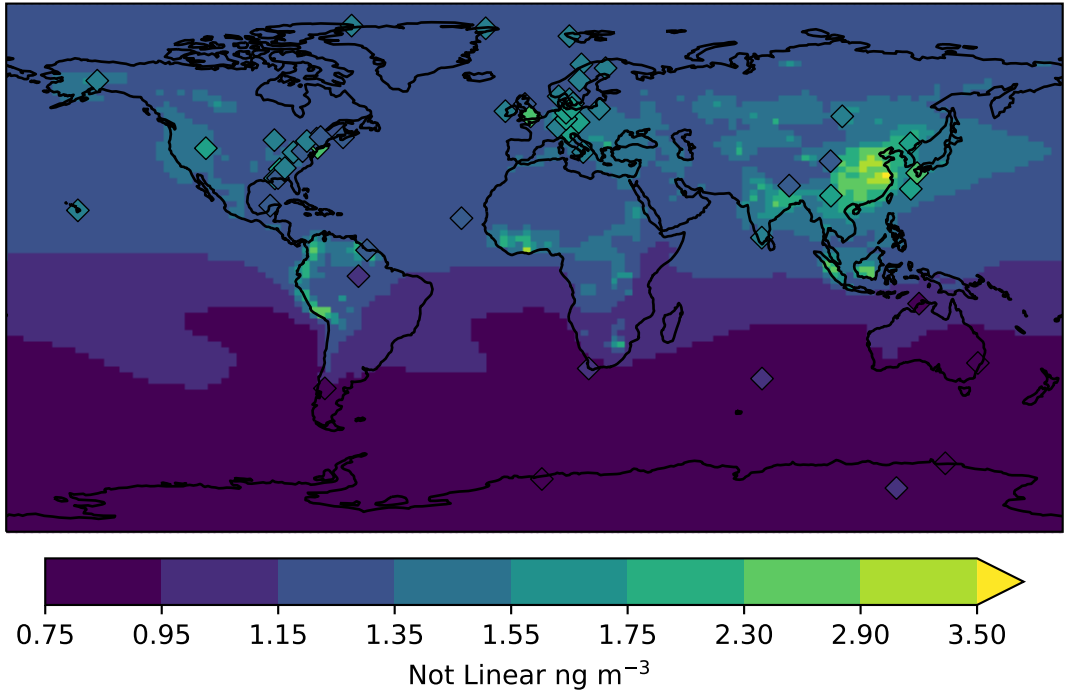
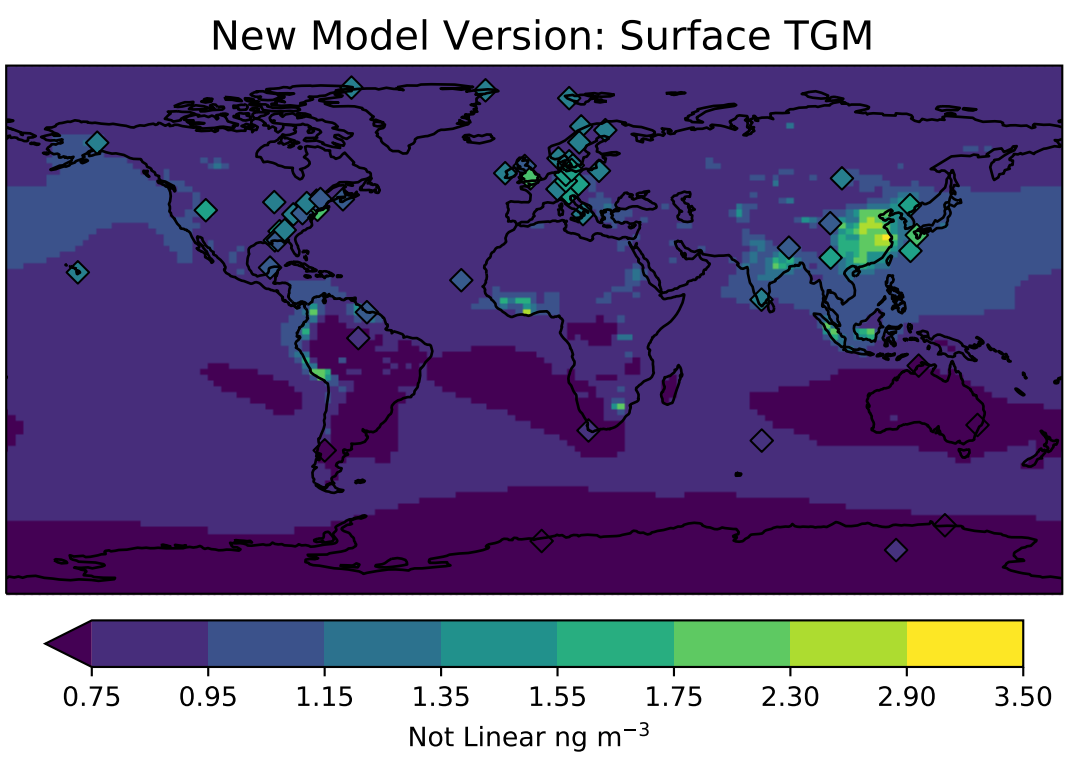


