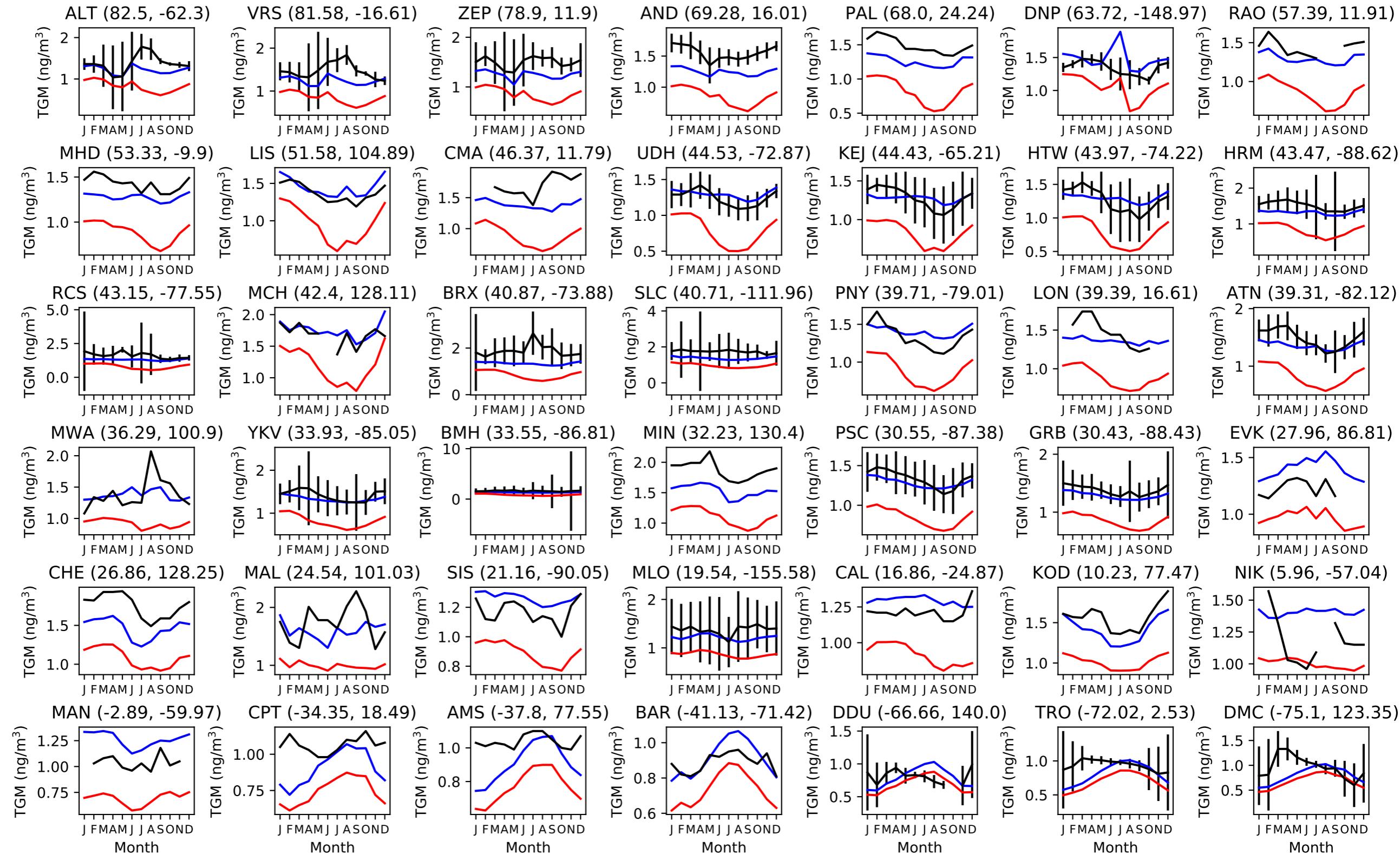
Northern Mid Latitudes



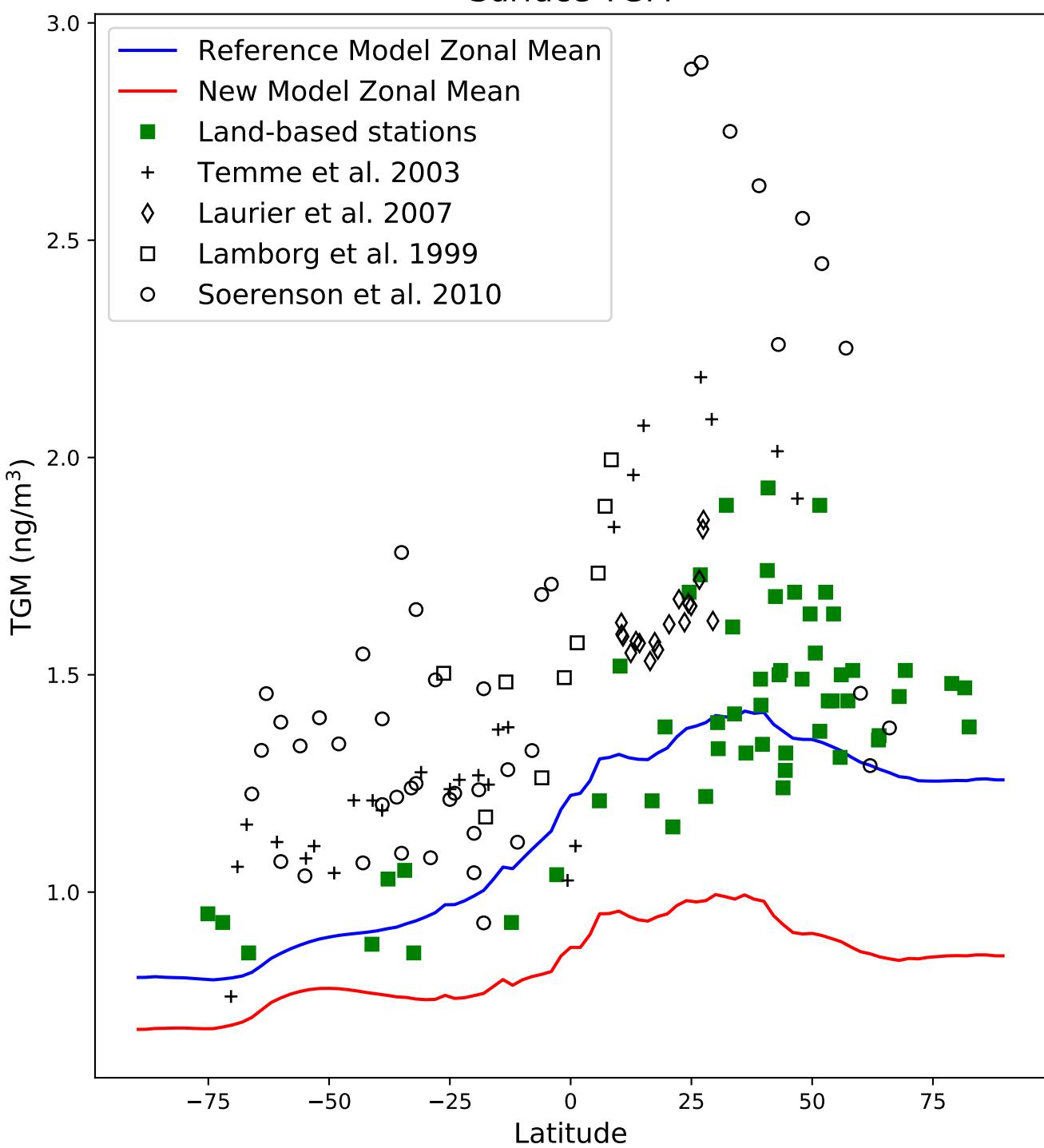
Southern Mid Latitudes



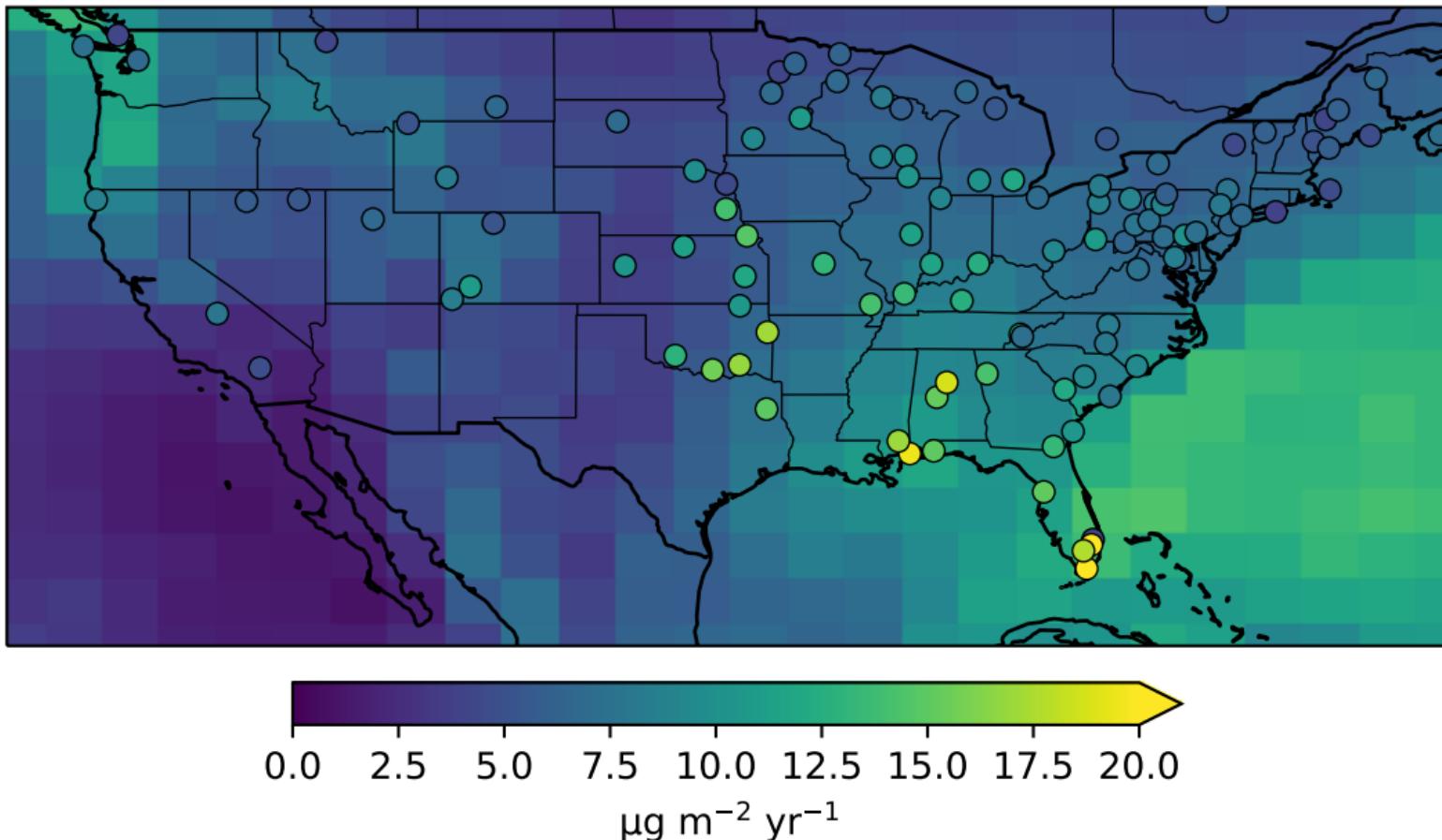
— Reference Model
— New Model
+————— Observations



Surface TGM



Hg Wet Deposition, Reference Model (2015), MDN (2015)

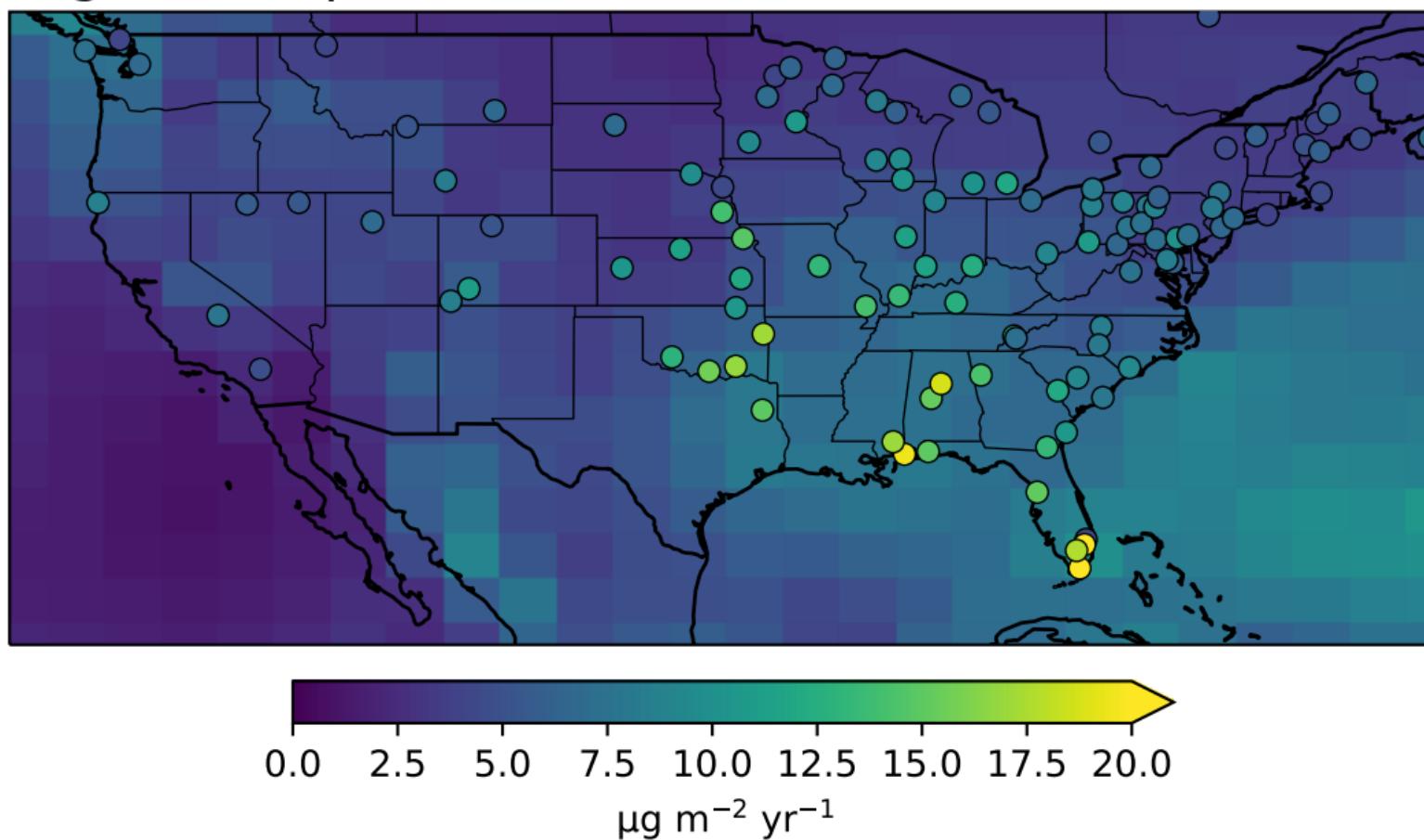


$$R^2 = 0.277$$

$$\text{Mean Mod.} = 7.0 \pm 2.3 \mu\text{g m}^{-2} \text{yr}^{-1}$$

$$\text{Mean Obs.} = 8.9 \pm 4.1 \mu\text{g m}^{-2} \text{yr}^{-1}$$

Hg Wet Deposition, New Model (2015), MDN (2015)



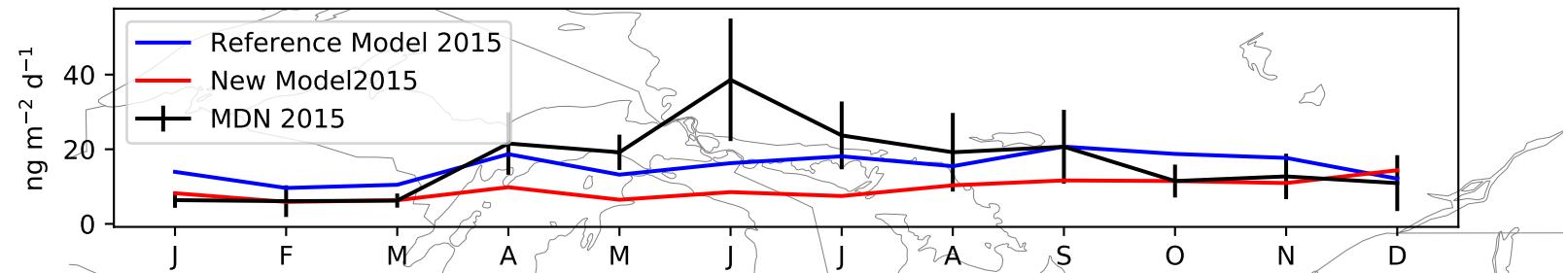
$$R^2 = 0.527$$

$$\text{Mean Mod.} = 4.9 \pm 1.8 \mu\text{g m}^{-2} \text{yr}^{-1}$$

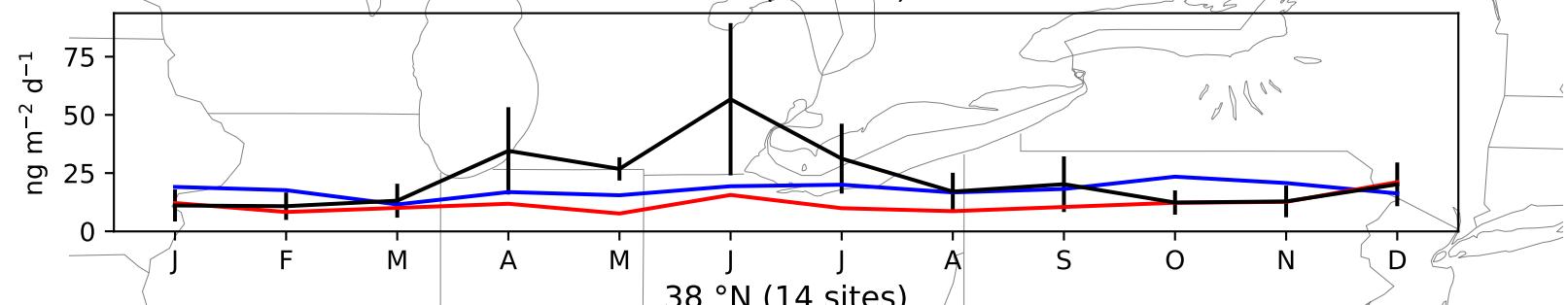
$$\text{Mean Obs.} = 8.9 \pm 4.1 \mu\text{g m}^{-2} \text{yr}^{-1}$$

Wet deposition fluxes, Eastern USA

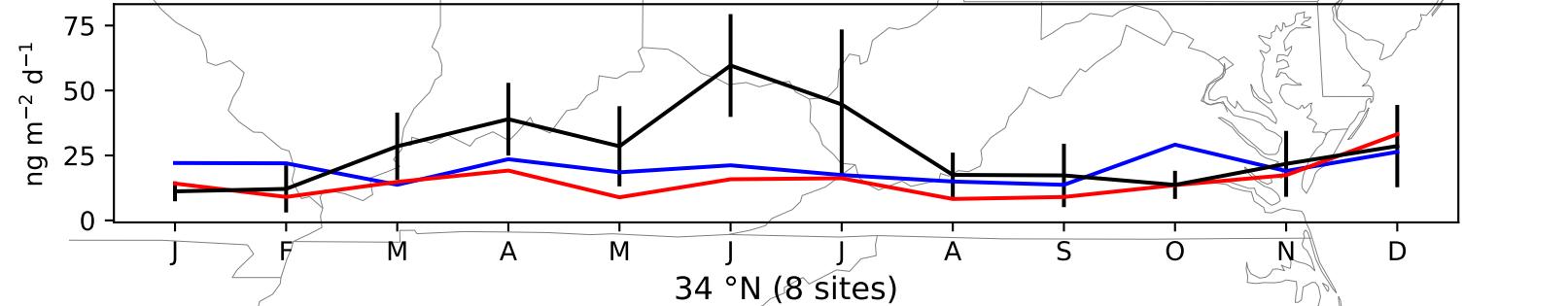
46 °N (7 sites)



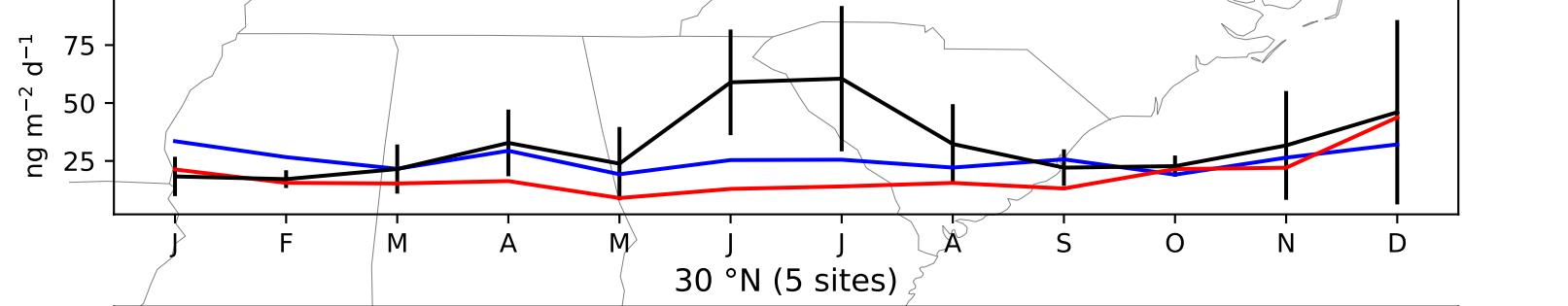
42 °N (21 sites)