Terrestrial R^2= 0.598

Mean Mod. = 1.29 ± 0.19 ng m^{-3}

Mean Obs. = 1.39 ± 0.26 ng m^{-3}

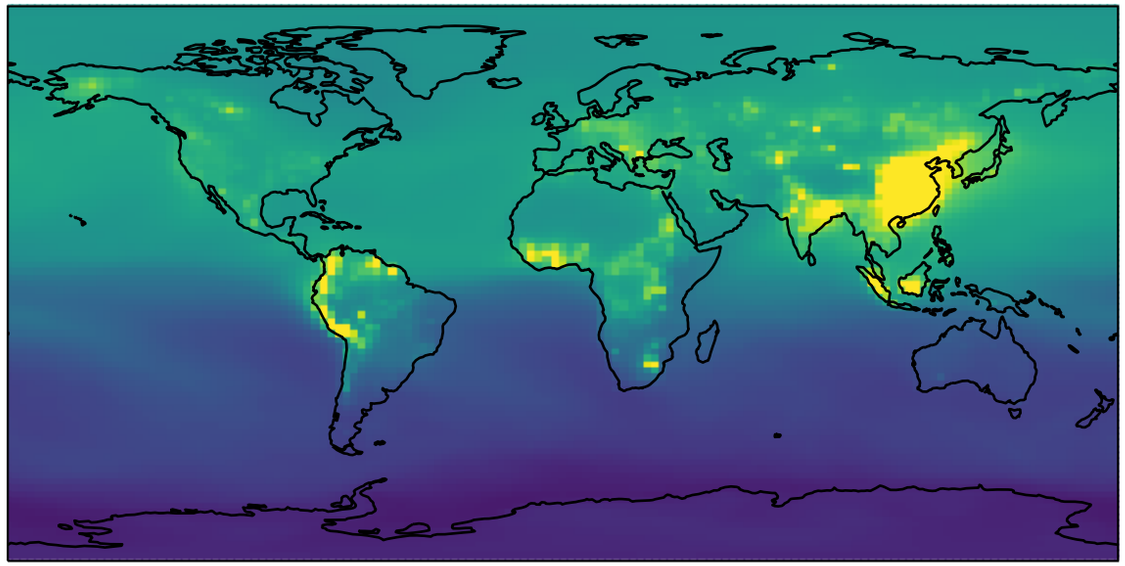


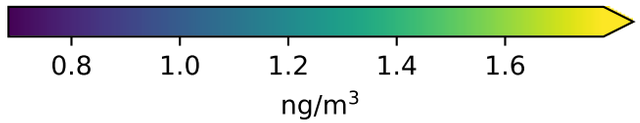
Terrestrial R^2= 0.432

Mean Mod. = 0.87 ± 0.11 ng m^{-3}

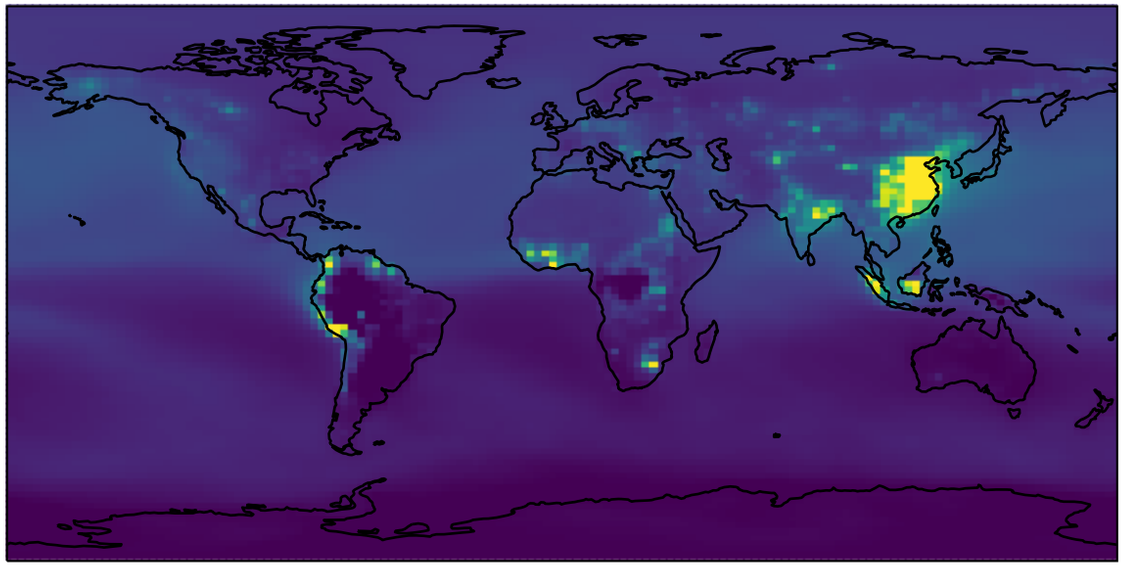
Mean Obs. = 1.39 ± 0.26 ng m^{-3}

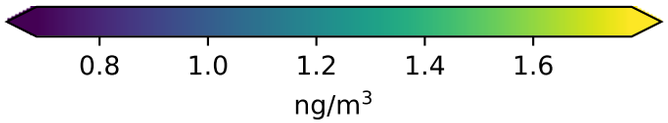
Reference Model Version: Surface TGM



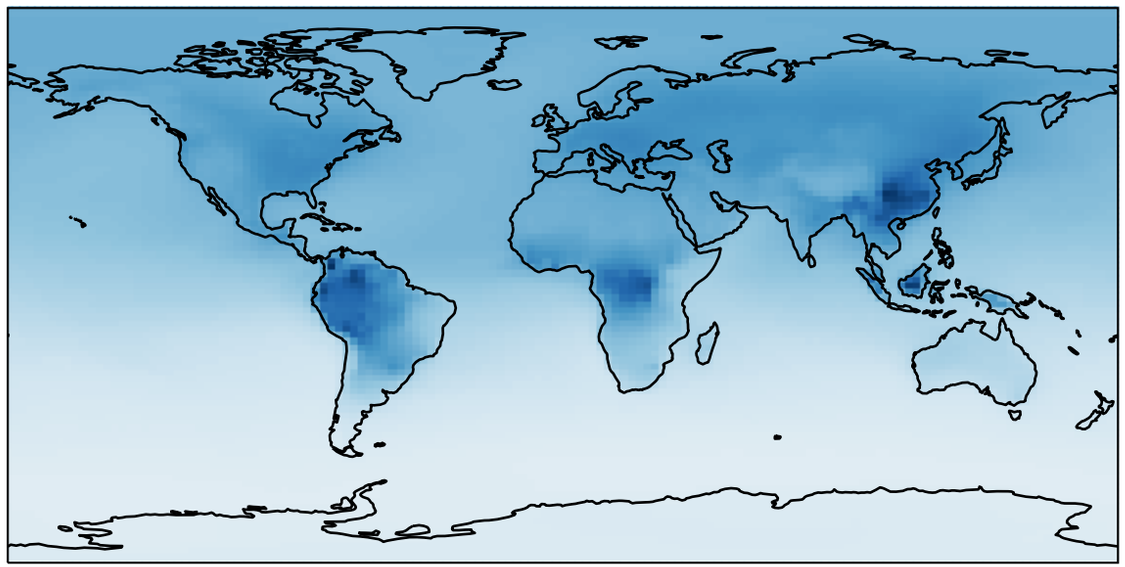


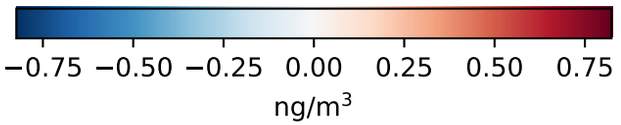
New Model Version: Surface TGM



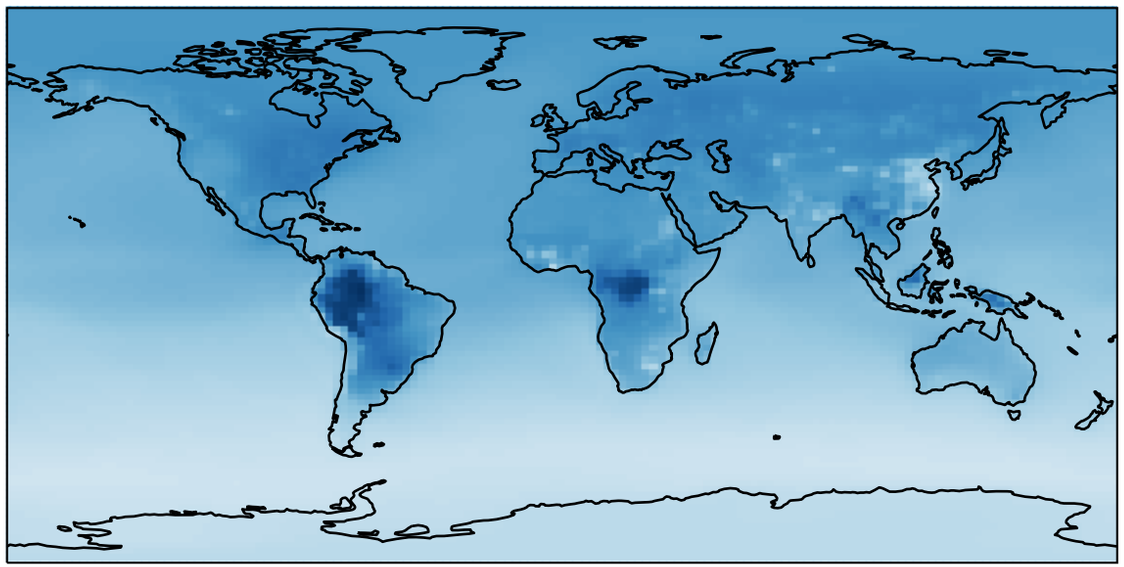


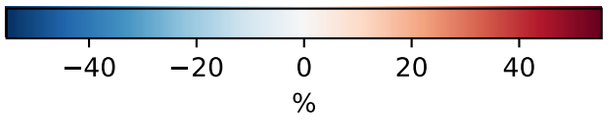
Absolute Difference

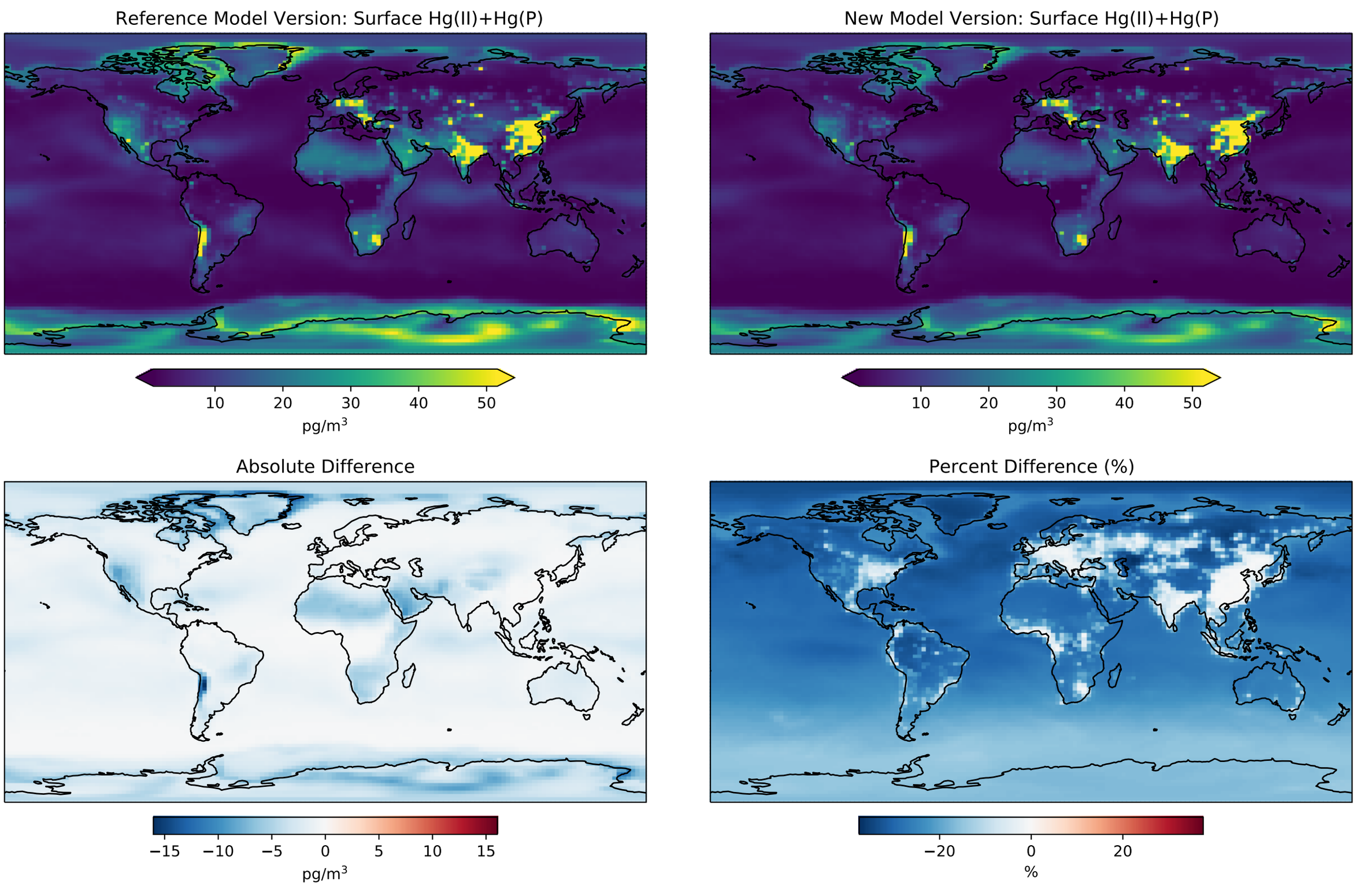


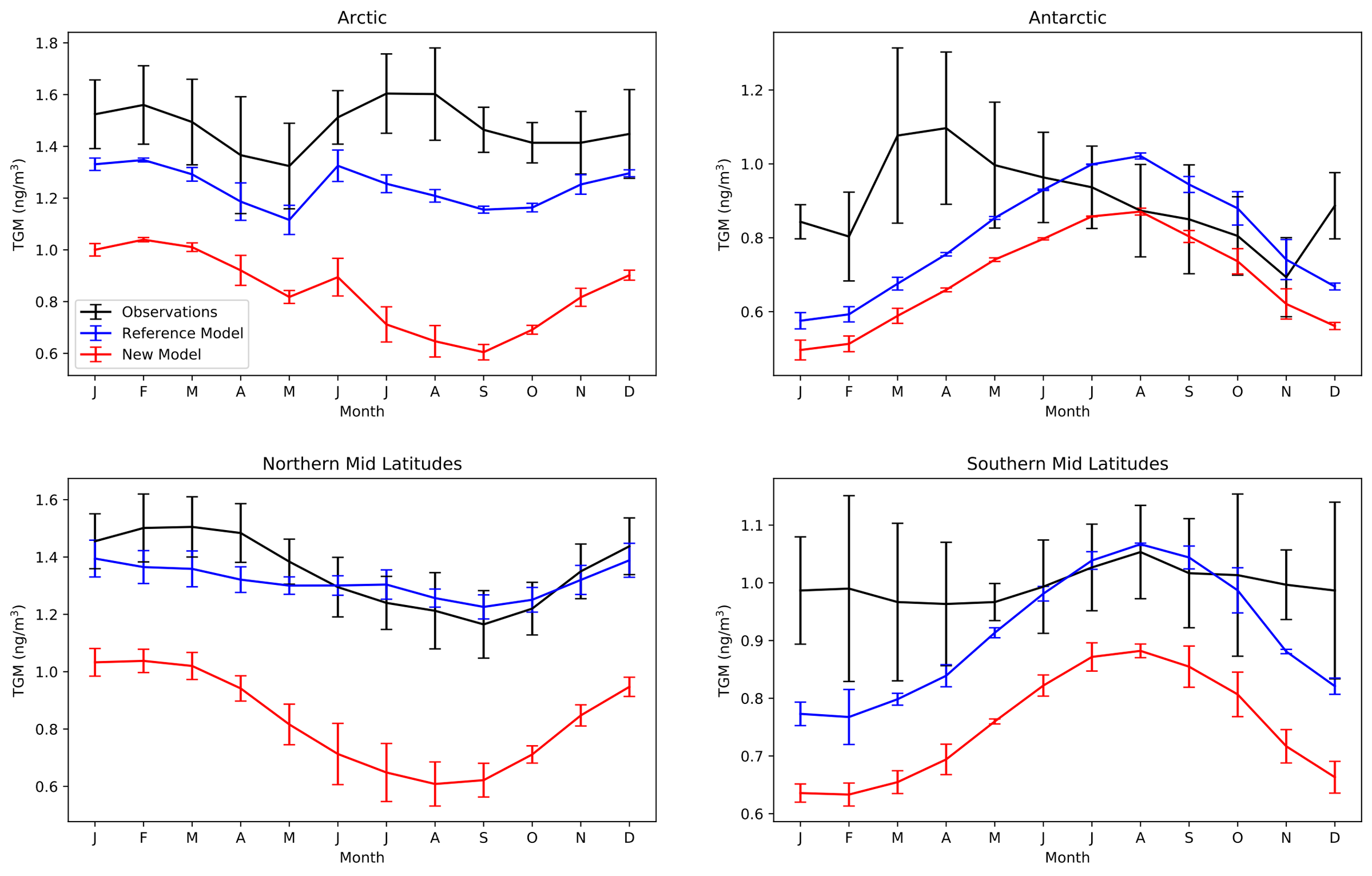


Percent Difference (%)