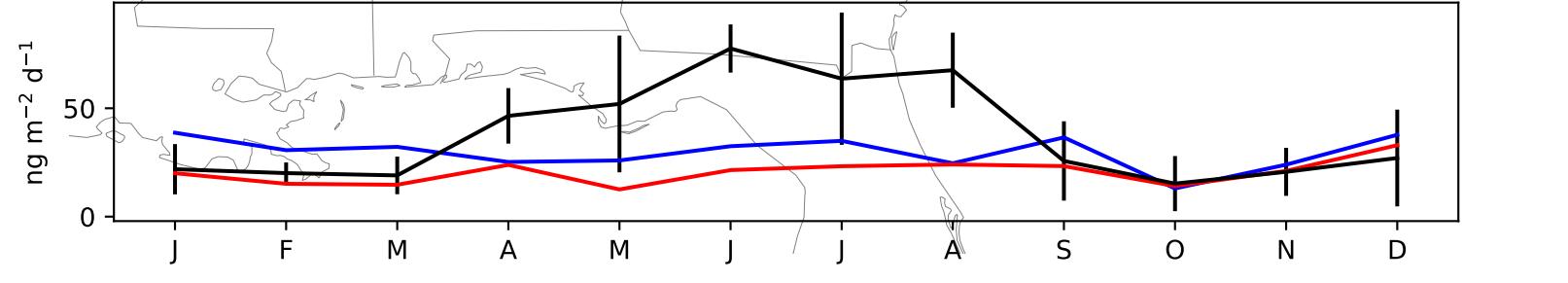
38 °N (14 sites)



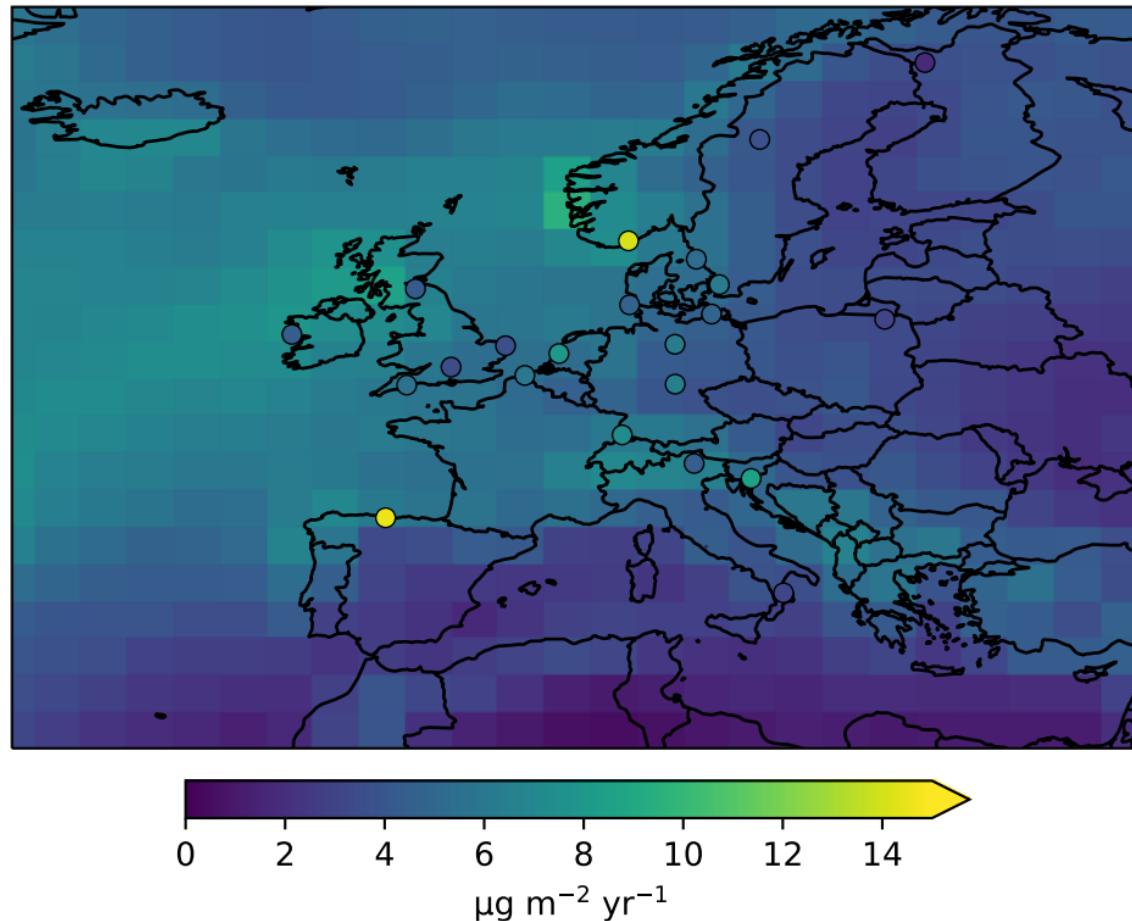
34 °N (8 sites)



30 °N (5 sites)



Hg Wet Deposition, Reference Model (2015), EMEP (2013-15)

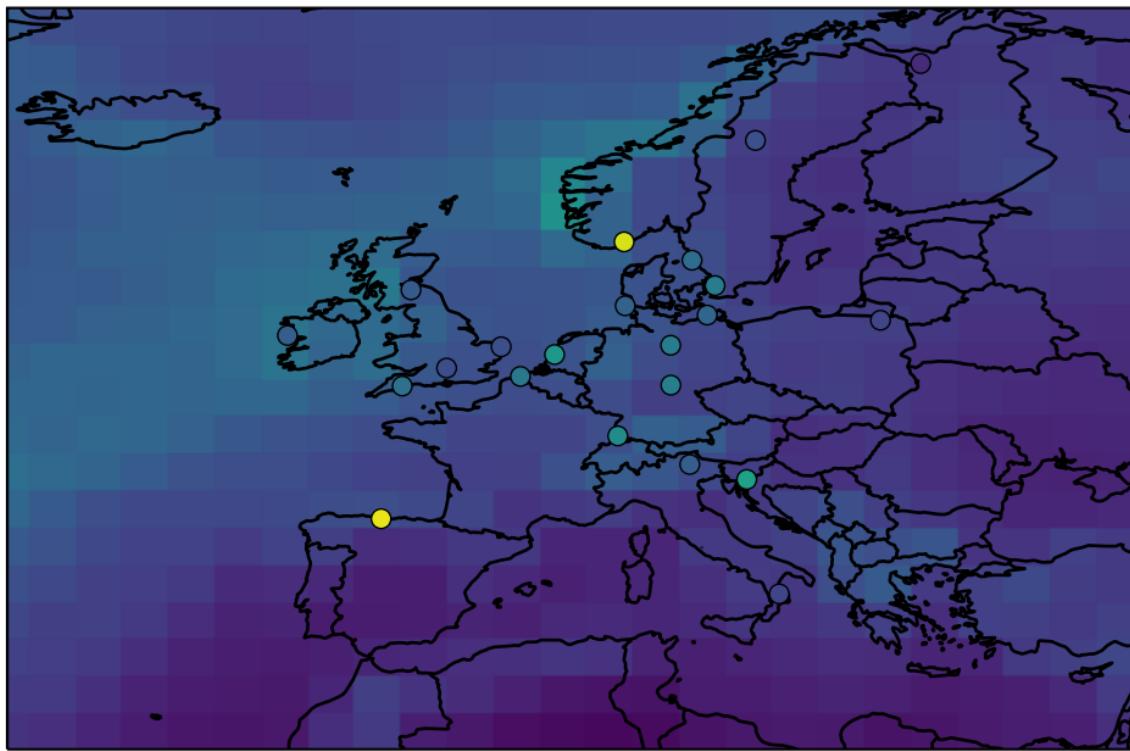


$$R^2 = 0.168$$

$$\text{Mean Mod.} = 5.3 \pm 1.1 \mu\text{g m}^{-2} \text{yr}^{-1}$$

$$\text{Mean Obs.} = 5.9 \pm 3.1 \mu\text{g m}^{-2} \text{yr}^{-1}$$

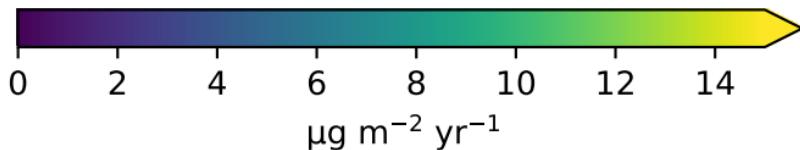
Hg Wet Deposition, New Model (2015), EMEP (2013-15)



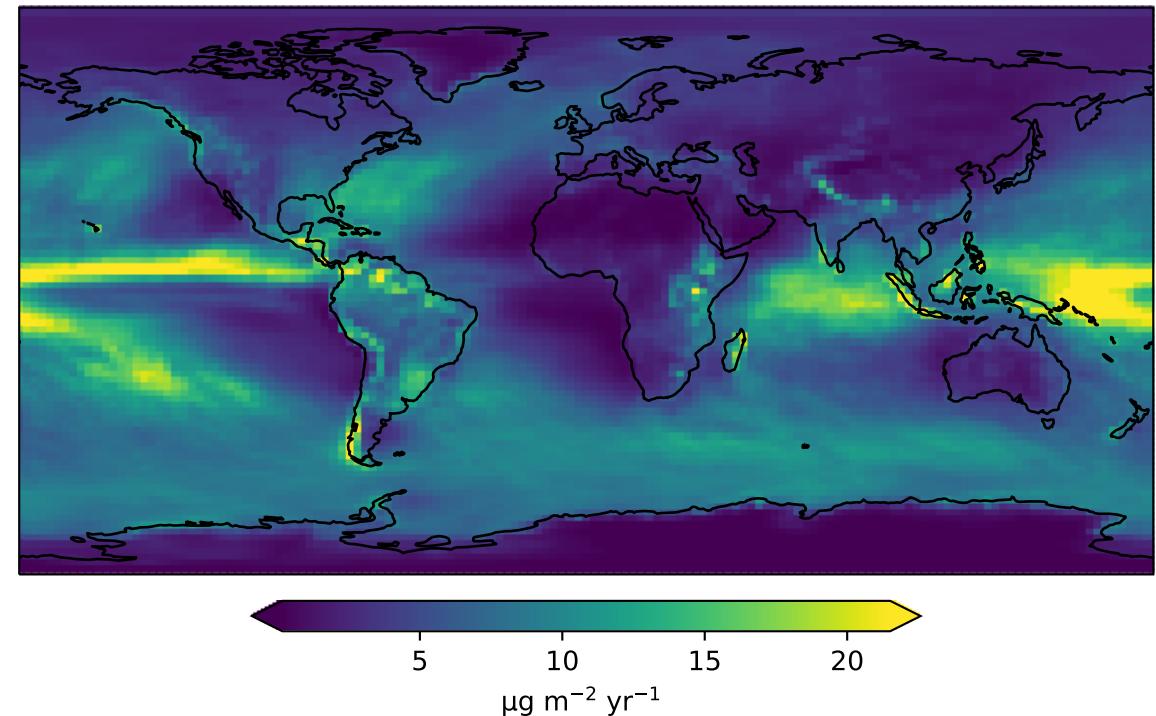
$$R^2 = 0.069$$

Mean Mod. = $3.5 \pm 0.7 \text{ } \mu\text{g m}^{-2} \text{ yr}^{-1}$

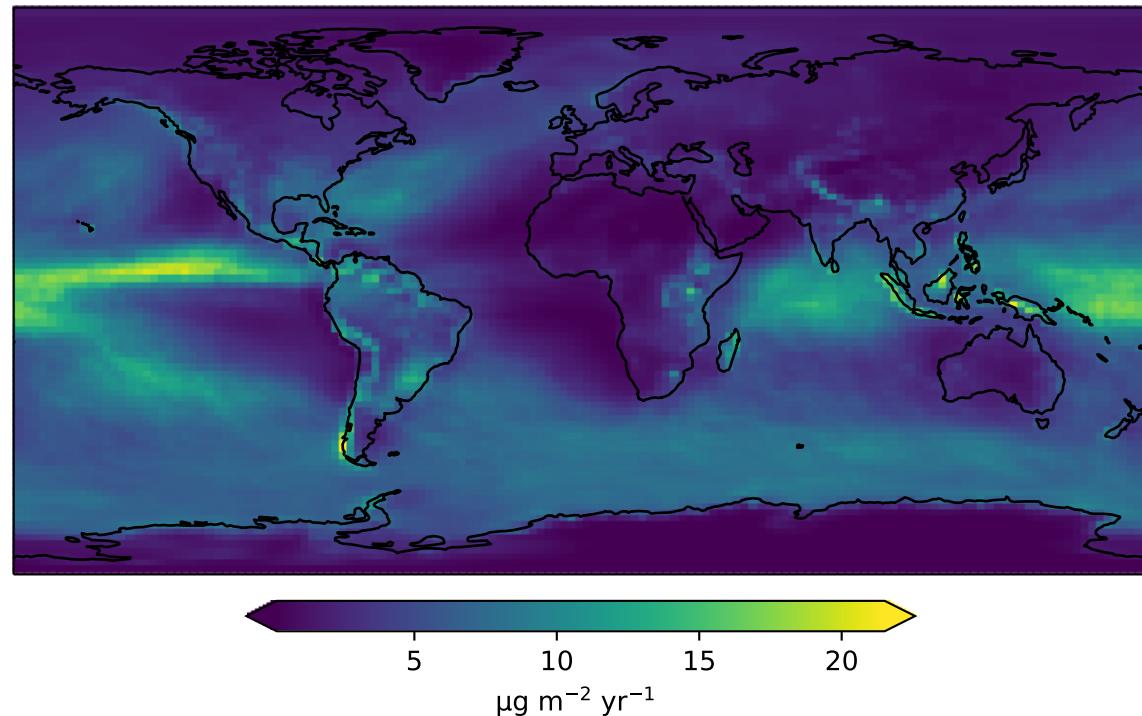
Mean Obs. = $5.9 \pm 3.1 \text{ } \mu\text{g m}^{-2} \text{ yr}^{-1}$