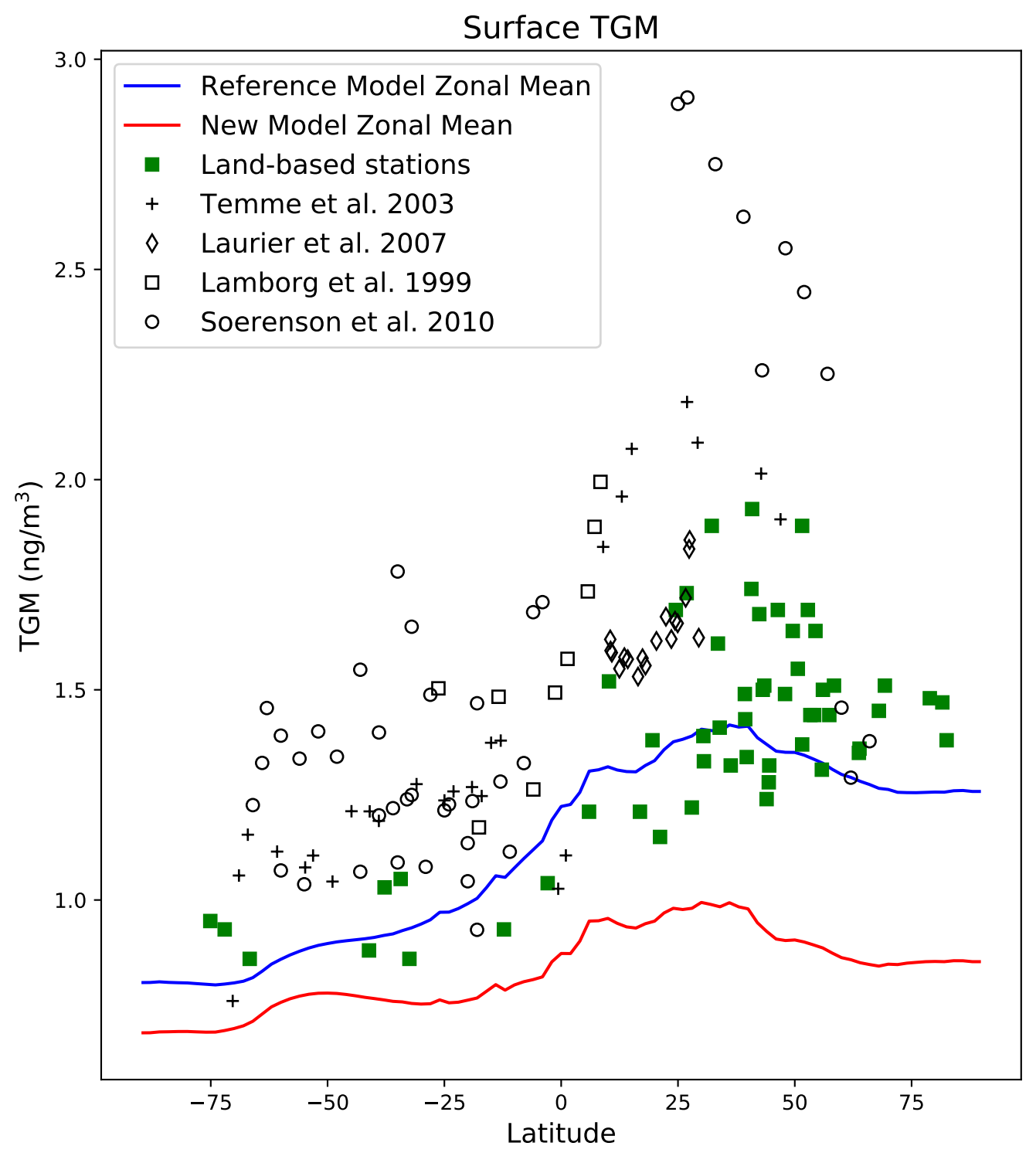

Reference Model Version: Surface Hg(II)+Hg(P)
New Model Version: Surface Hg(II)+Hg(P)
10
20
30
40
50
pg/m3
Absolute Difference
Percent Difference (%)
−15
−10
−5
0
5
10
15
pg/m3
−20
0
20
%


Arctic
Antarctic
Northern Mid Latitudes
Southern Mid Latitudes
TGM (ng/m³)
Month
J F M A M J J A S O N D
Observations
Reference Model
New Model

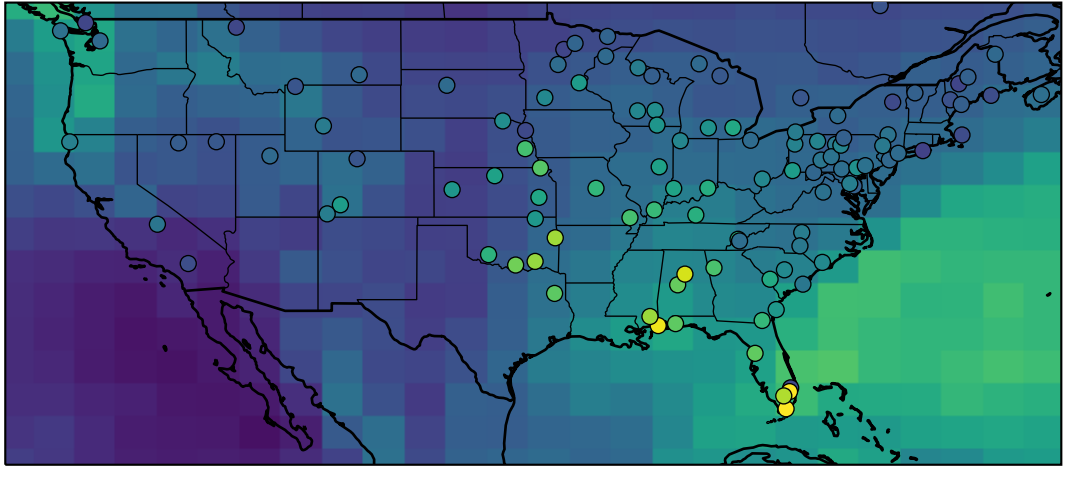
Reference Model
New Model
Observations

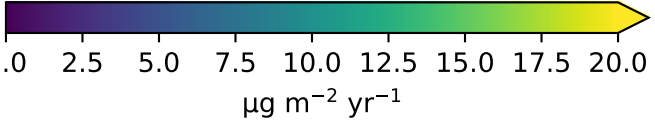
ALT (82.5, -62.3)
VRS (81.58, -16.61)
ZEP (78.9, 11.9)
AND (69.28, 16.01)
PAL (68.0, 24.24)
DNP (63.72, -148.97)
RAO (57.39, 11.91)
MHD (53.33, -9.9)
LIS (51.58, 104.89)
CMA (46.37, 11.79)
UDH (44.53, -72.87)
KEJ (44.43, -65.21)
HTW (43.97, -74.22)
HRM (43.47, -88.62)
RCS (43.15, -77.55)
MCH (42.4, 128.11)
BRX (40.87, -73.88)
SLC (40.71, -111.96)
PNY (39.71, -79.01)
LON (39.39, 16.61)
ATN (39.31, -82.12)
MWA (36.29, 100.9)
YKV (33.93, -85.05)
BMH (33.55, -86.81)
MIN (32.23, 130.4)
PSC (30.55, -87.38)
GRB (30.43, -88.43)
EVK (27.96, 86.81)
CHE (26.86, 128.25)
MAL (24.54, 101.03)
SIS (21.16, -90.05)
MLO (19.54, -155.58)
CAL (16.86, -24.87)
KOD (10.23, 77.47)
NIK (5.96, -57.04)
MAN (-2.89, -59.97)
CPT (-34.35, 18.49)
AMS (-37.8, 77.55)
BAR (-41.13, -71.42)
DDU (-66.66, 140.0)
TRO (-72.02, 2.53)
DMC (-75.1, 123.35)

TGM (ng/m^3)
J FMAMJ J ASOND
Month


Surface TGM
Reference Model Zonal Mean
New Model Zonal Mean
Land-based stations
Temme et al. 2003
Laurier et al. 2007
Lamborg et al. 1999
Soerenson et al. 2010
TGM (ng/m3)
3.0
2.5
2.0
1.5
1.0
−75
−50
−25
0
25
50
75
Latitude

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

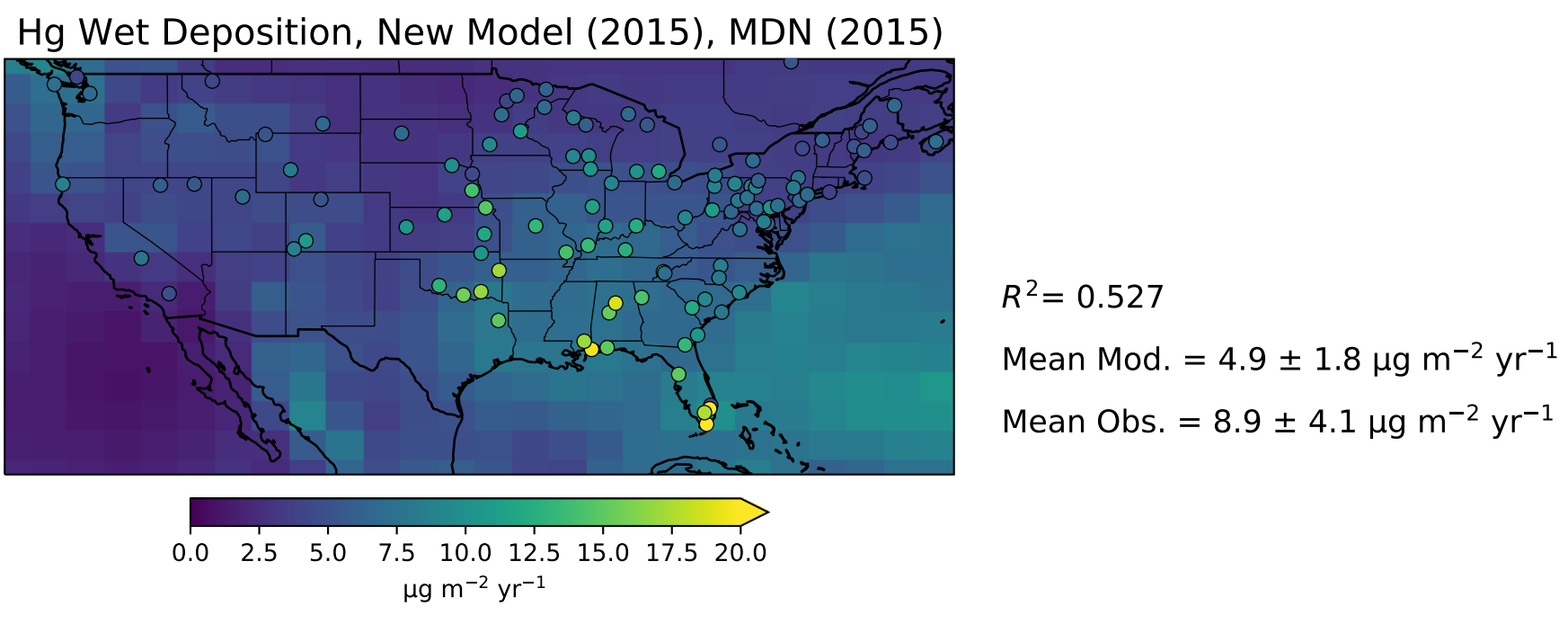


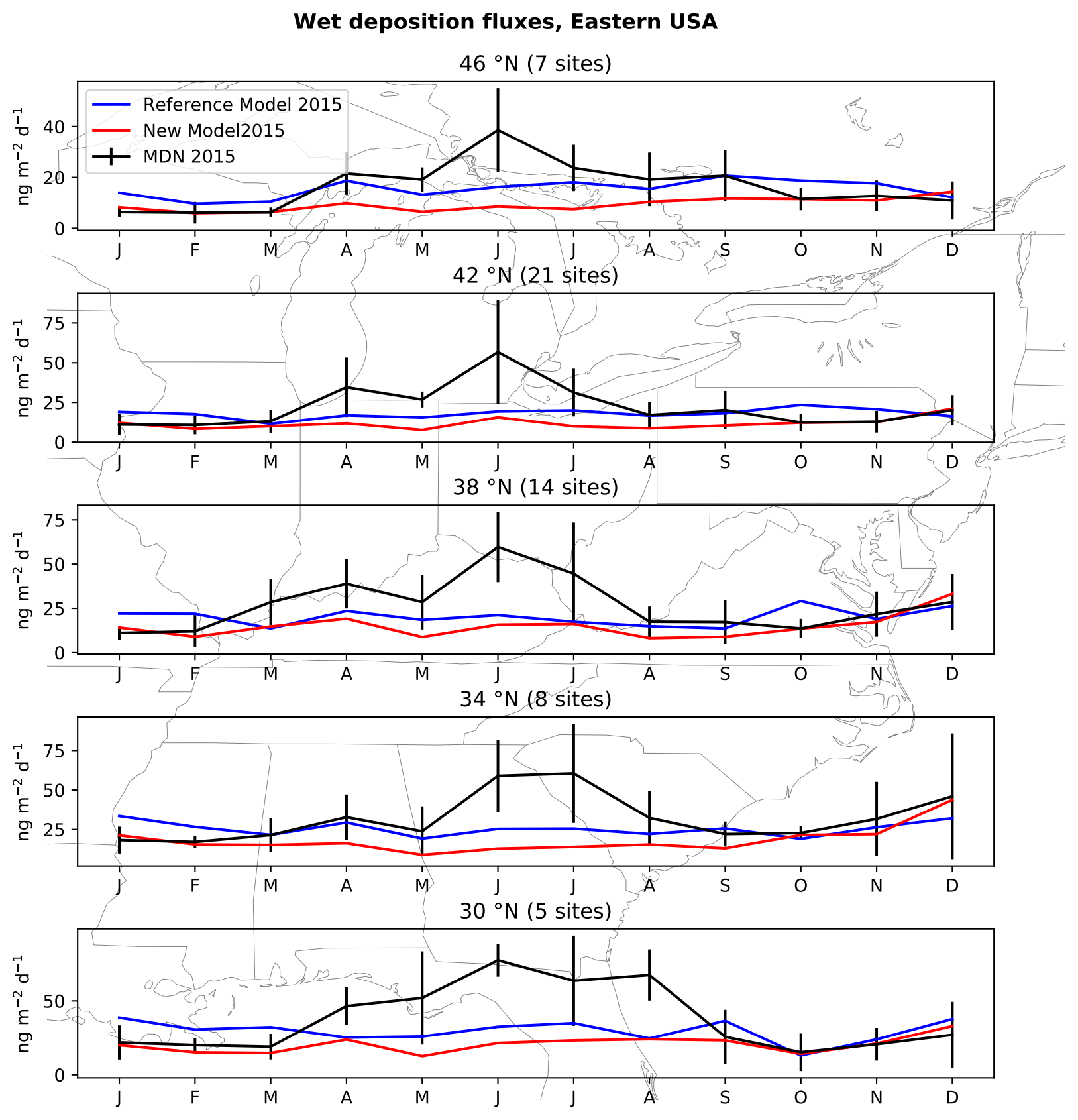


R^2= 0.277

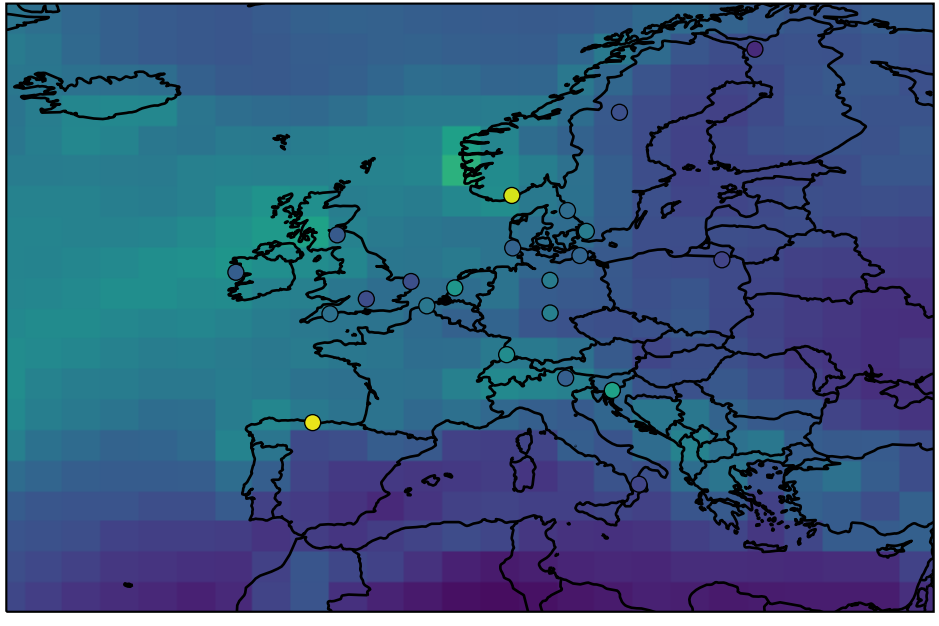
Mean Mod. = 7.0 ± 2.3 μg m^{-2} yr^{-1}

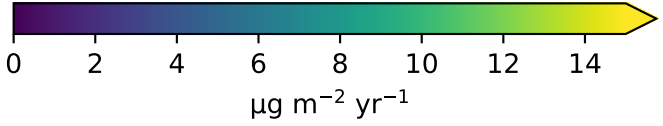
Mean Obs. = 8.9 ± 4.1 μg m^{-2} yr^{-1}


Hg Wet Deposition, New Model (2015), MDN (2015)
0.0 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0
μg m⁻² yr⁻¹
R^2= 0.527
Mean Mod. = 4.9 ± 1.8 μg m^{-2} yr^{-1}
Mean Obs. = 8.9 ± 4.1 μg m^{-2} 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)
Reference Model 2015
New Model2015
MDN 2015
ng m⁻² d⁻¹
J F M A M J J A S O N D