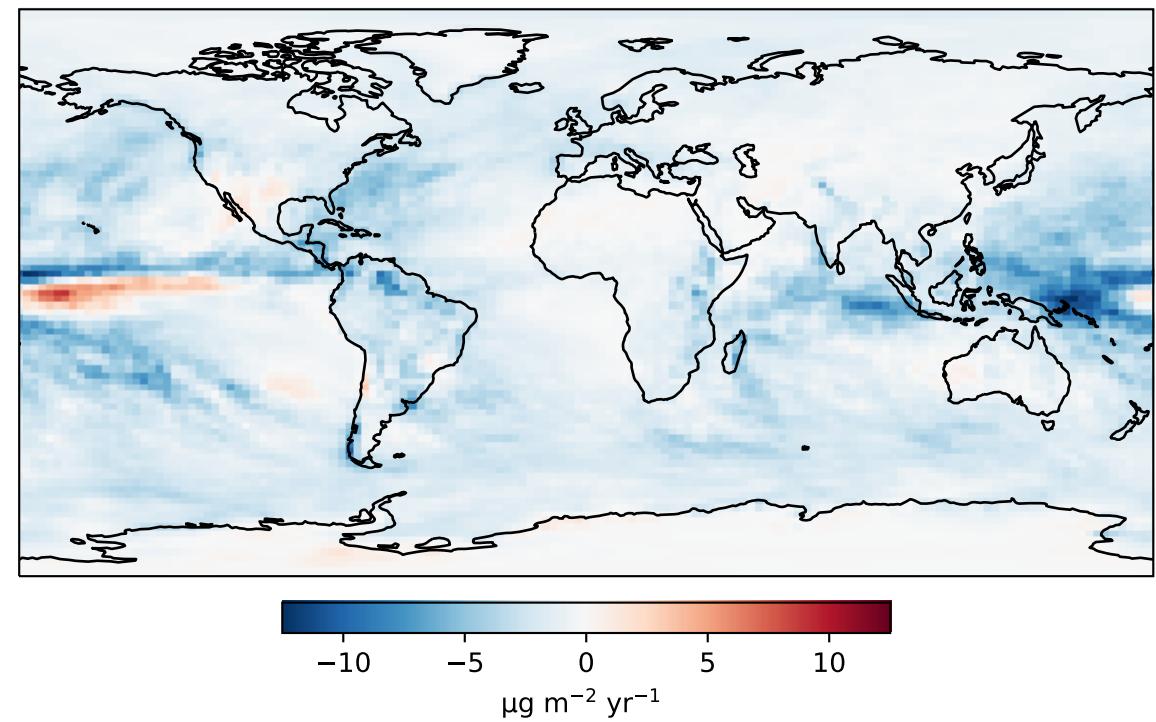
Reference Model Version: Total Wet Dep



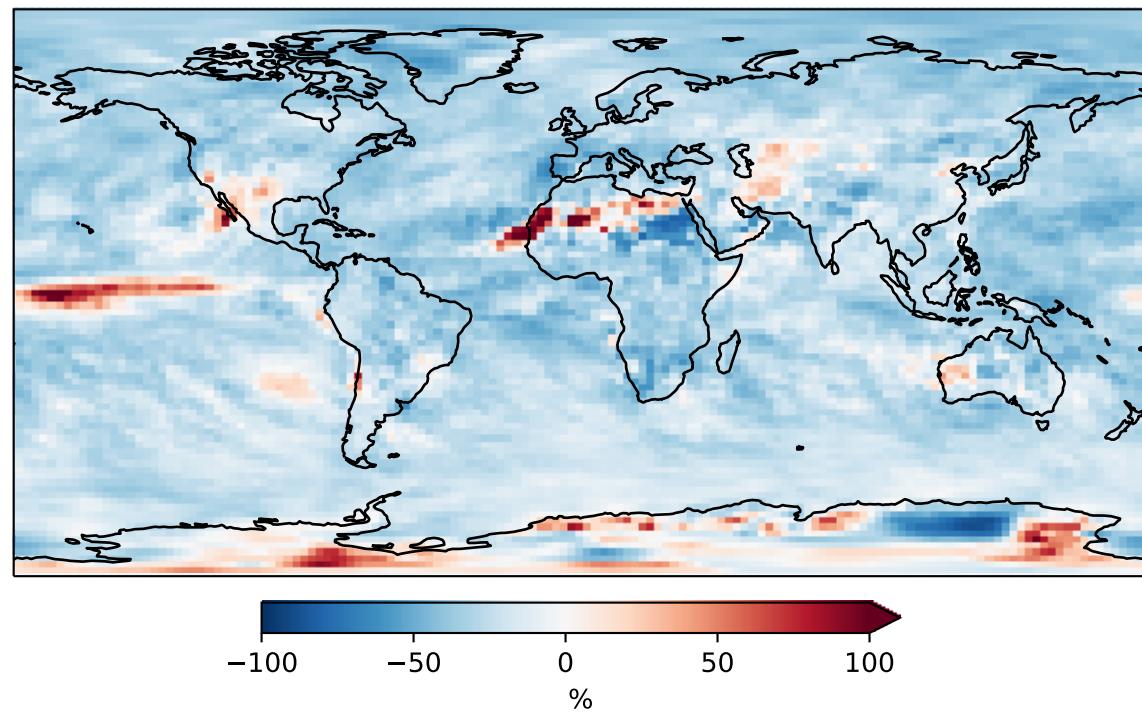
New Model Version: Total Wet Dep



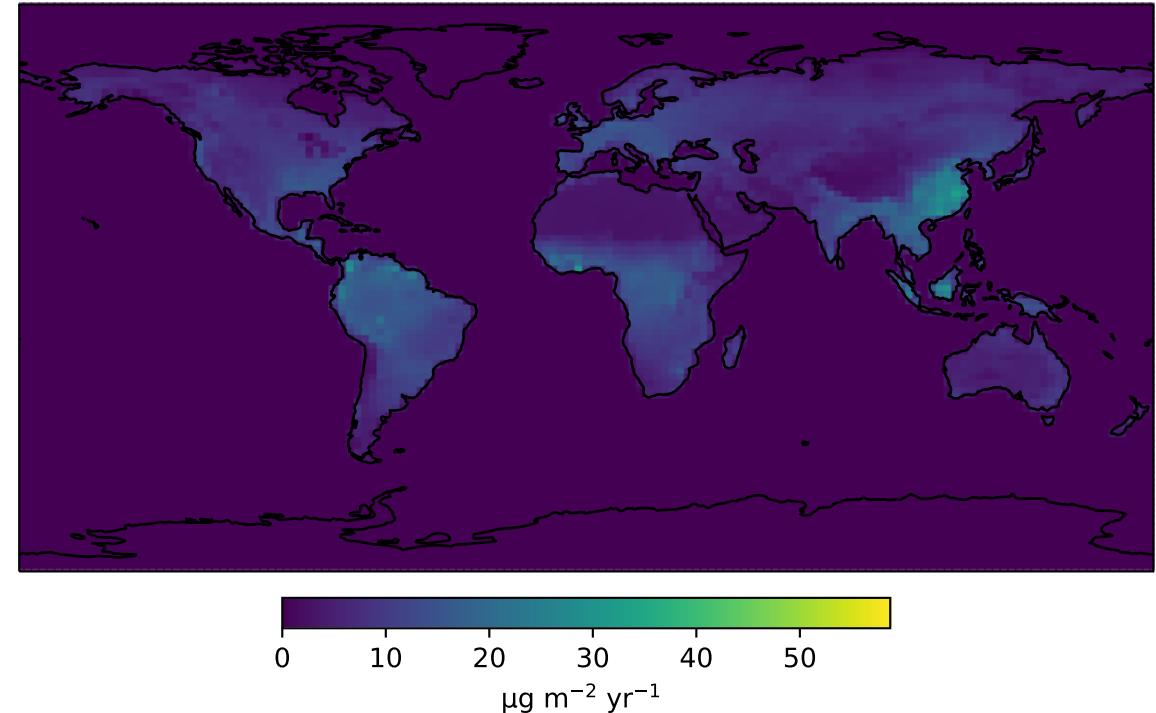
Absolute Difference



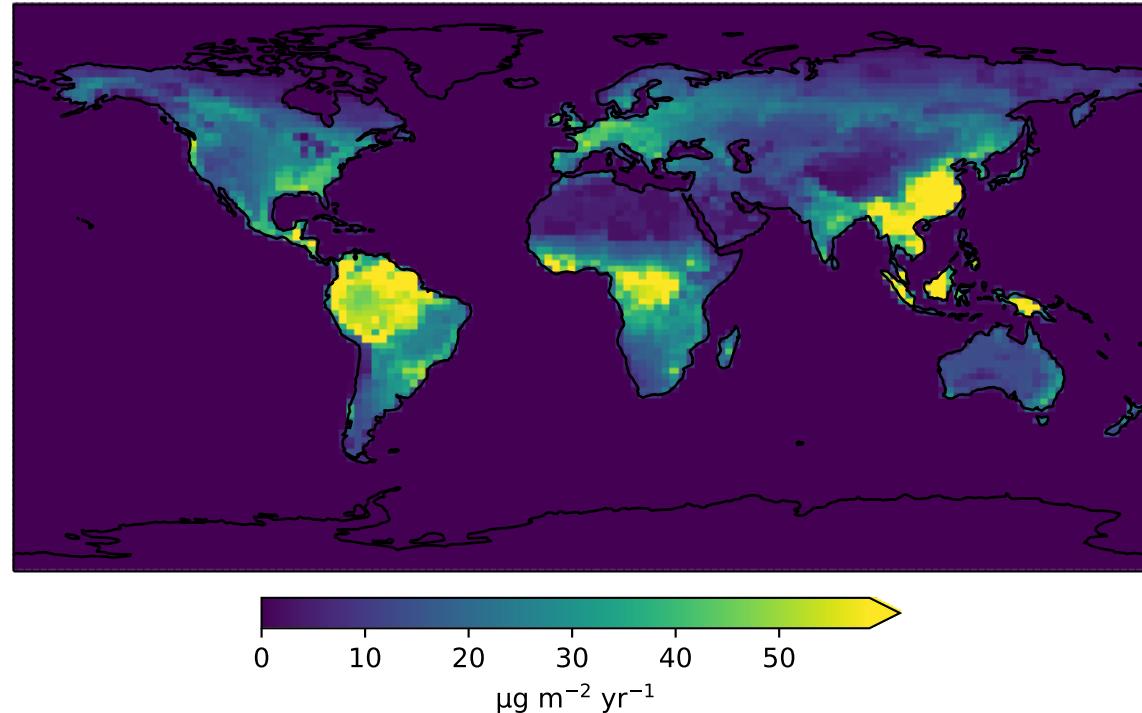
Percent Difference (%)



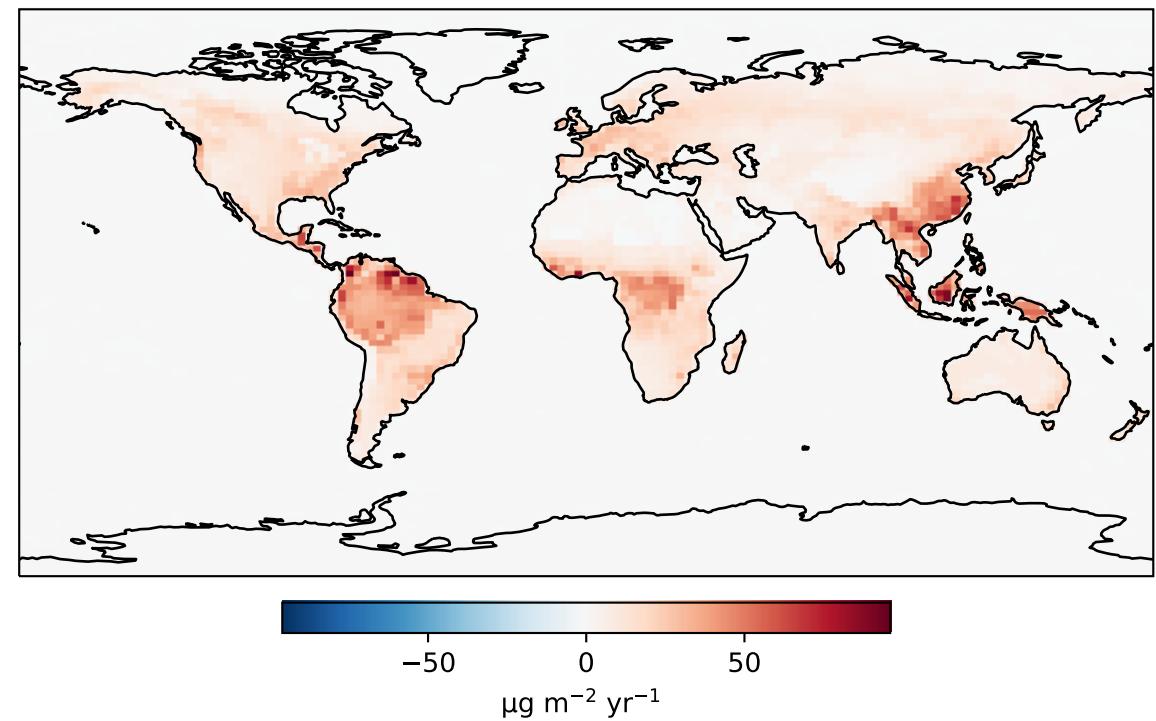
Reference Model Version: Hg(0) Dry Dep



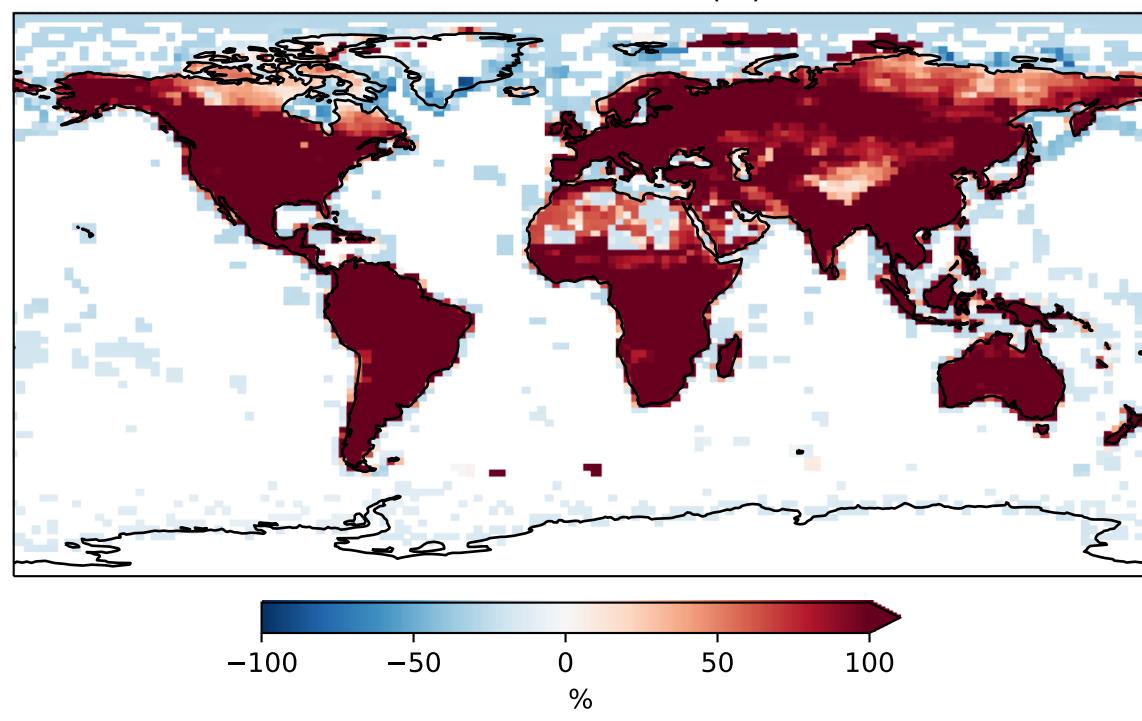
New Model Version: Hg(0) Dry Dep



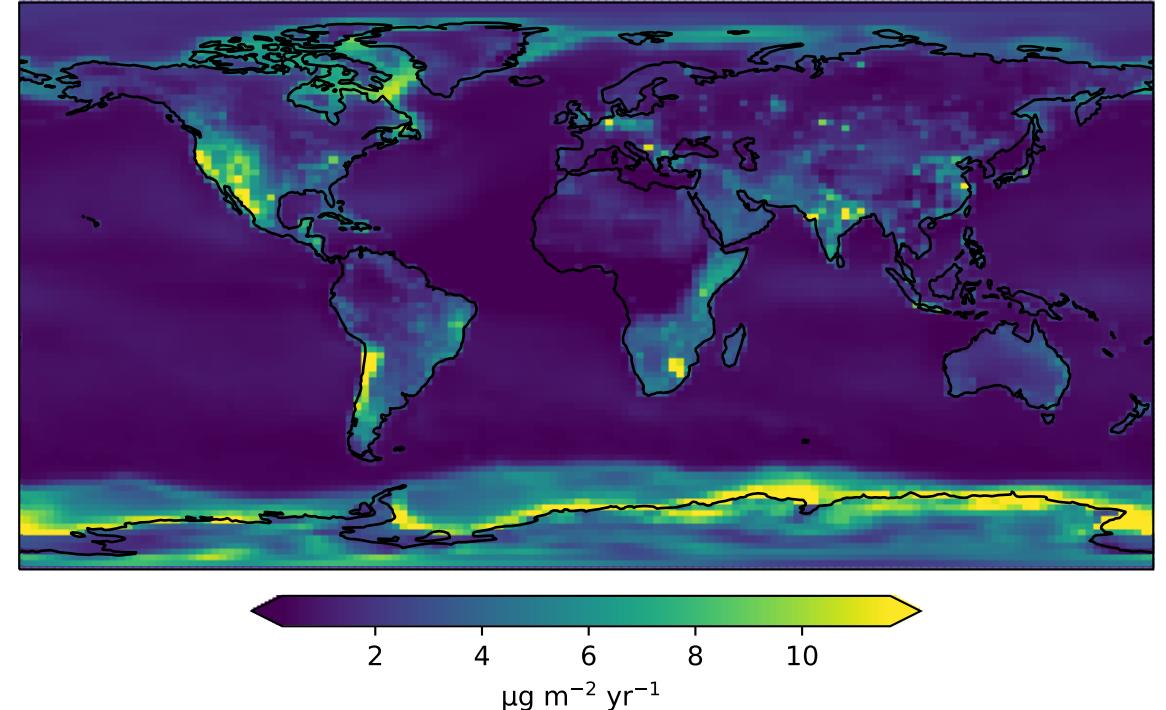
Absolute Difference



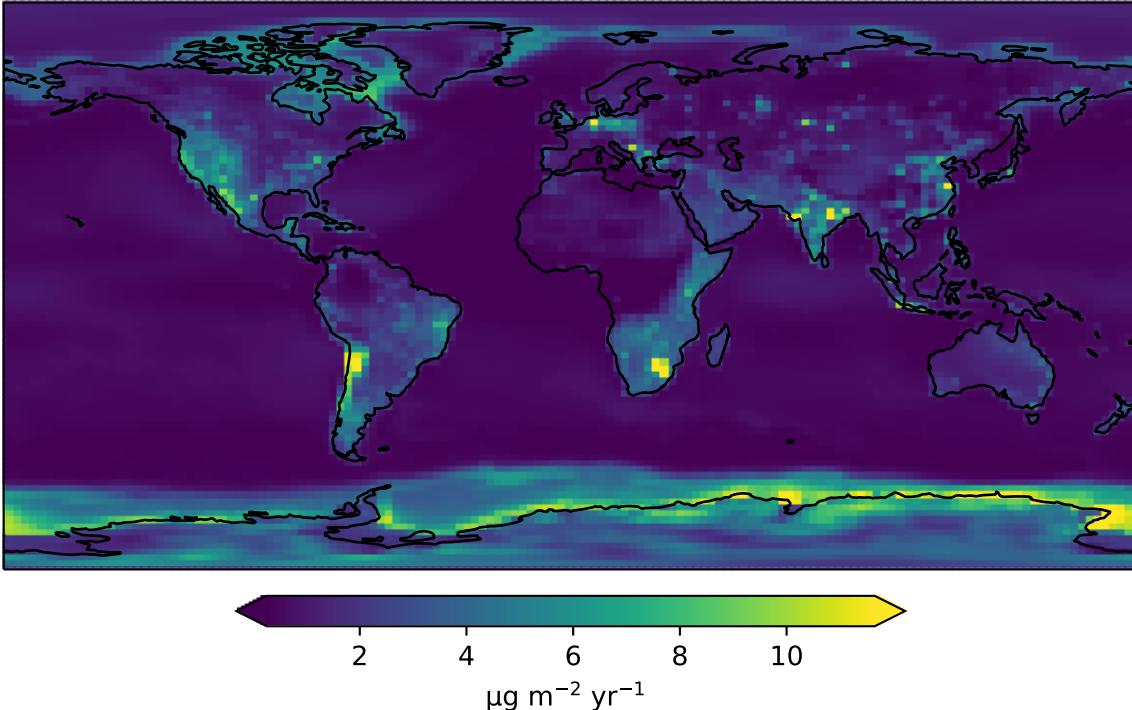
Percent Difference (%)



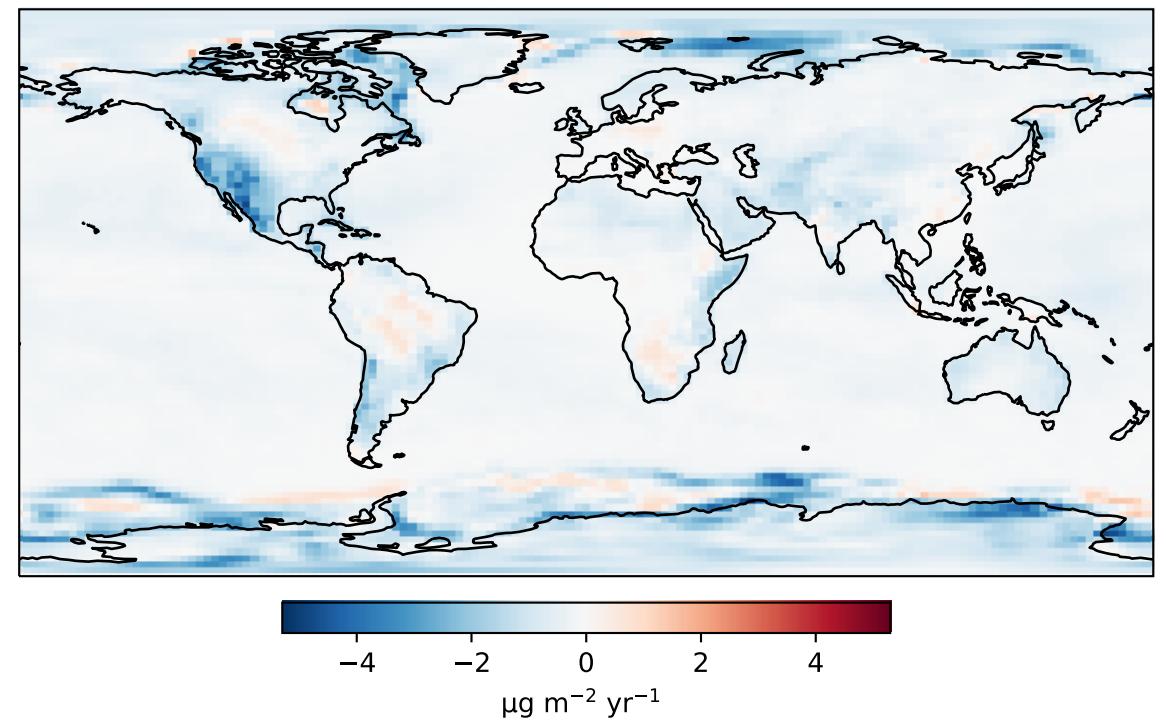
Reference Model Version: Hg(II)+Hg(P) Dry Dep