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



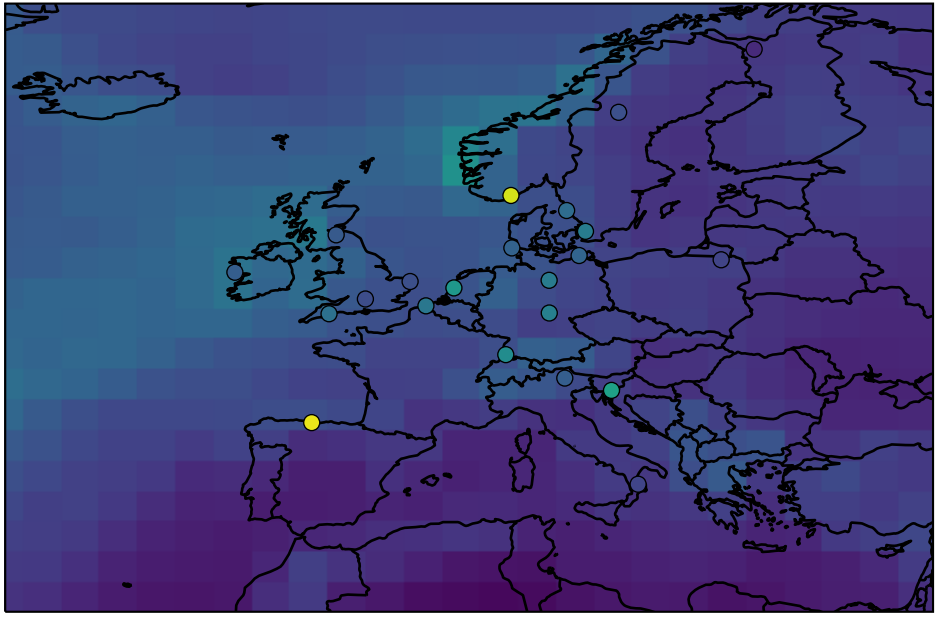


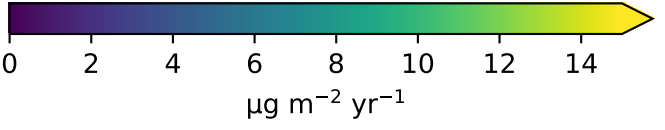
R^2= 0.168

Mean Mod. = 5.3 ± 1.1 µg m^{-2} yr^{-1}

Mean Obs. = 5.9 ± 3.1 µg m^{-2} yr^{-1}

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

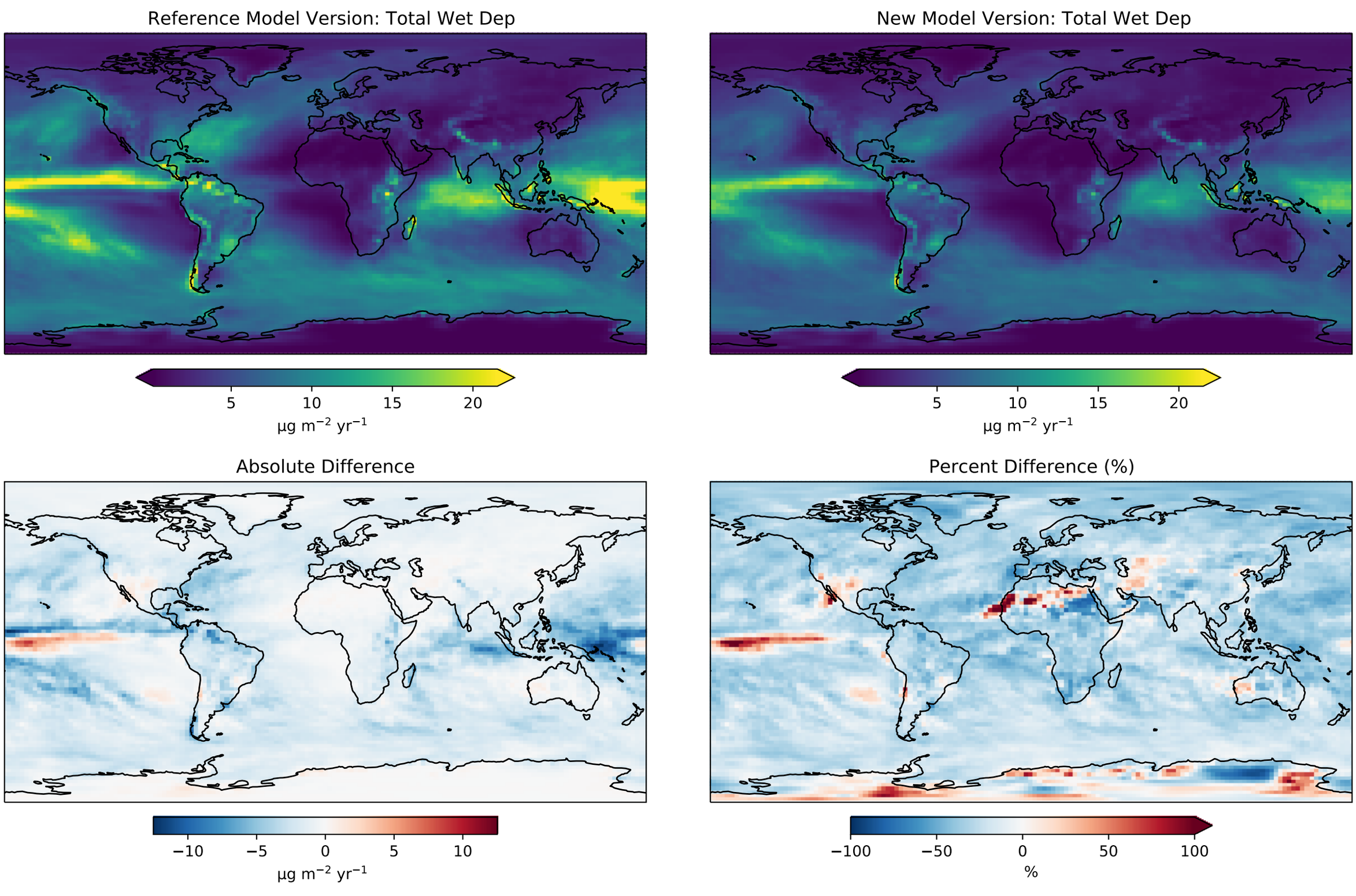


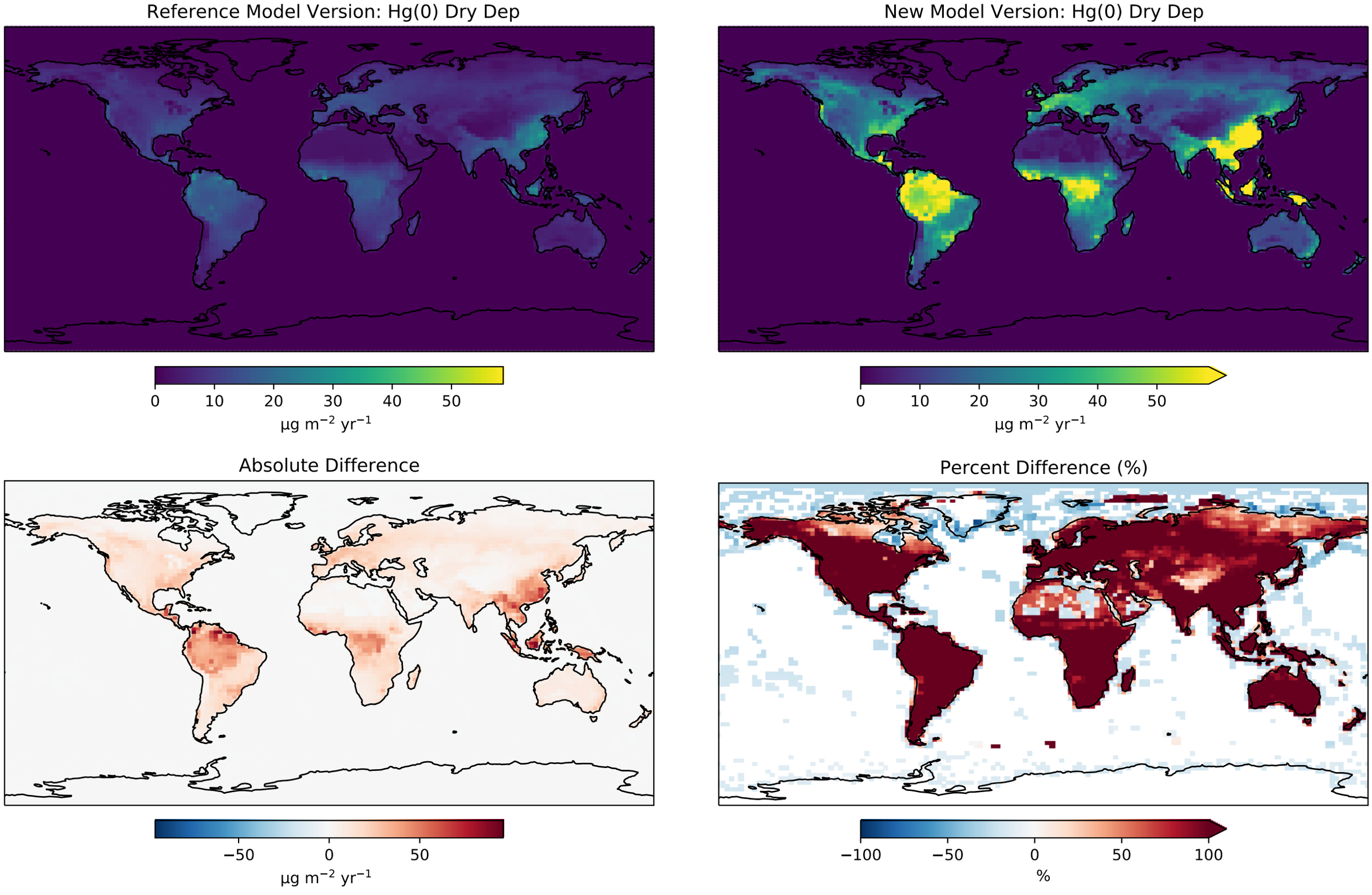


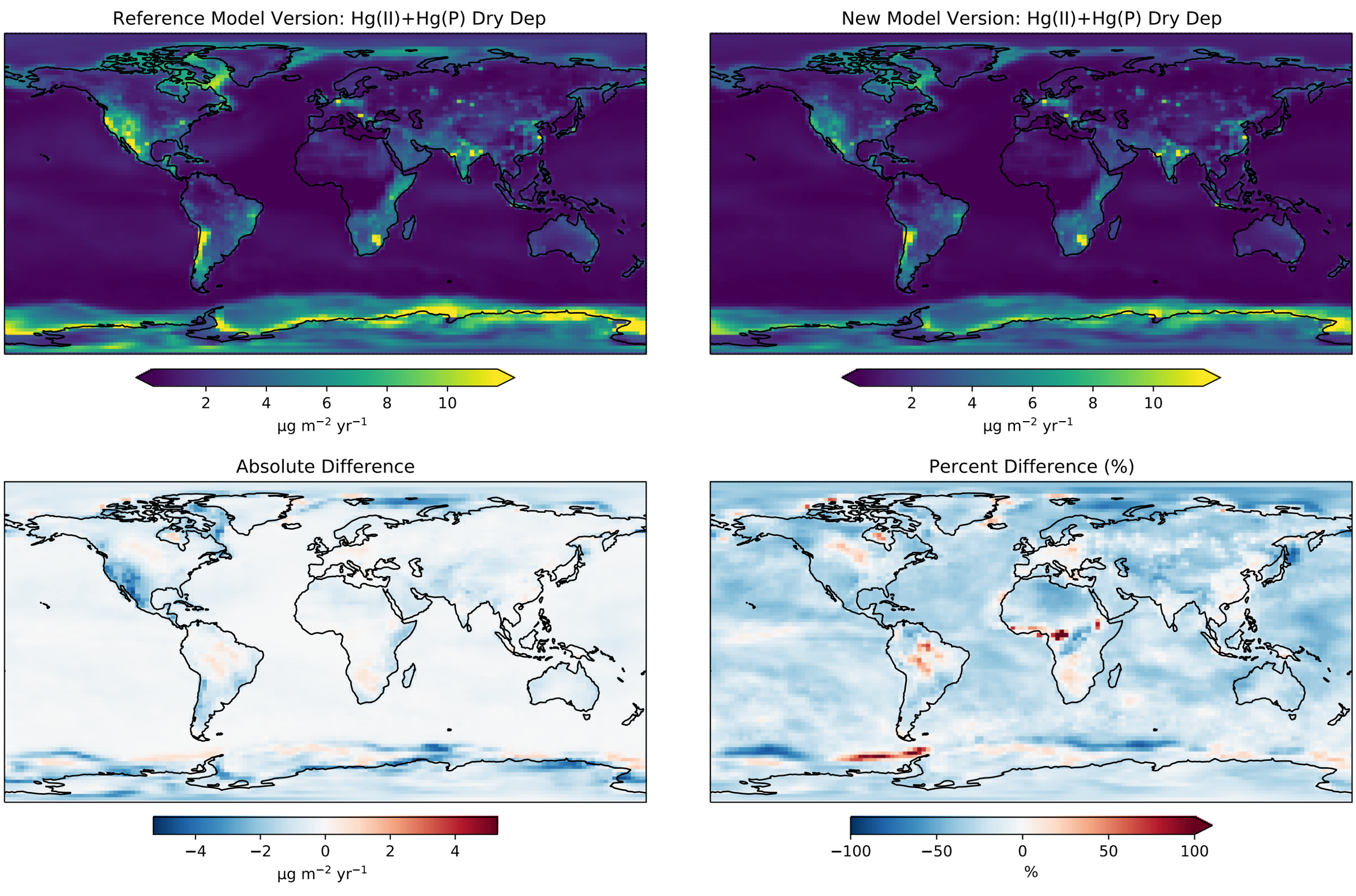
R^2= 0.069

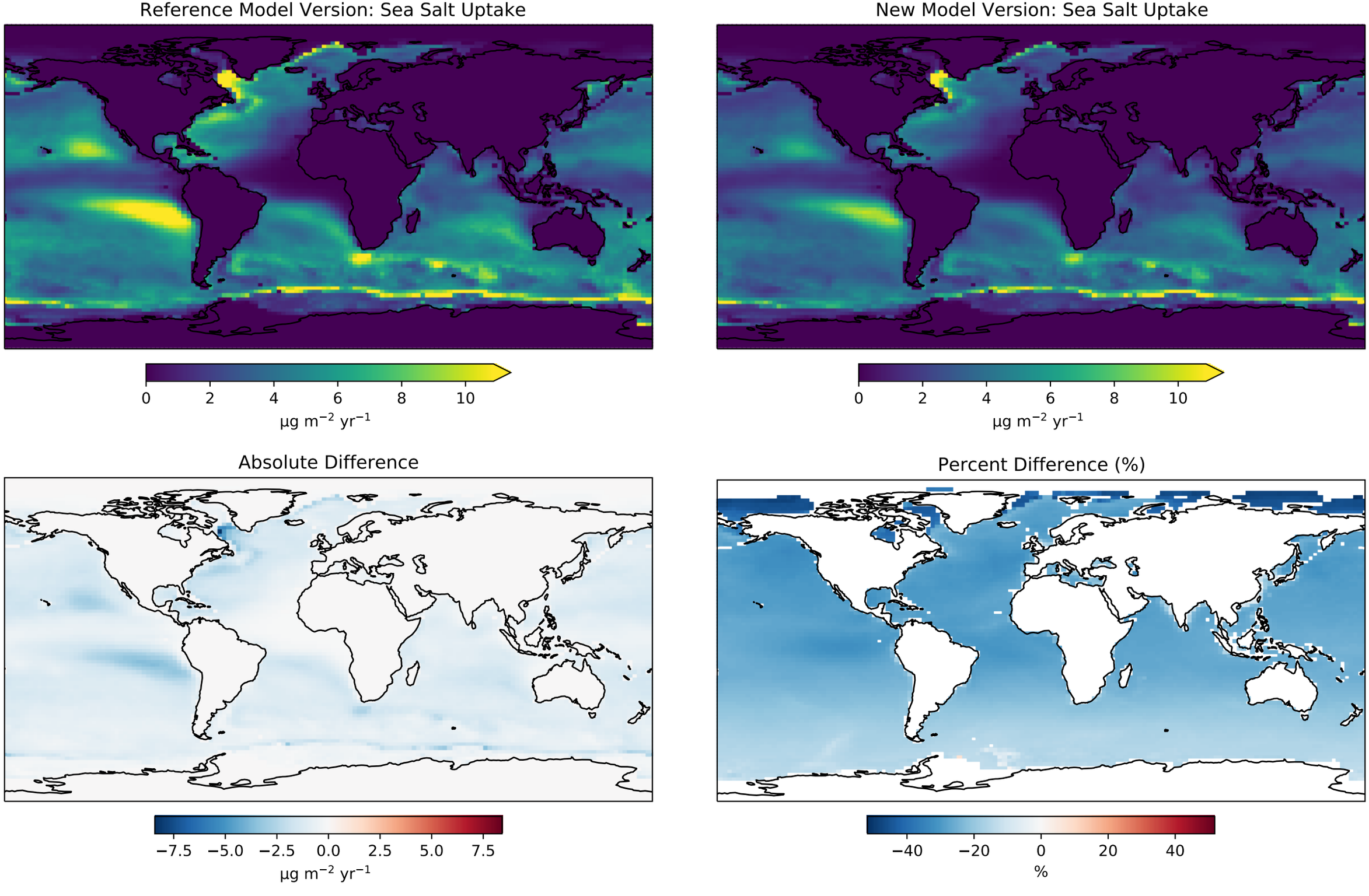
Mean Mod. = 3.5 ± 0.7 µg m^{-2} yr^{-1}