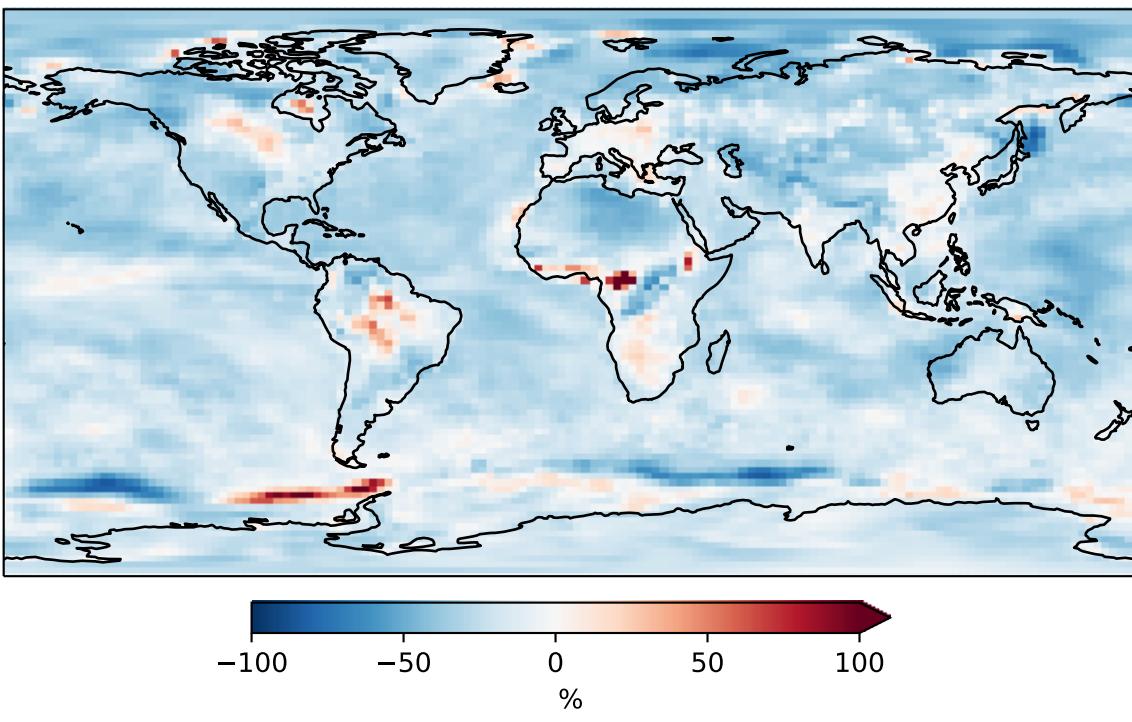
New Model Version: Hg(II)+Hg(P) Dry Dep



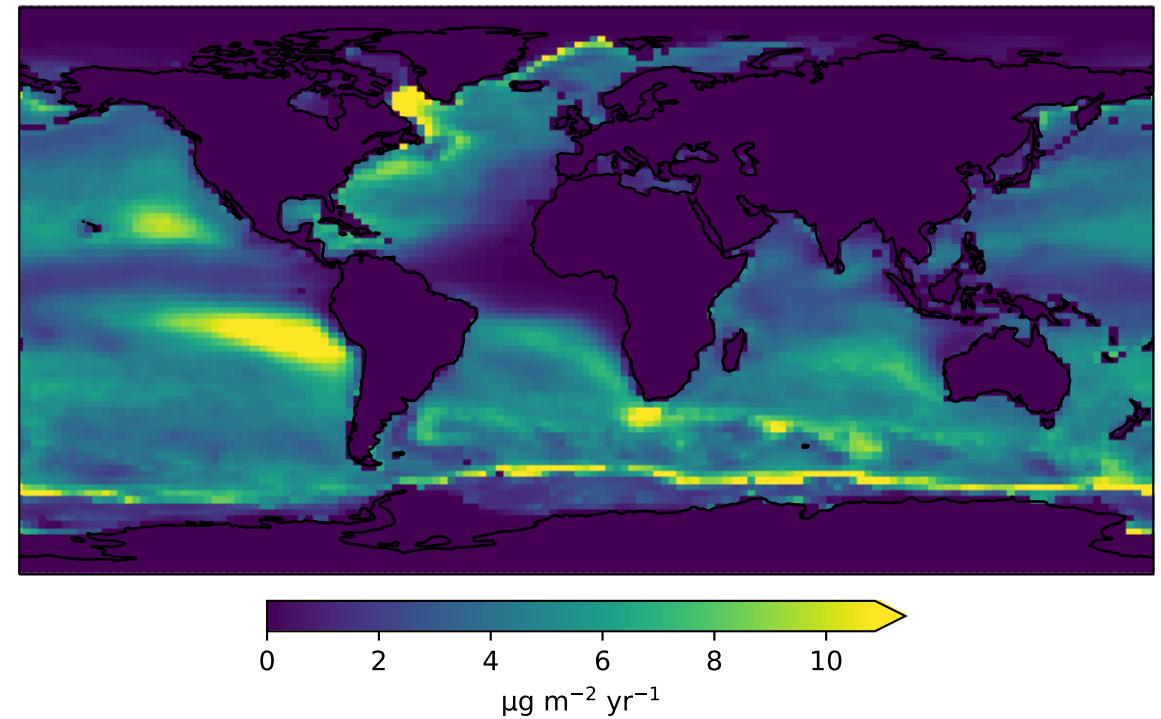
Absolute Difference



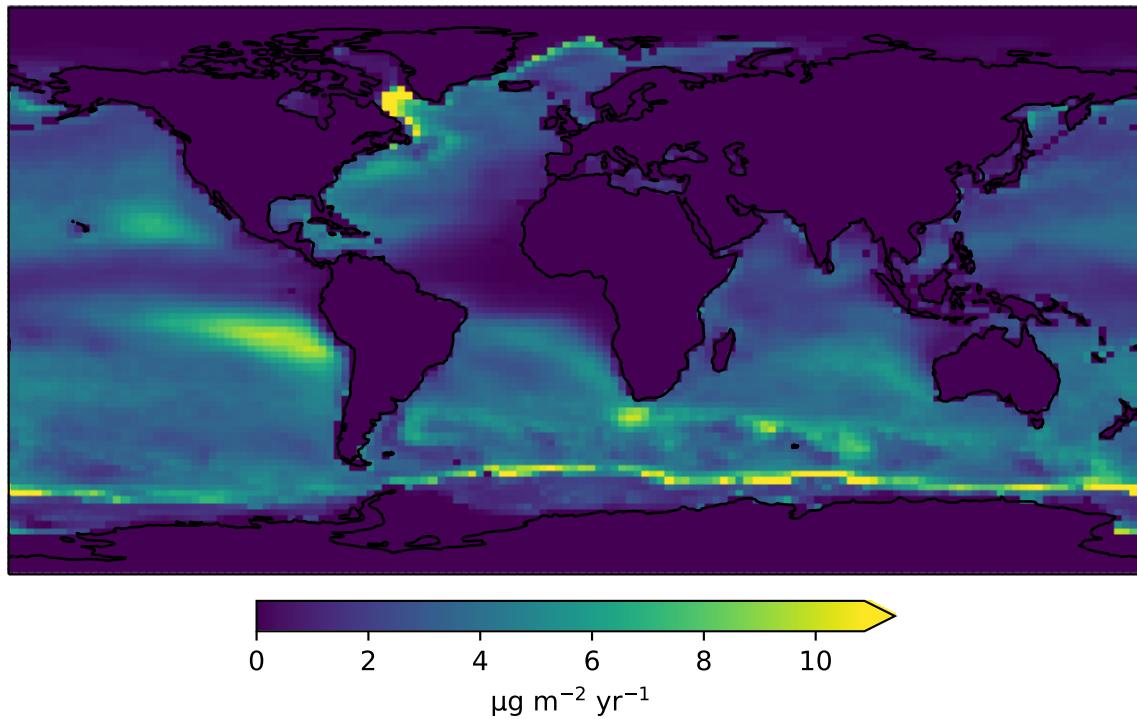
Percent Difference (%)



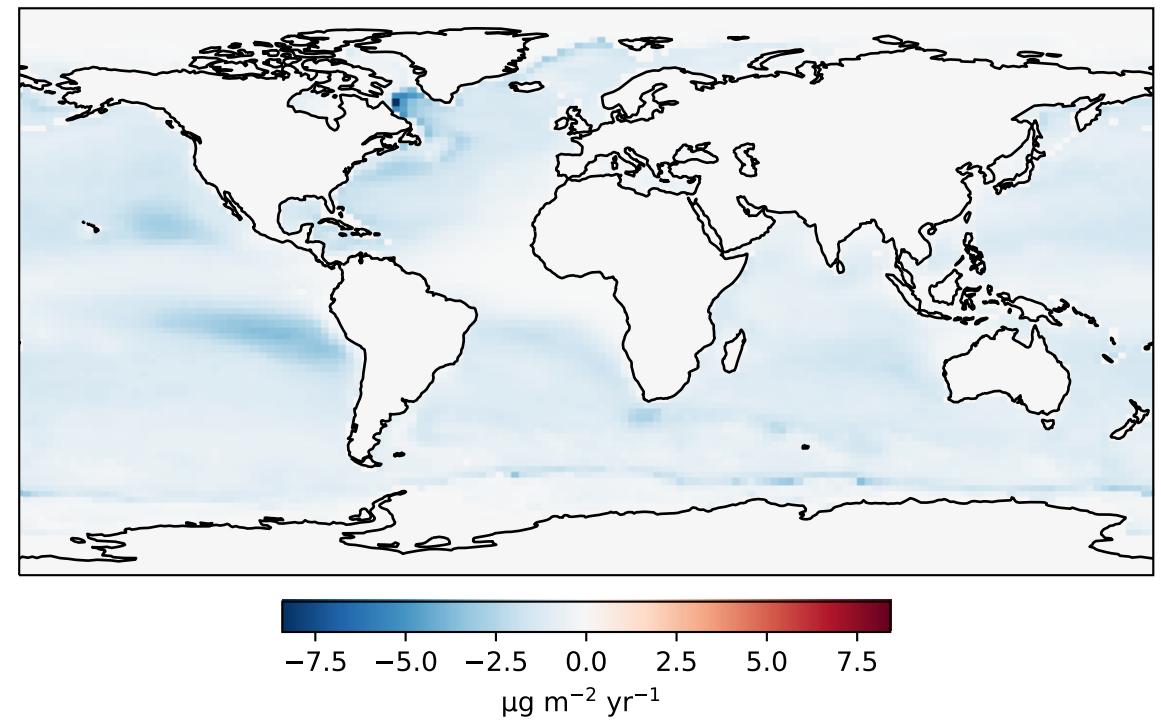
Reference Model Version: Sea Salt Uptake



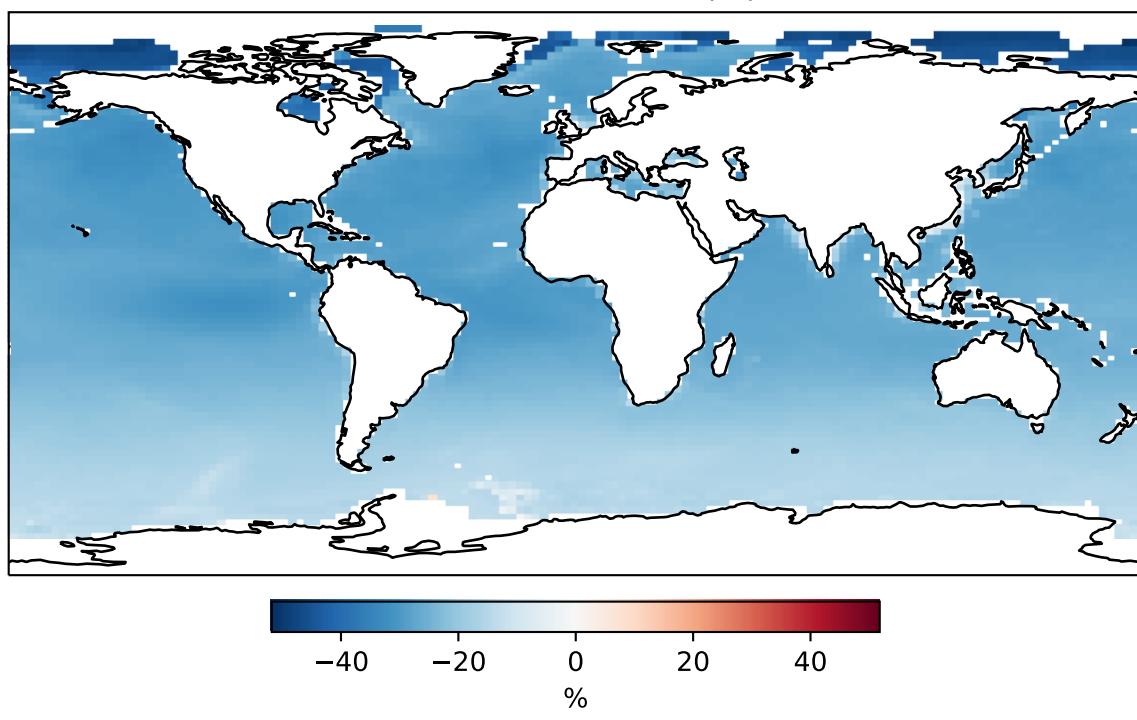
New Model Version: Sea Salt Uptake

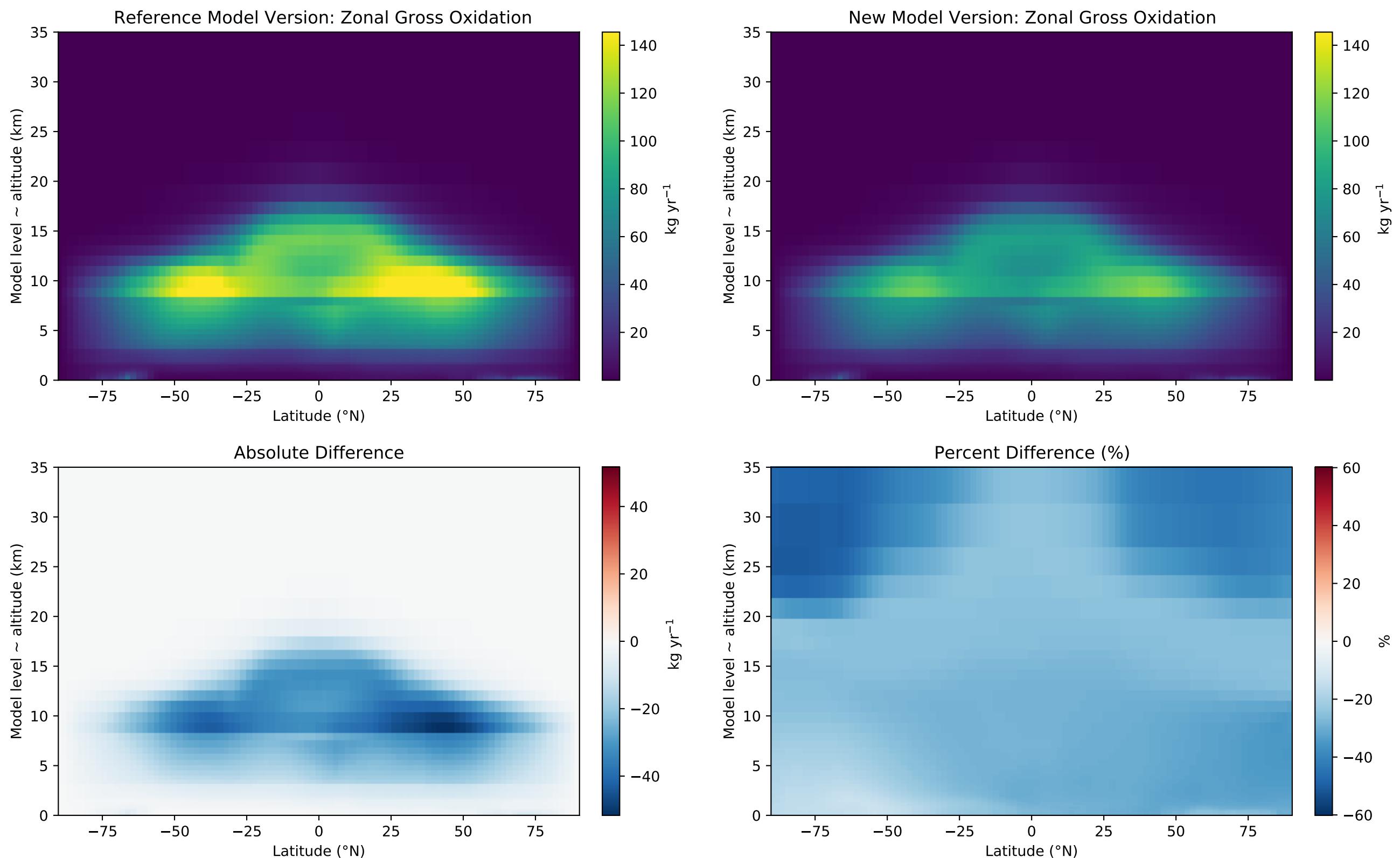


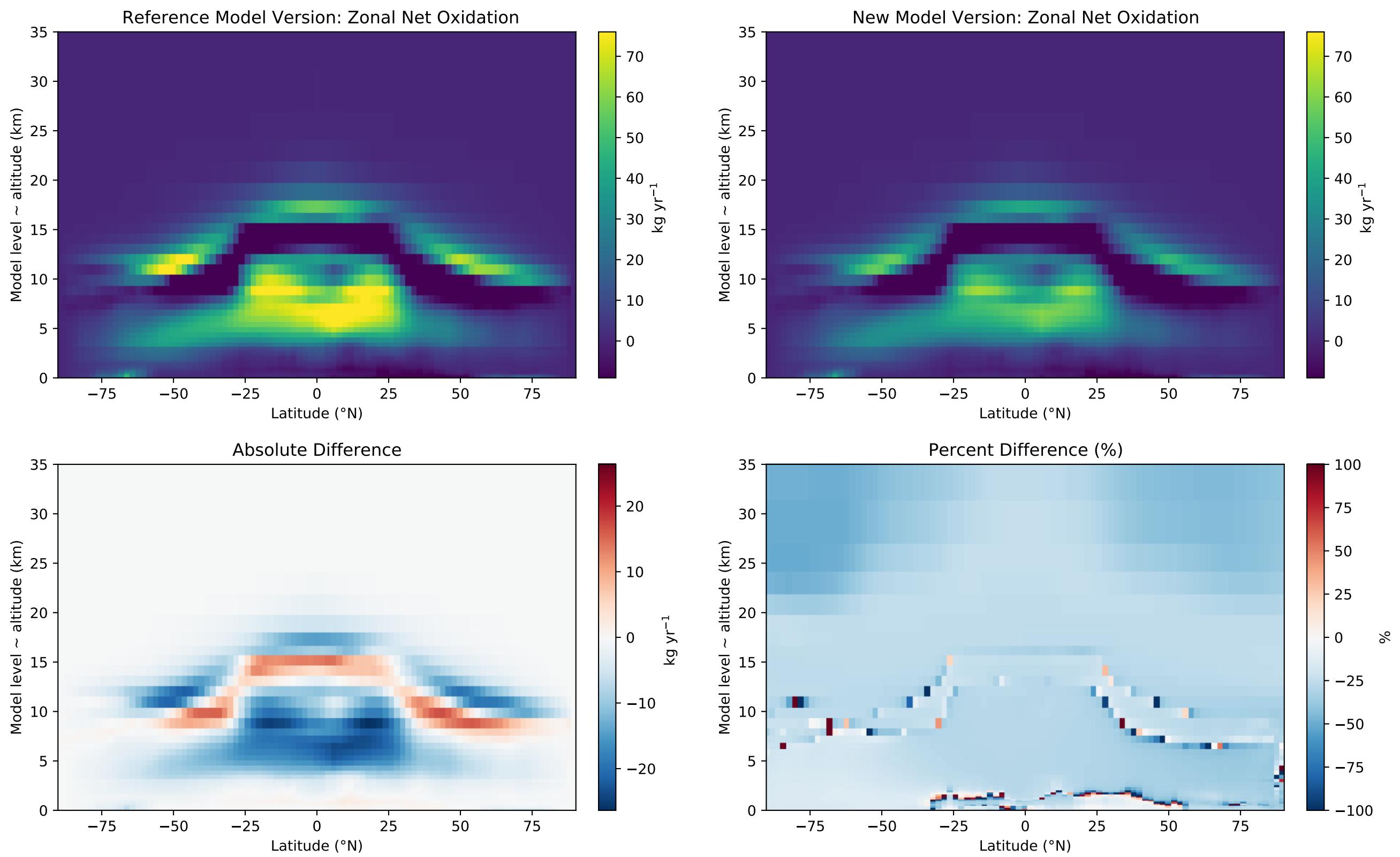
Absolute Difference

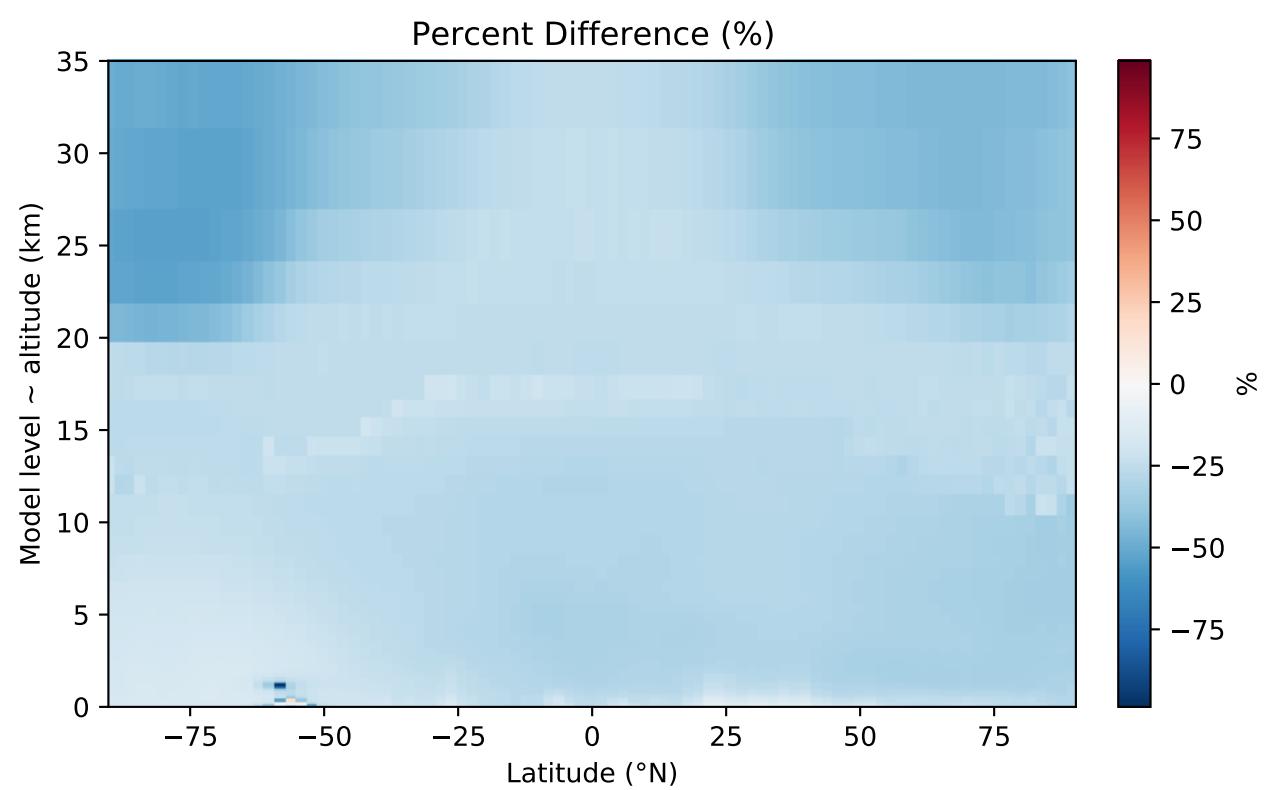
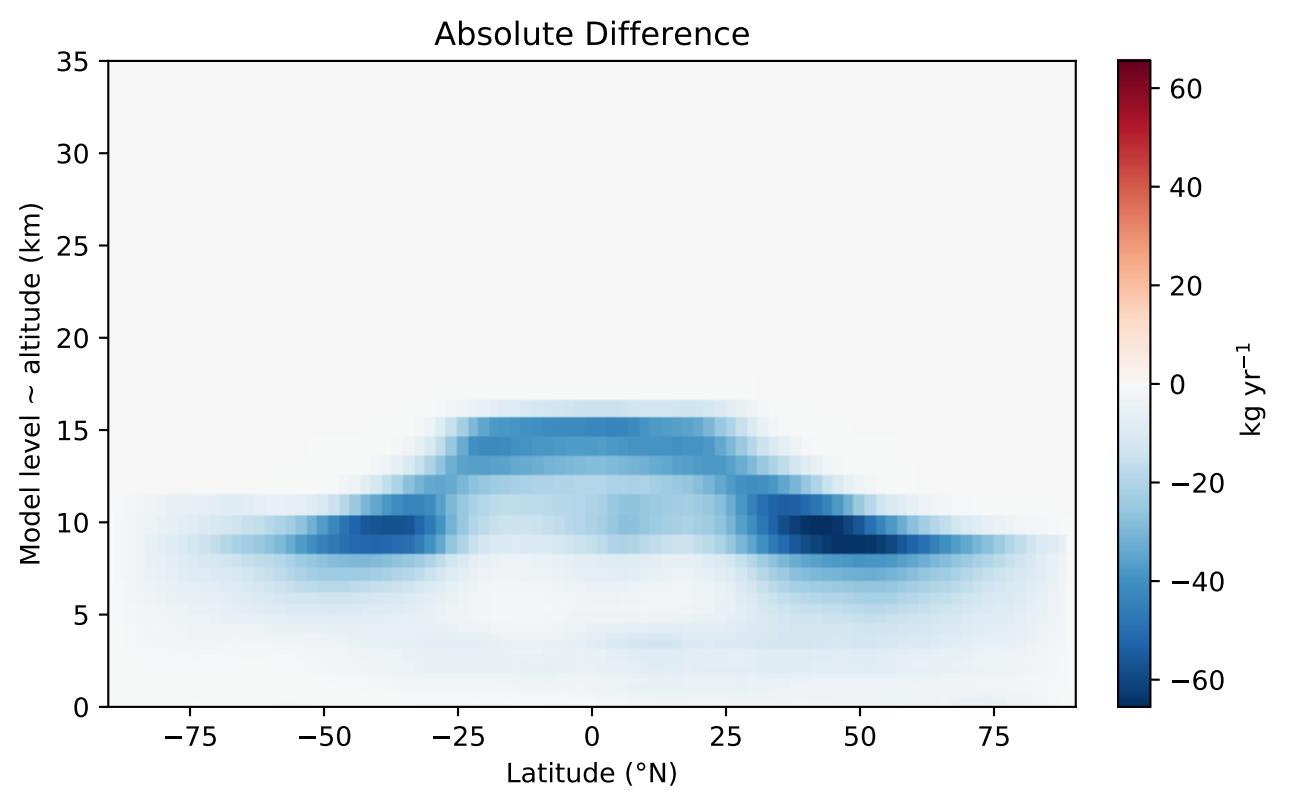
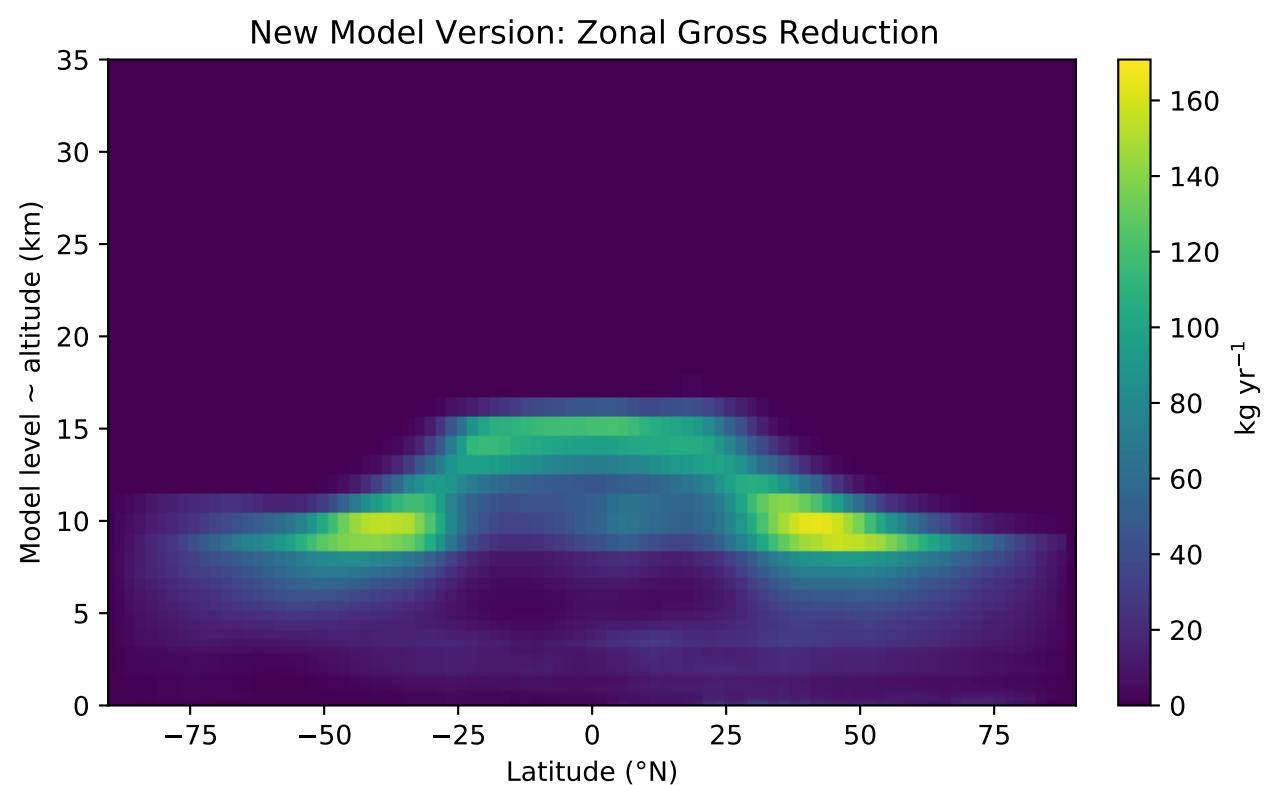
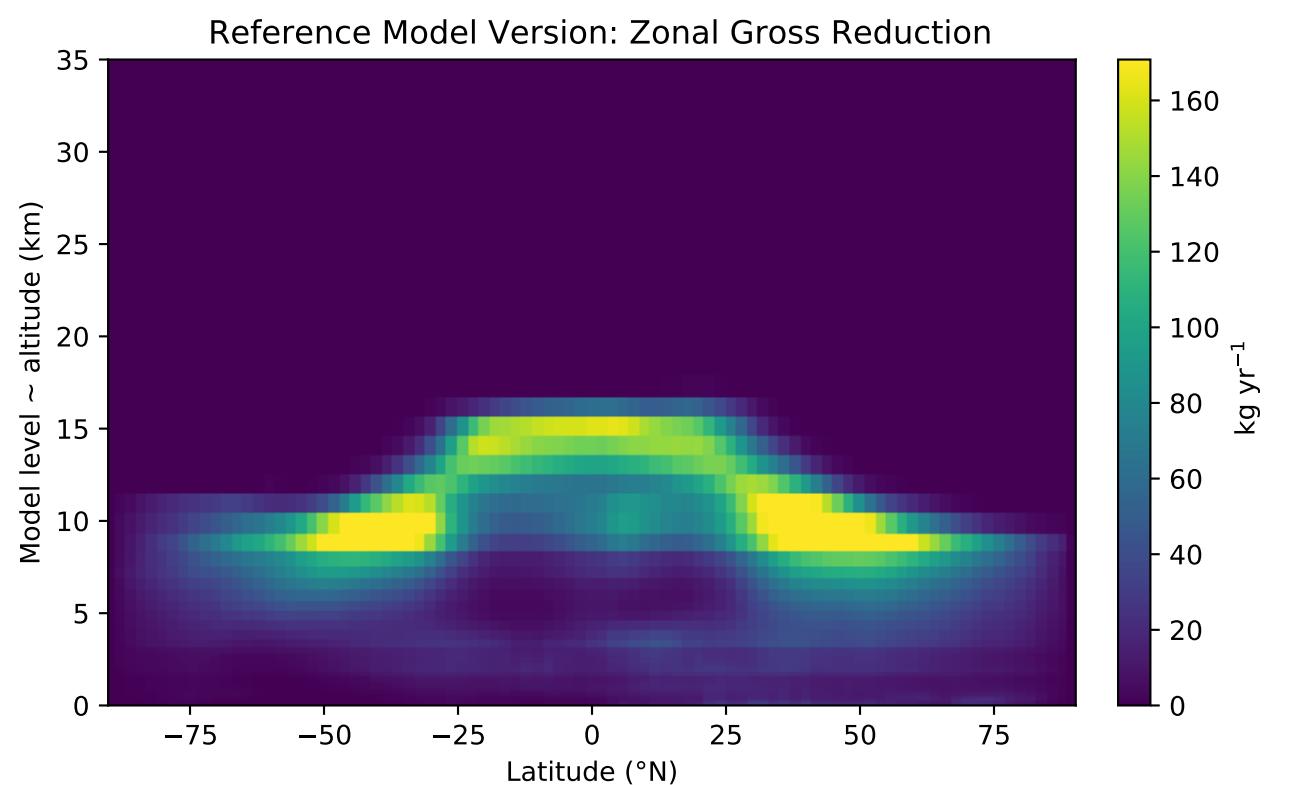


Percent Difference (%)

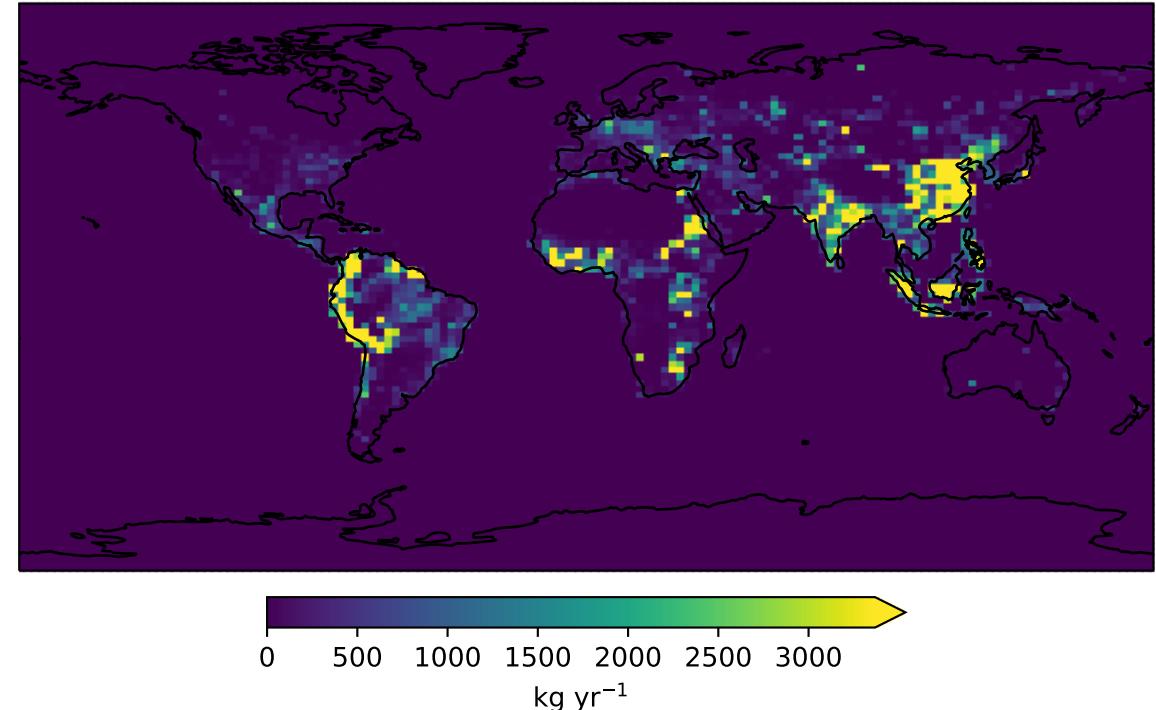




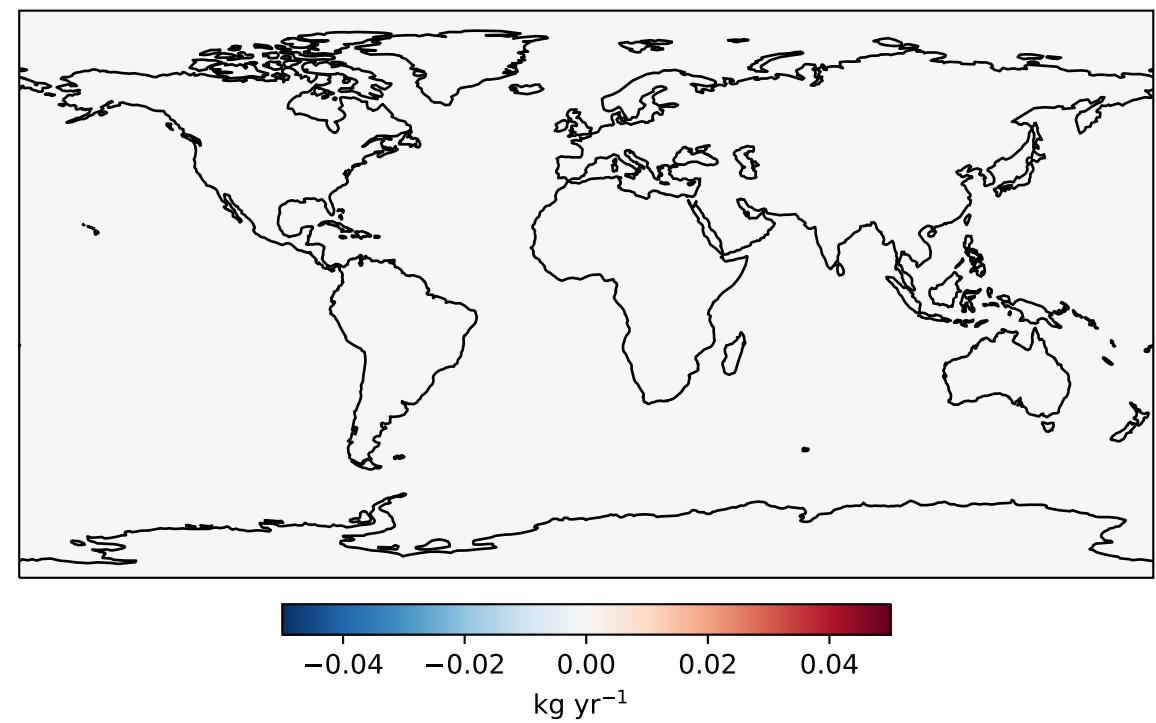




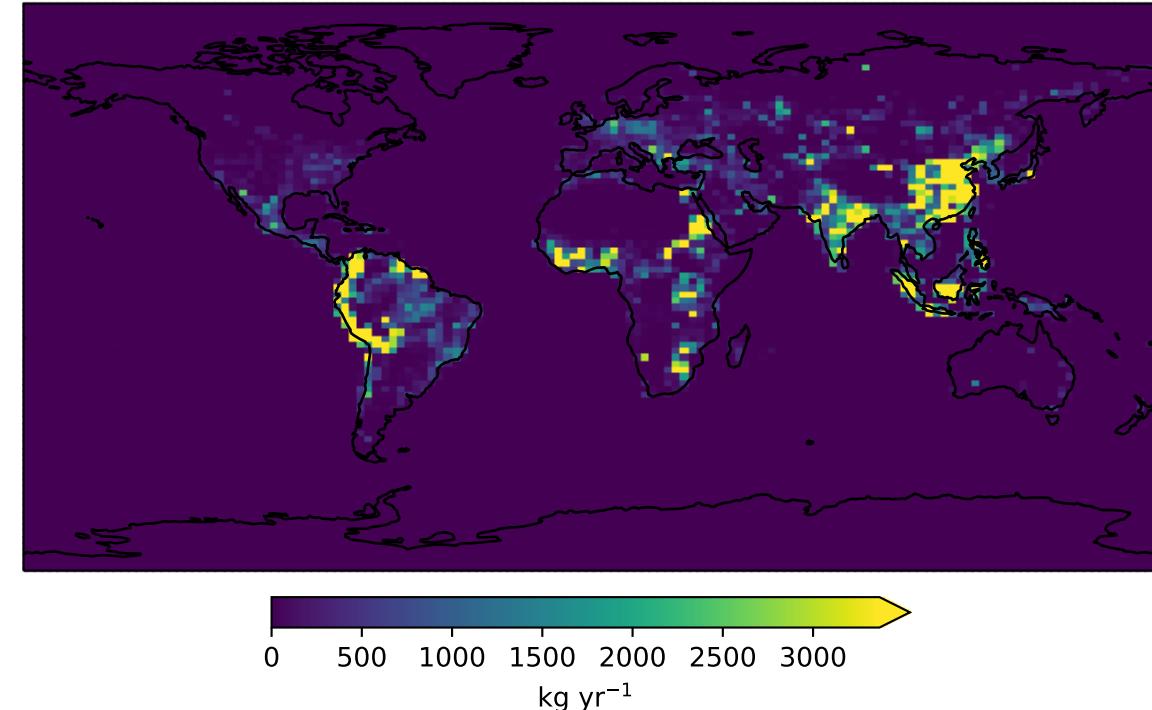
Reference Model Version: Anthro Emissions - Hg(0)



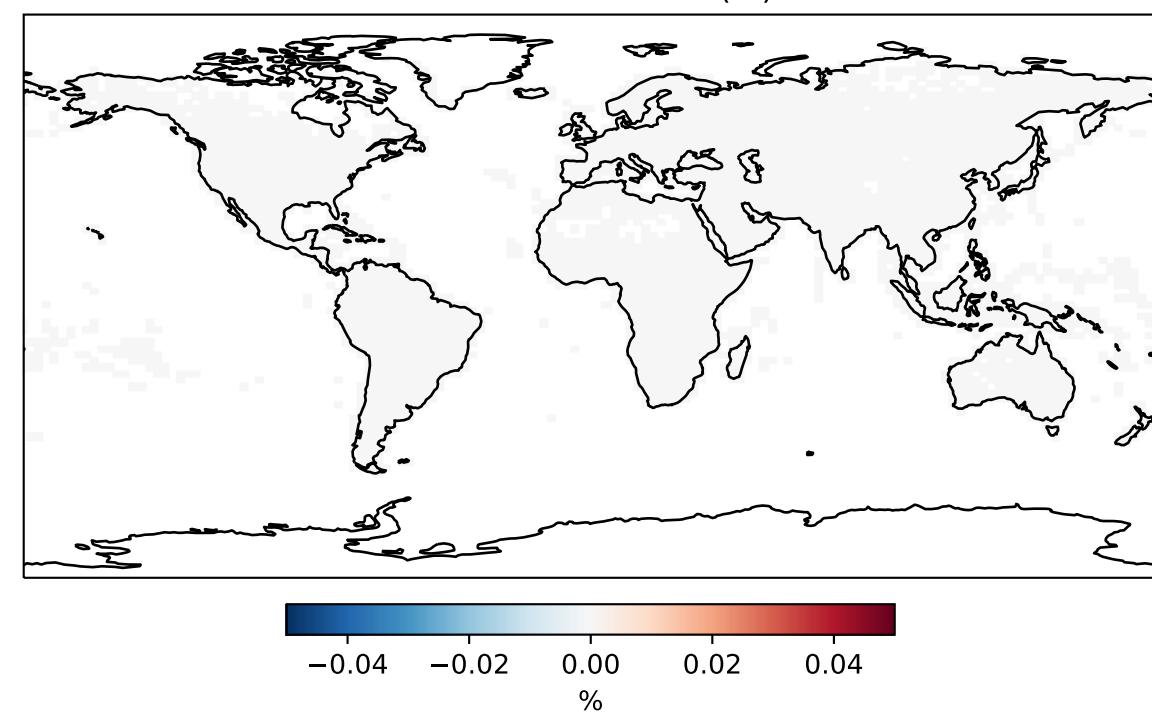
Absolute Difference



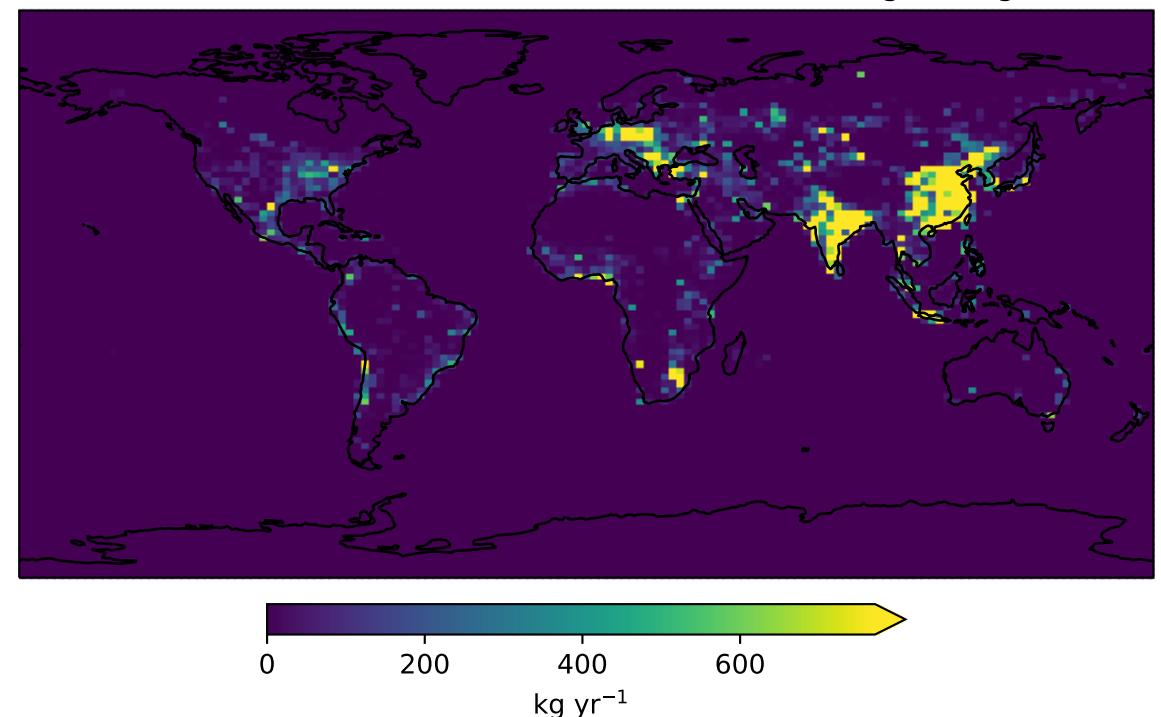
New Model Version: Anthro Emissions - Hg(0)