Mean Obs. = 5.9 ± 3.1 µg m^{-2} yr^{-1}

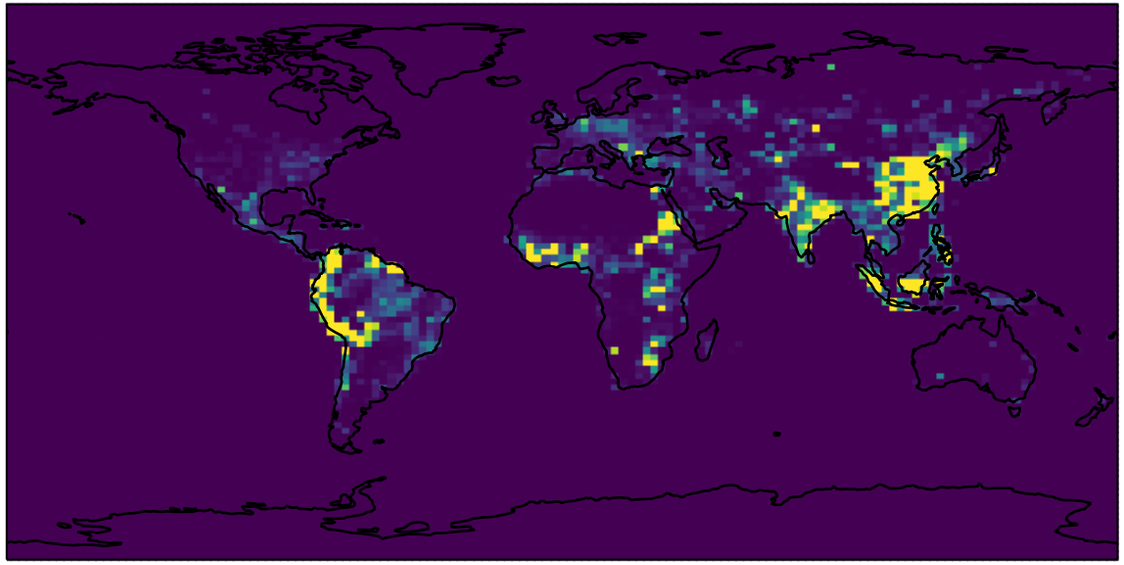

Reference Model Version: Total Wet Dep
5
10
15
20
μg m−2 yr−1
New Model Version: Total Wet Dep
5
10
15
20
μg m−2 yr−1
Absolute Difference
−10
−5
0
5
10
μg m−2 yr−1
Percent Difference (%)
−100
−50
0
50
100
%

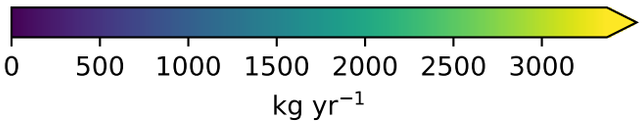

Reference Model Version: Hg(0) Dry Dep
New Model Version: Hg(0) Dry Dep
0
10
20
30
40
50
μg m^{-2} yr^{-1}
Absolute Difference
Percent Difference (%)
−50
0
50
−100
100
%


Reference Model Version: Hg(II)+Hg(P) Dry Dep