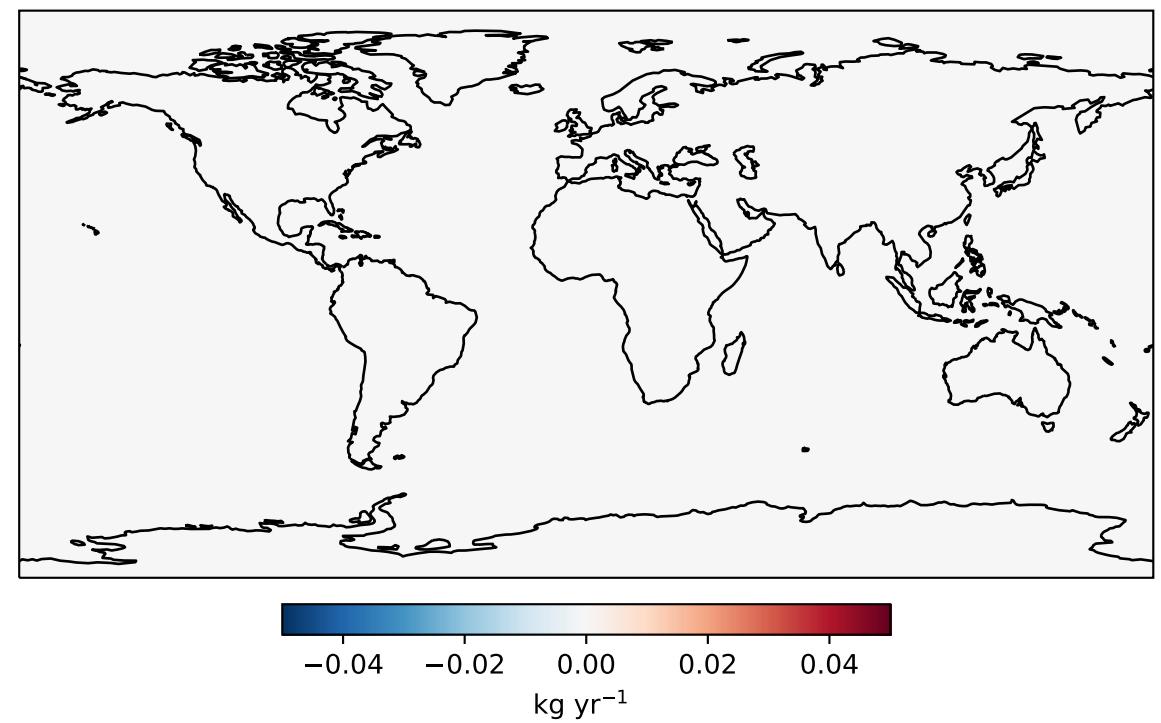
Percent Difference (%)



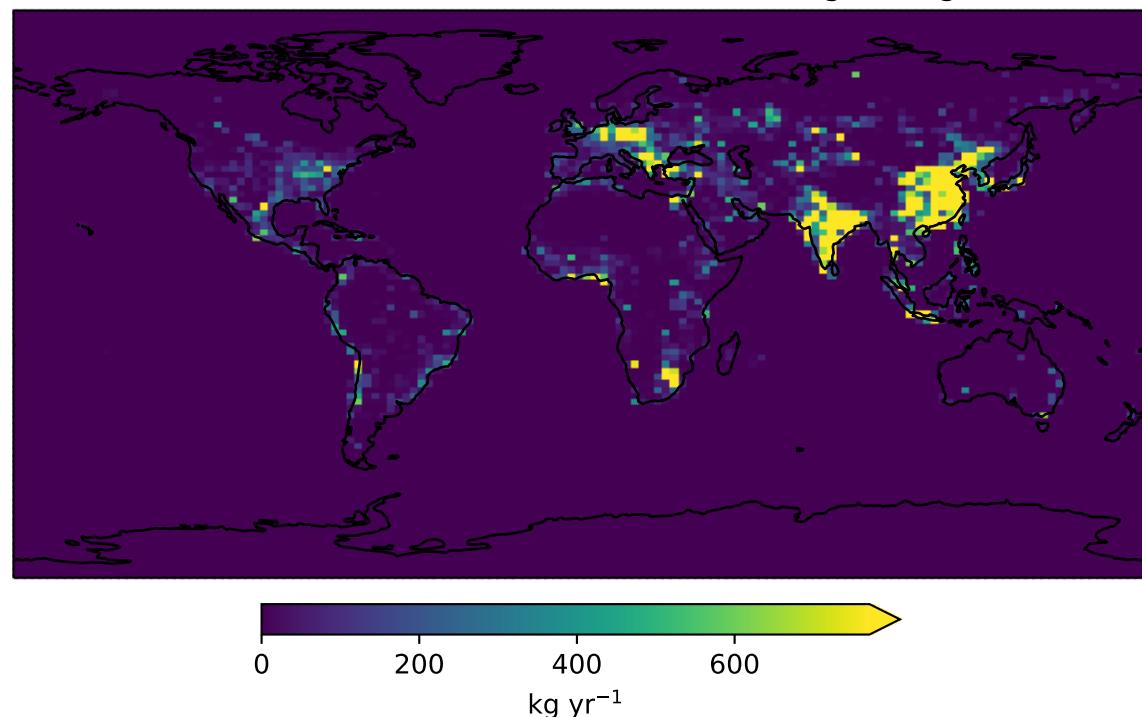
Reference Model Version: Anthro Emissions - Hg(II)+Hg(P)



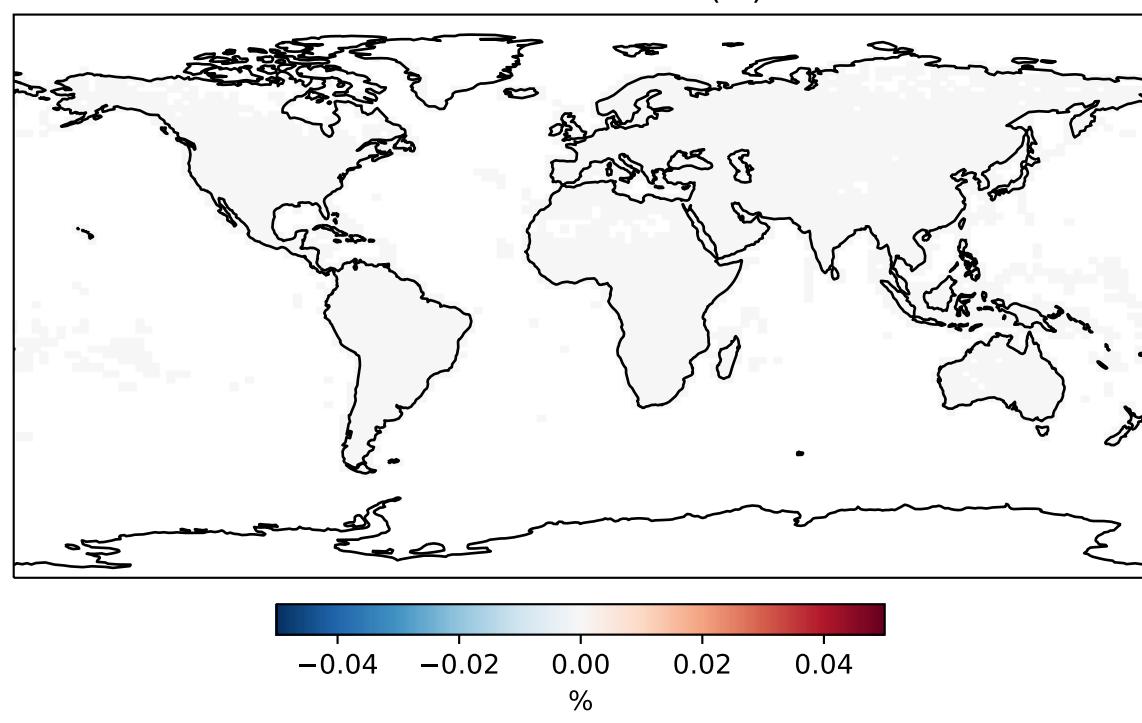
Absolute Difference



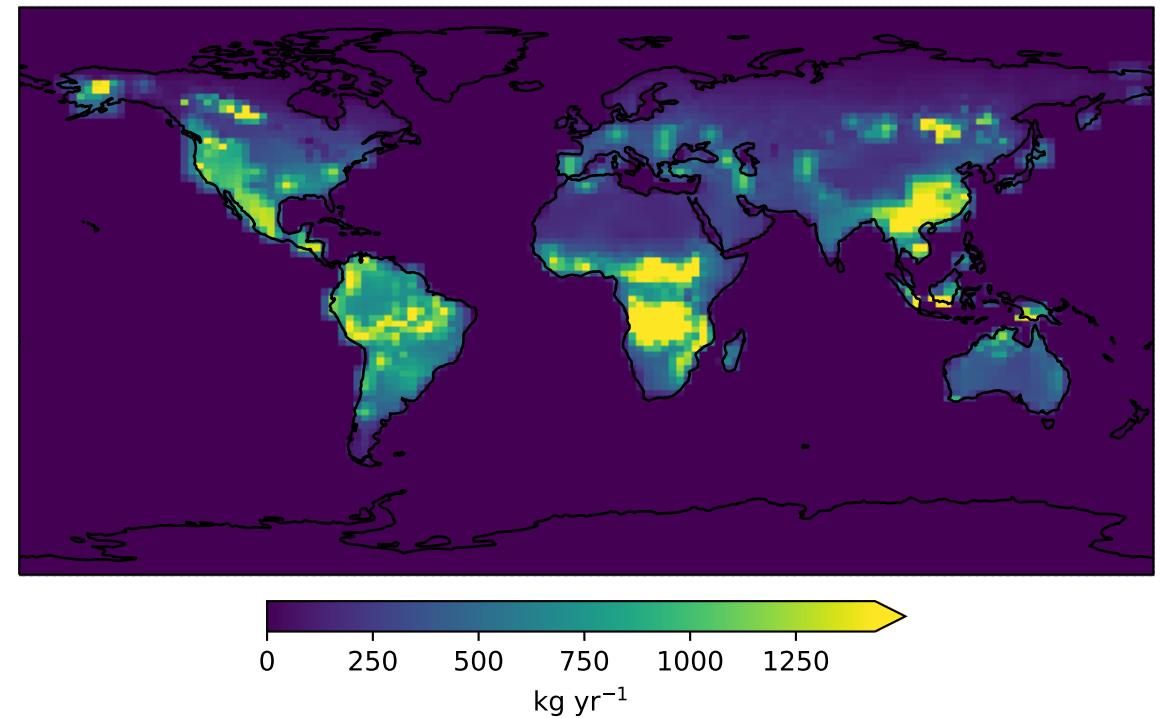
New Model Version: Anthro Emissions - Hg(II)+Hg(P)



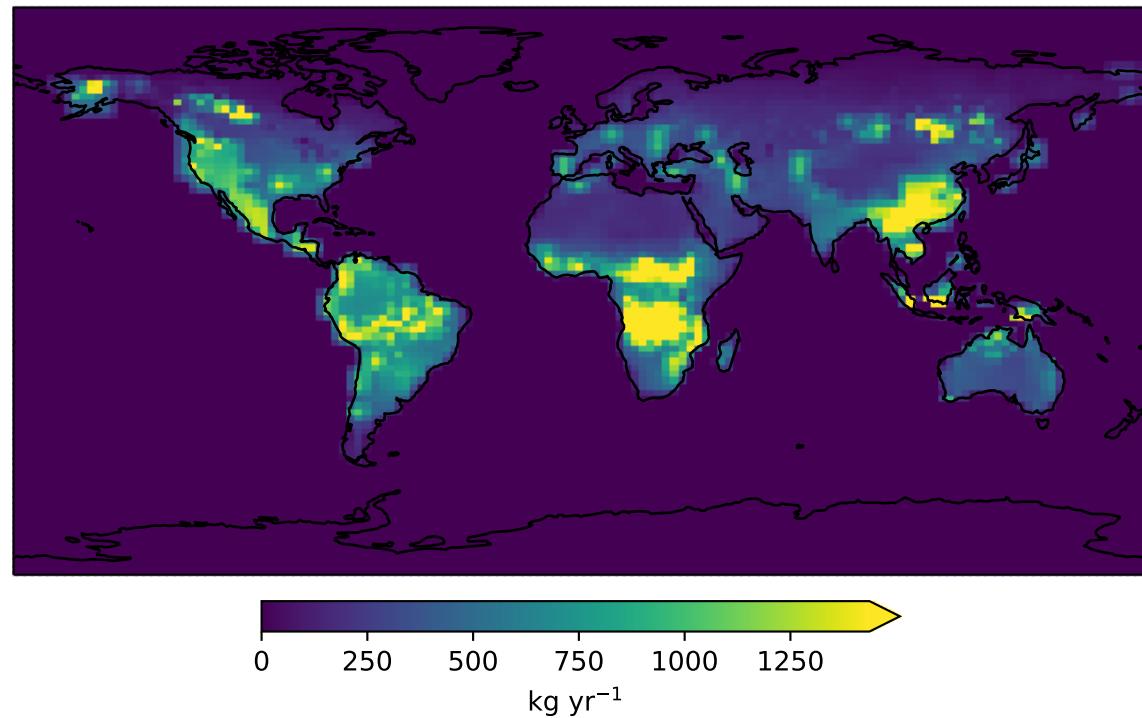
Percent Difference (%)



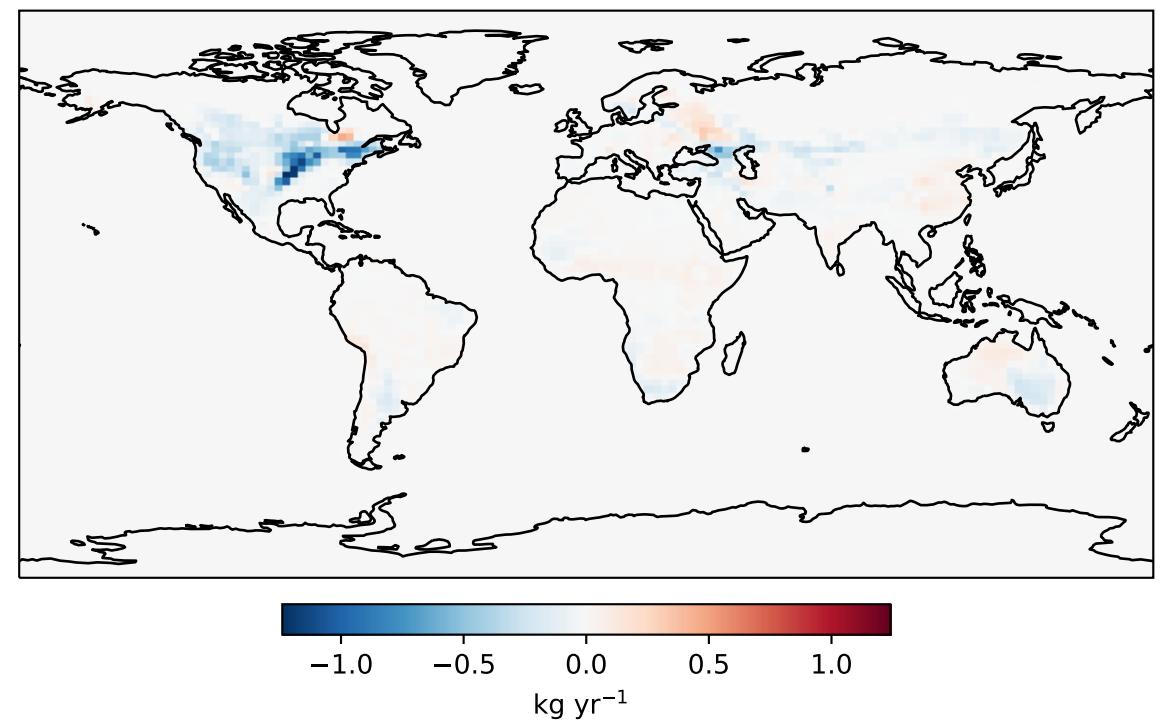
Reference Model Version: Direct Terrestrial - Geo, BB, & Soil



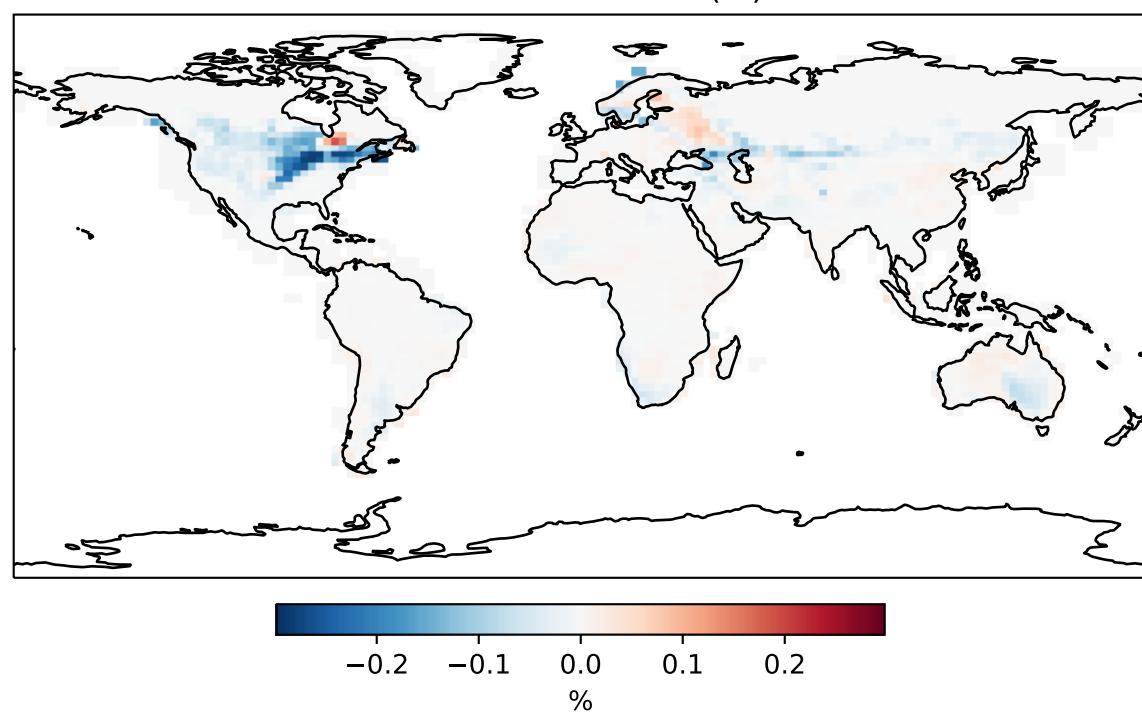
New Model Version: Direct Terrestrial - Geo, BB, & Soil



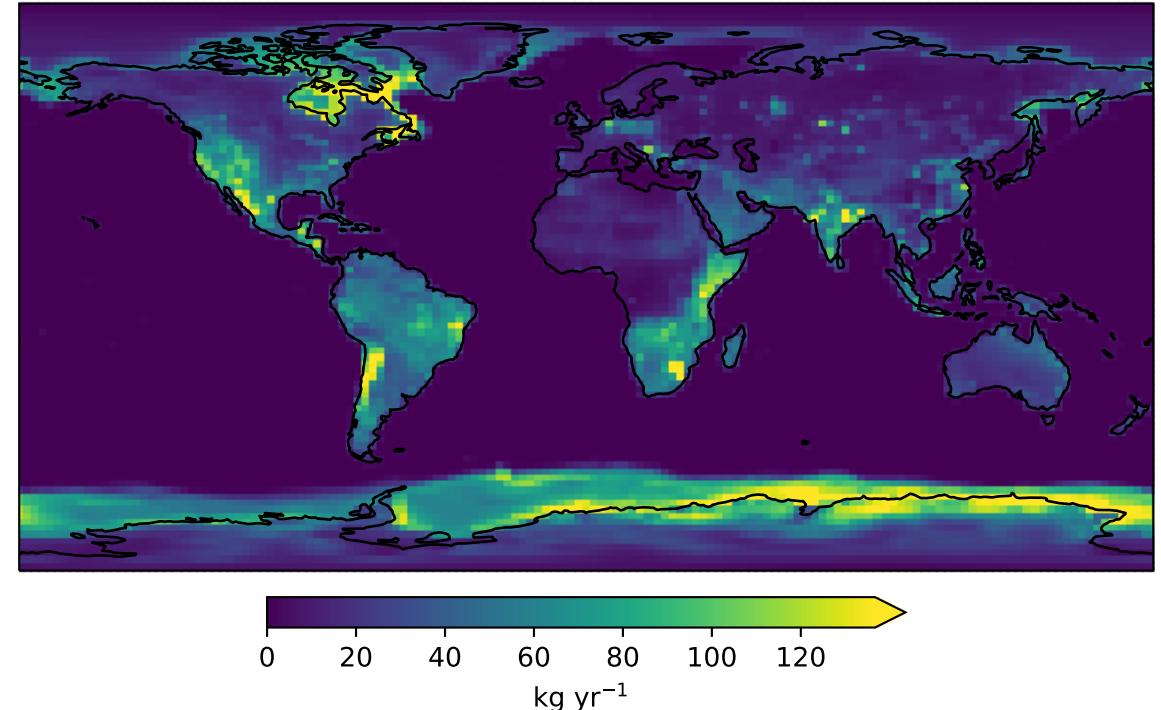
Absolute Difference



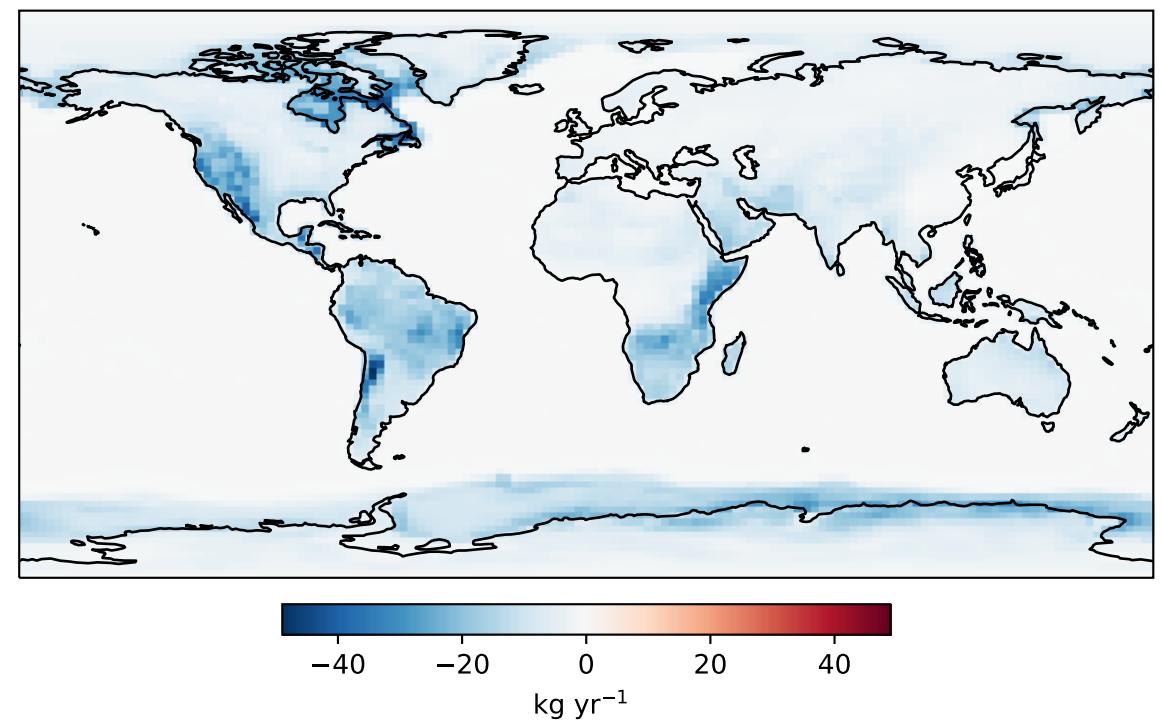
Percent Difference (%)



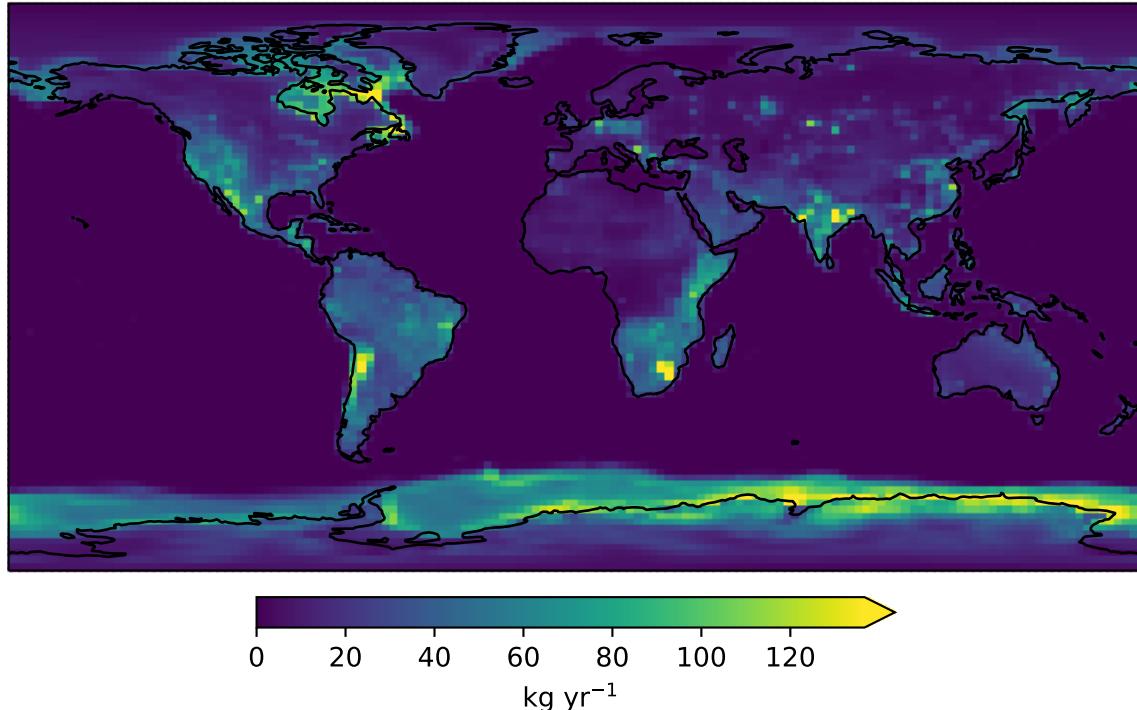
Reference Model Version: Prompt Re-emission - Land & Snow



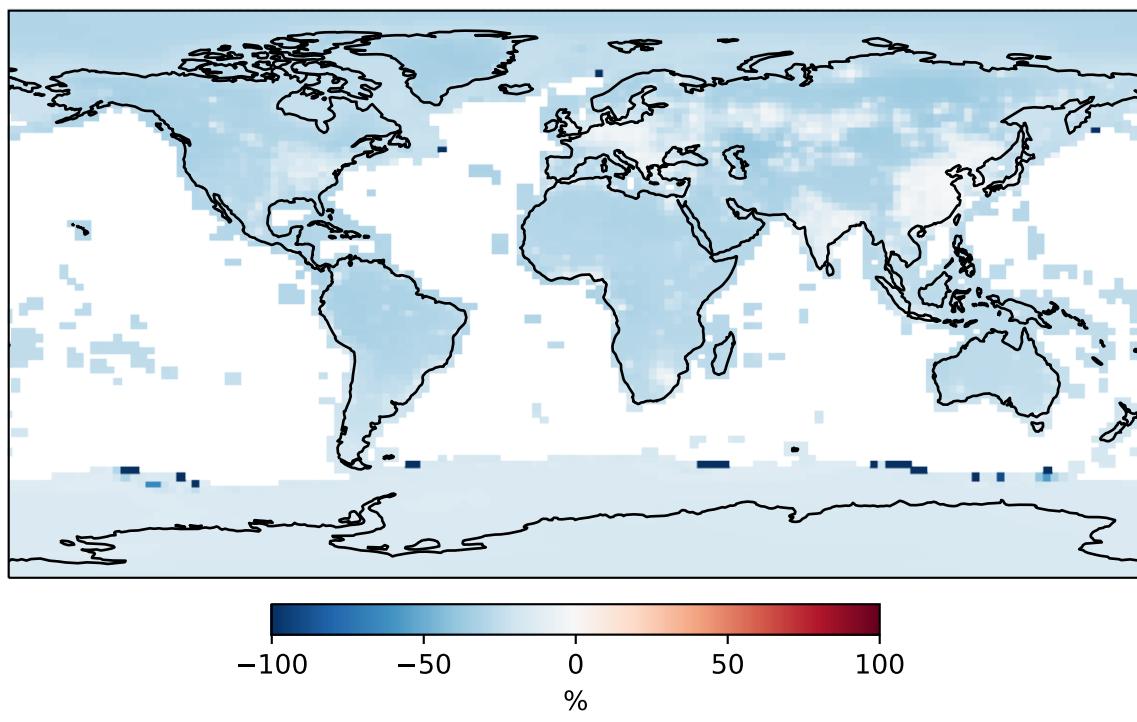
Absolute Difference



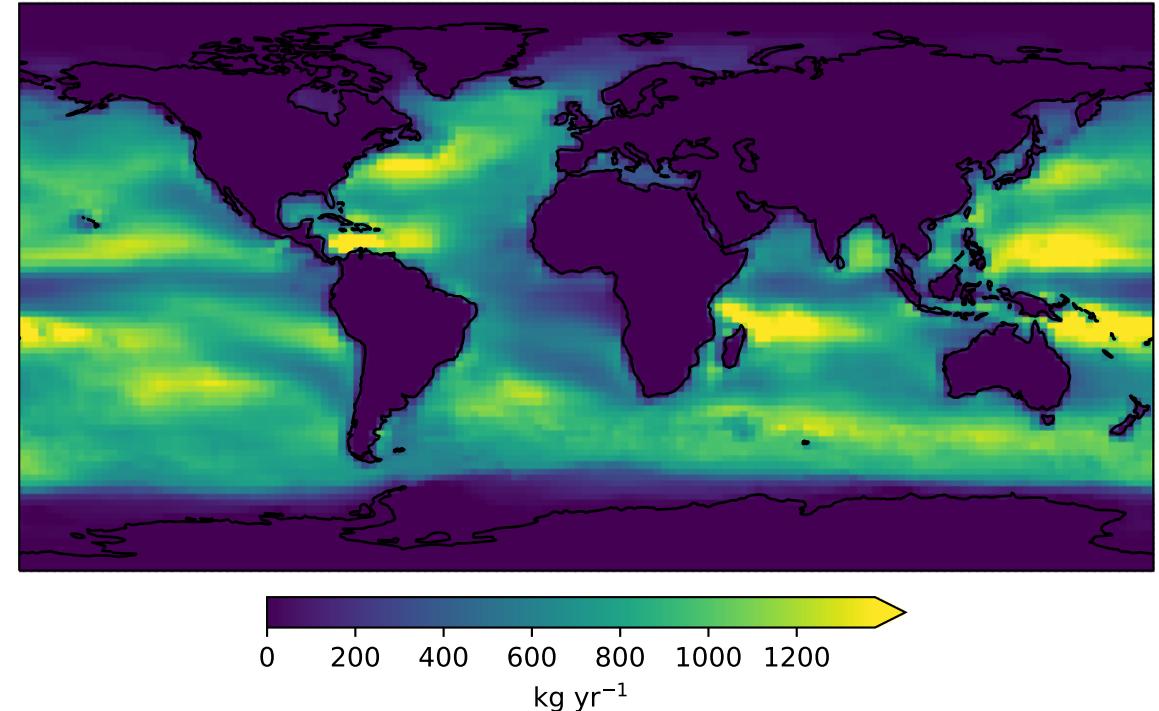
New Model Version: Prompt Re-emission - Land & Snow



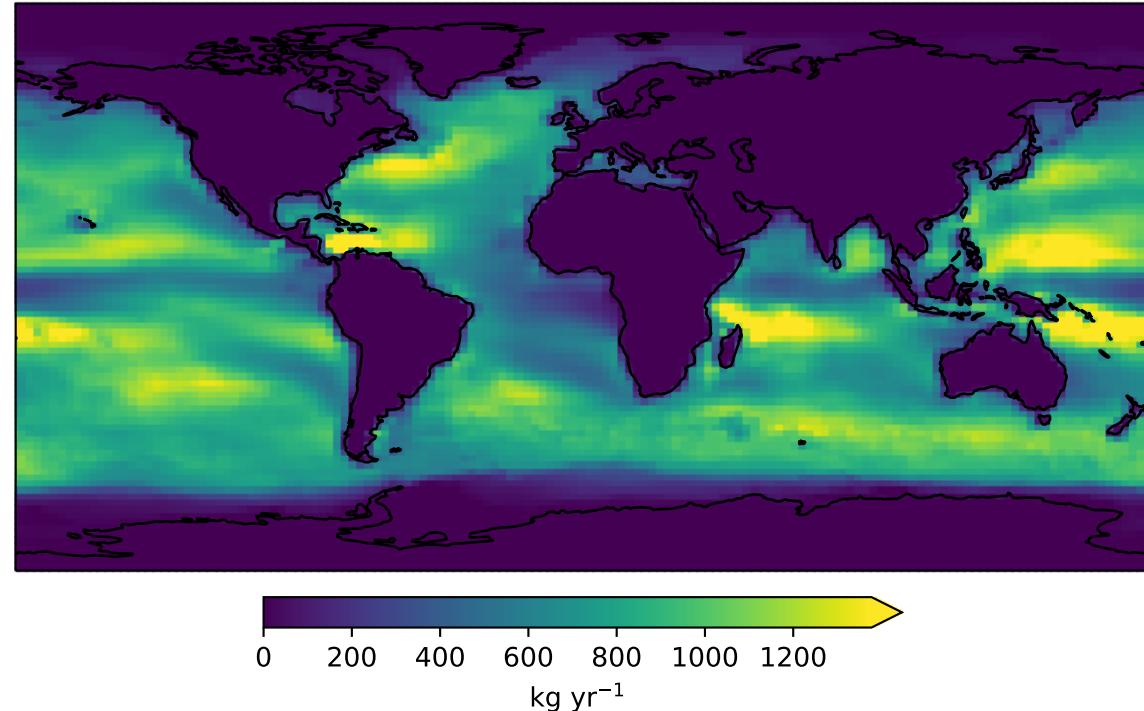
Percent Difference (%)



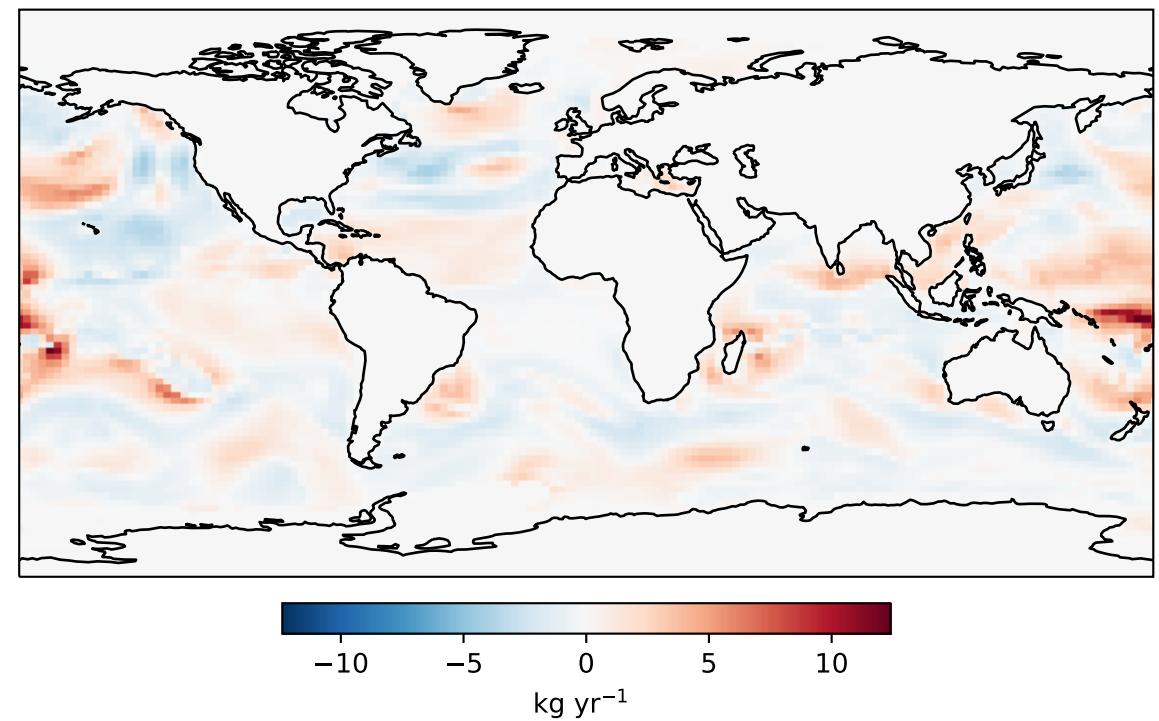
Reference Model Version: Gross Ocean Evasion



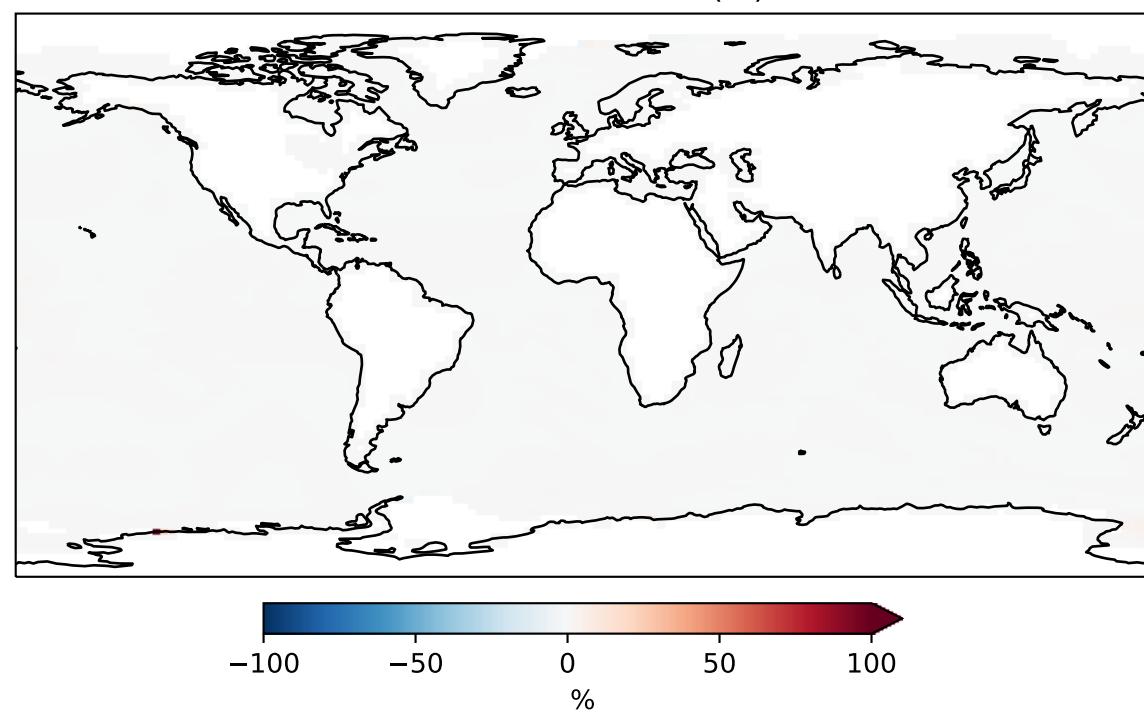
New Model Version: Gross Ocean Evasion



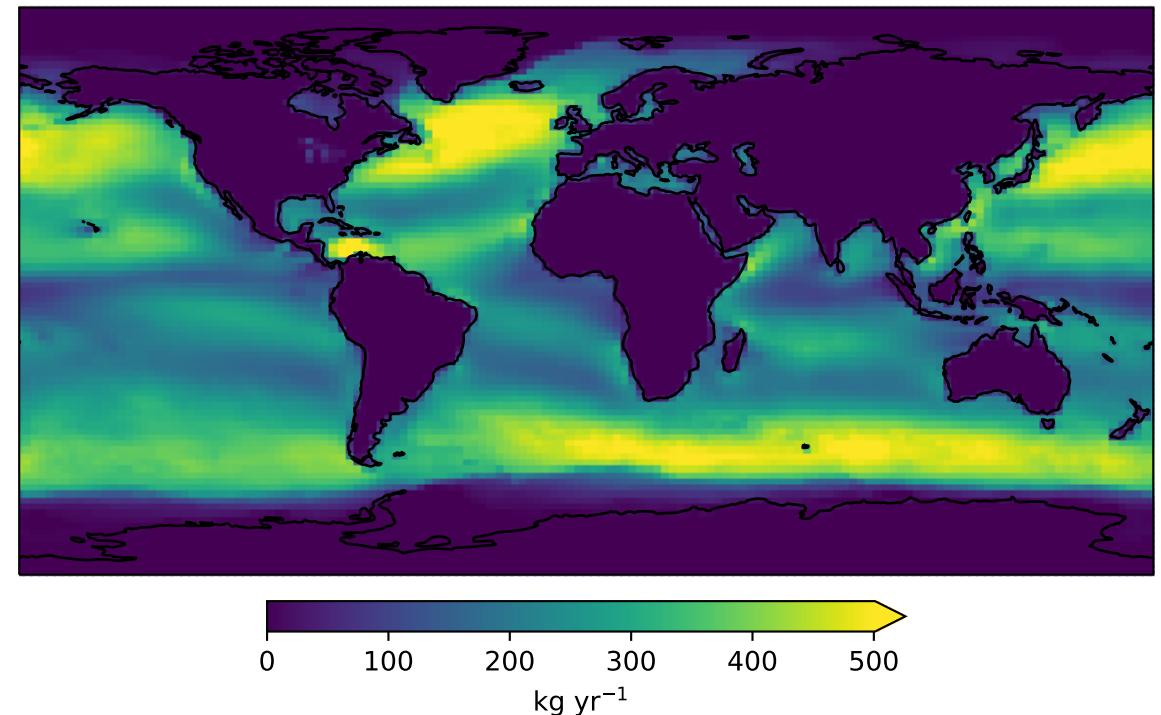
Absolute Difference



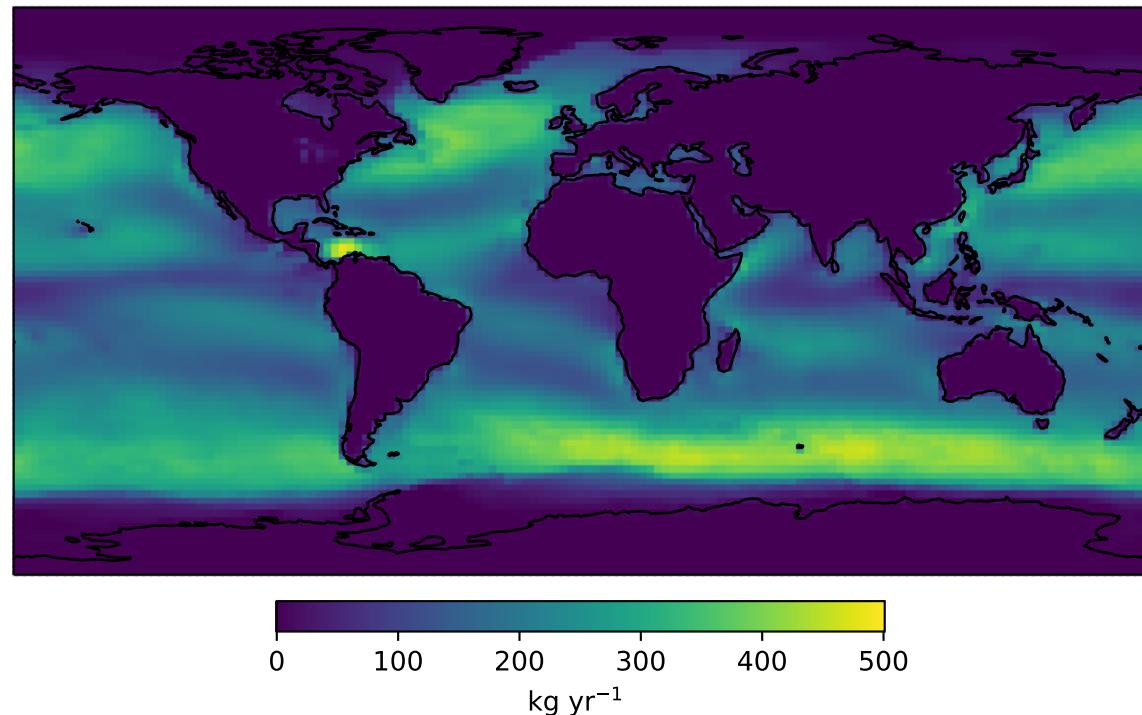
Percent Difference (%)



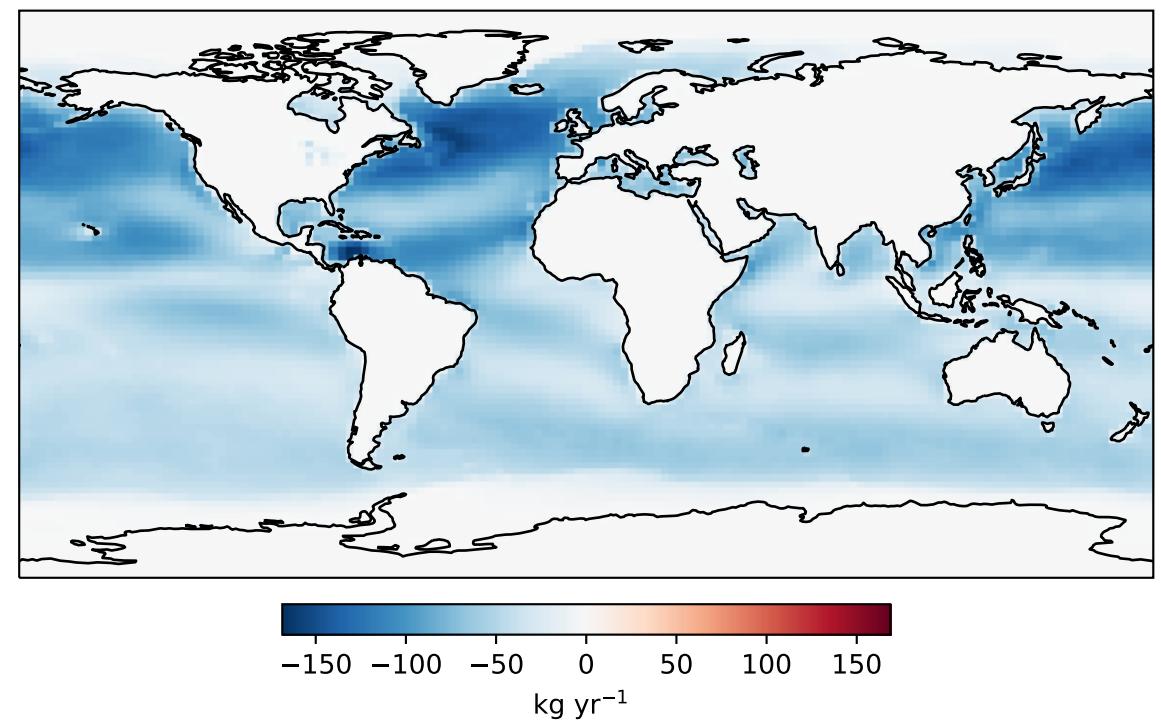
Reference Model Version: Gross Ocean Hg(0) Uptake



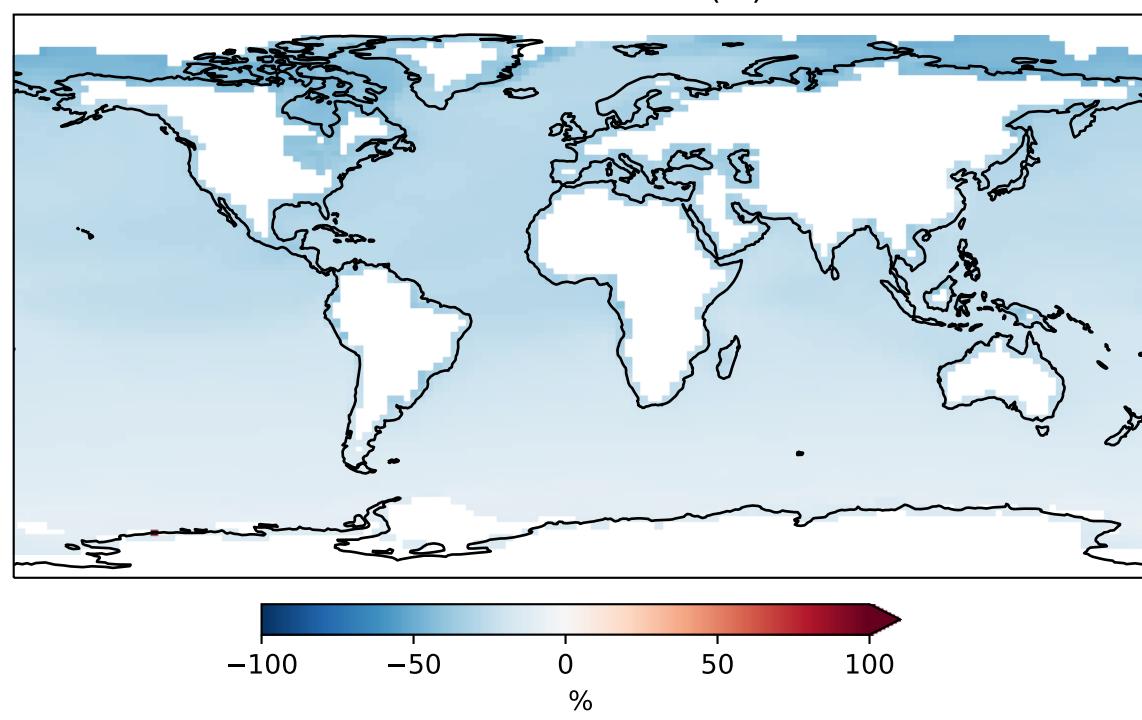
New Model Version: Gross Ocean Hg(0) Uptake



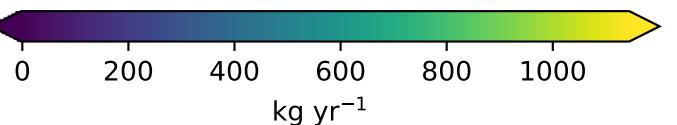
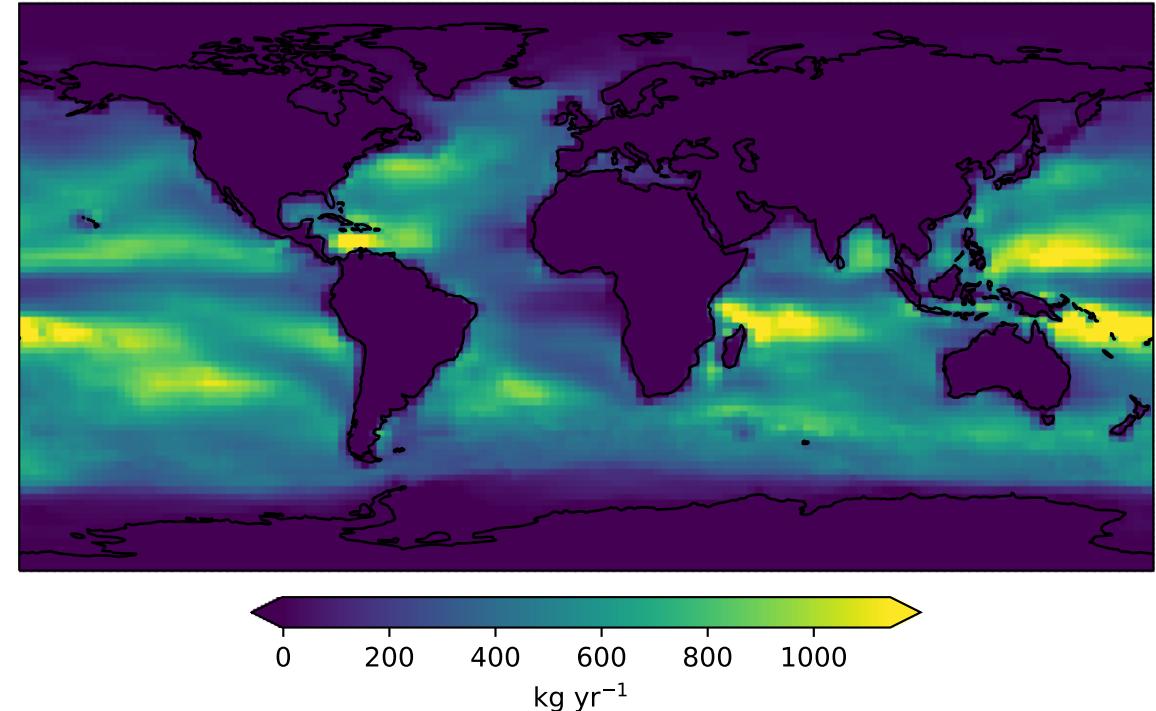
Absolute Difference



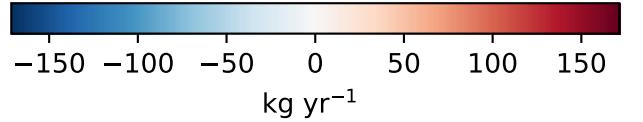
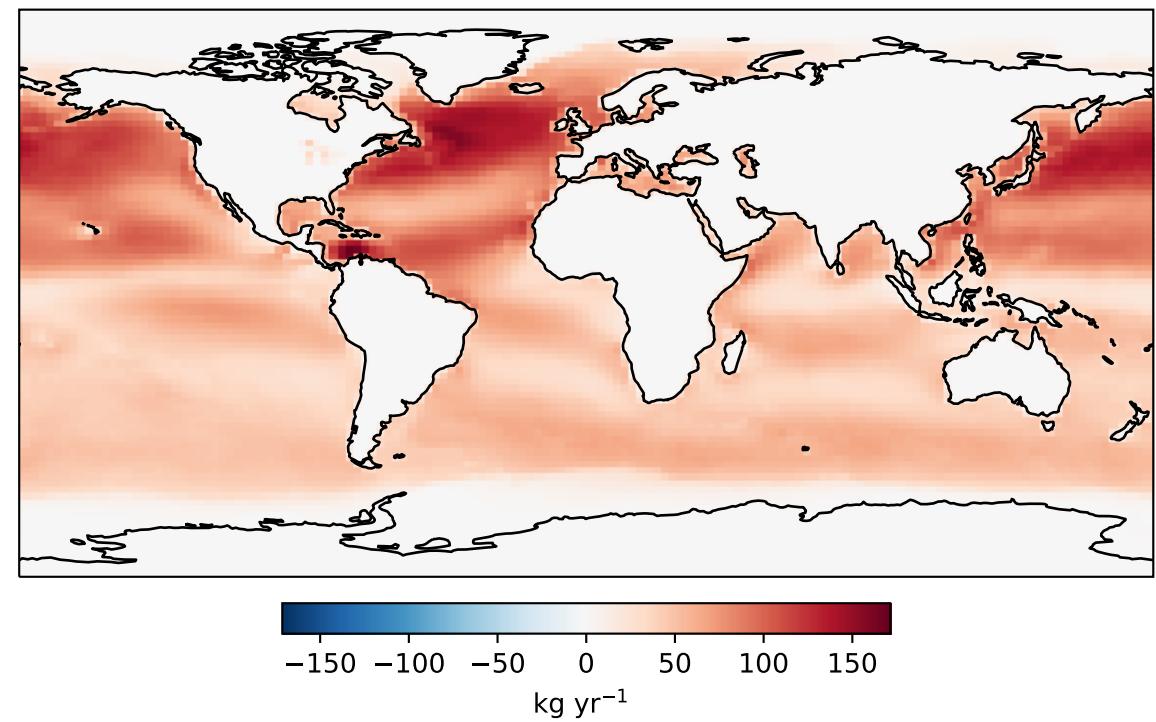
Percent Difference (%)



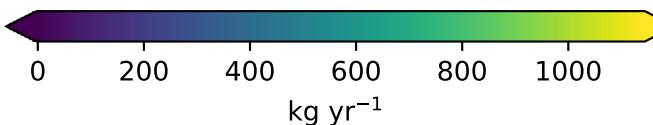
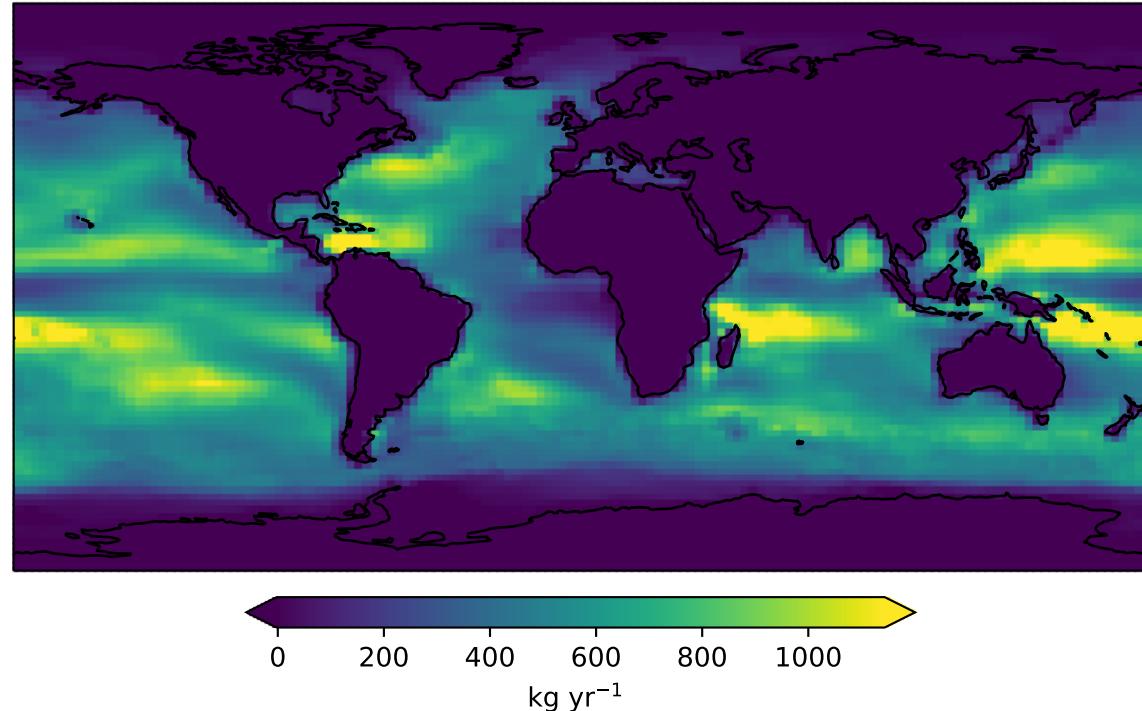
Reference Model Version: Net Ocean Evasion



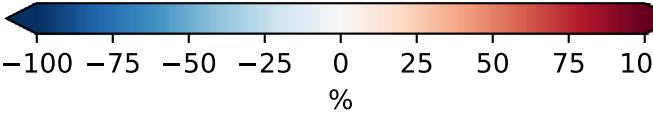
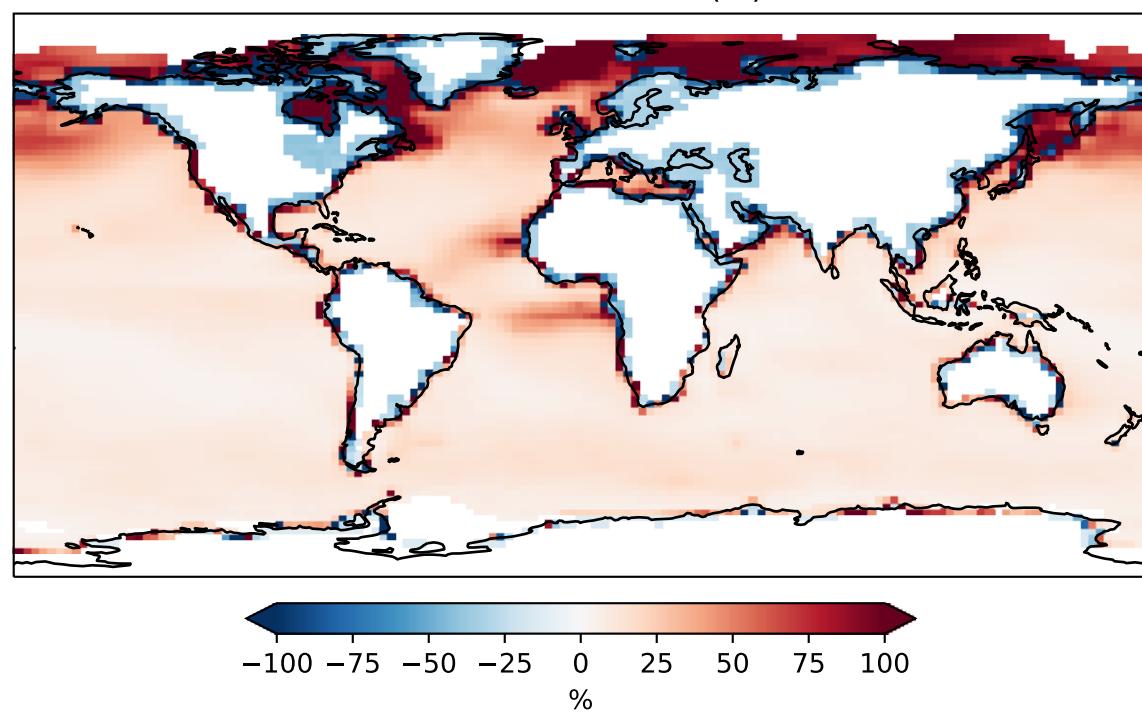
Absolute Difference



New Model Version: Net Ocean Evasion



Percent Difference (%)



	EmisHg0anthro	EmisHg2HgPanthro	EmisHg0geogenic	EmisHg0soil	EmisHg0biomass	EmisHg0land	EmisHg0snow	FluxHg0fromOceanToAir	DryDep_Hg0	DryDep_Hg2	DryDep_HgP	WetLossTot_Hg2	WetLossTot_HgP	FluxHg0fromAirToOcean	LossHg2bySeaSalt	Gross_Hg_Ox	ProdHg2fromHg0
Ref	1828.4	399.52	250.48	846.88	328.91	77.87	158.67	5125.8	1192.4	844.07	11.82	3513.9	92.114	1916.9	1429.5	17640.0	5467.7
New	1828.4	399.52	250.48	844.72	360.51	61.266	129.68	5164.9	3150.5	665.26	10.158	2591.7	68.069	1539.5	1077.7	12828.0	3954.9