New Model Version: Hg(II)+Hg(P) Dry Dep
2
4
6
8
10
μg m^{-2} yr^{-1}
Absolute Difference
Percent Difference (%)
−4
−2
0
2
4
−100
−50
0
50
100
%

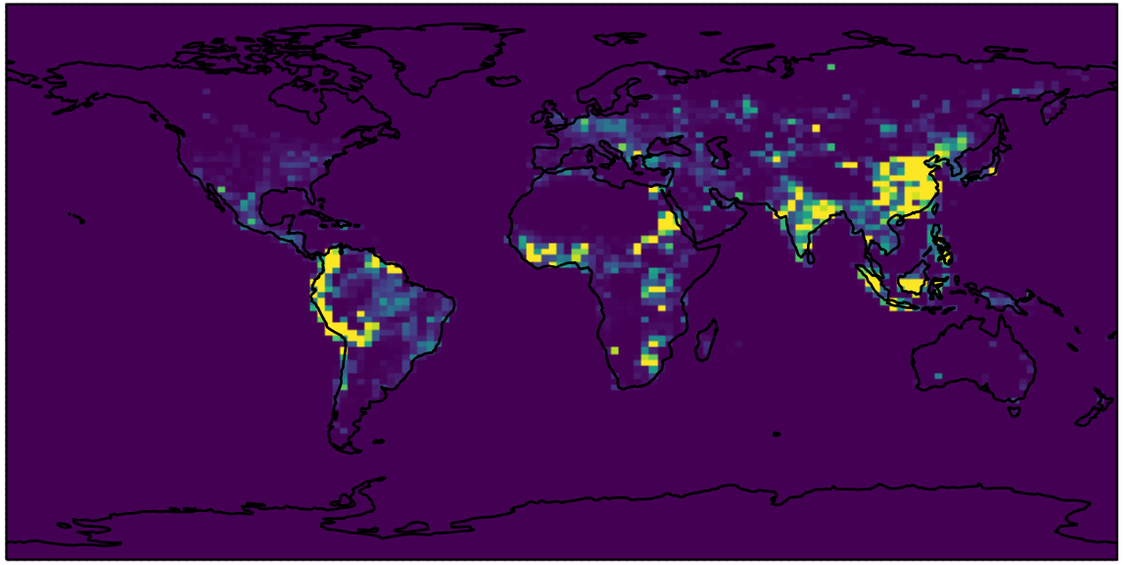

Reference Model Version: Sea Salt Uptake
New Model Version: Sea Salt Uptake
0
2
4
6
8
10
µg m^{-2} yr^{-1}
Absolute Difference
Percent Difference (%)
−7.5
−5.0
−2.5
0.0
2.5
5.0
7.5
µg m^{-2} yr^{-1}
−40
−20
0
20
40
%

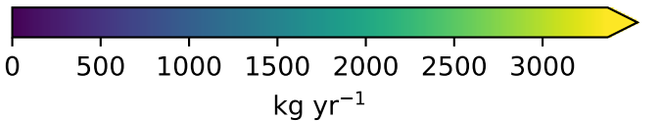
Reference Model Version: Anthro Emissions - Hg(0)



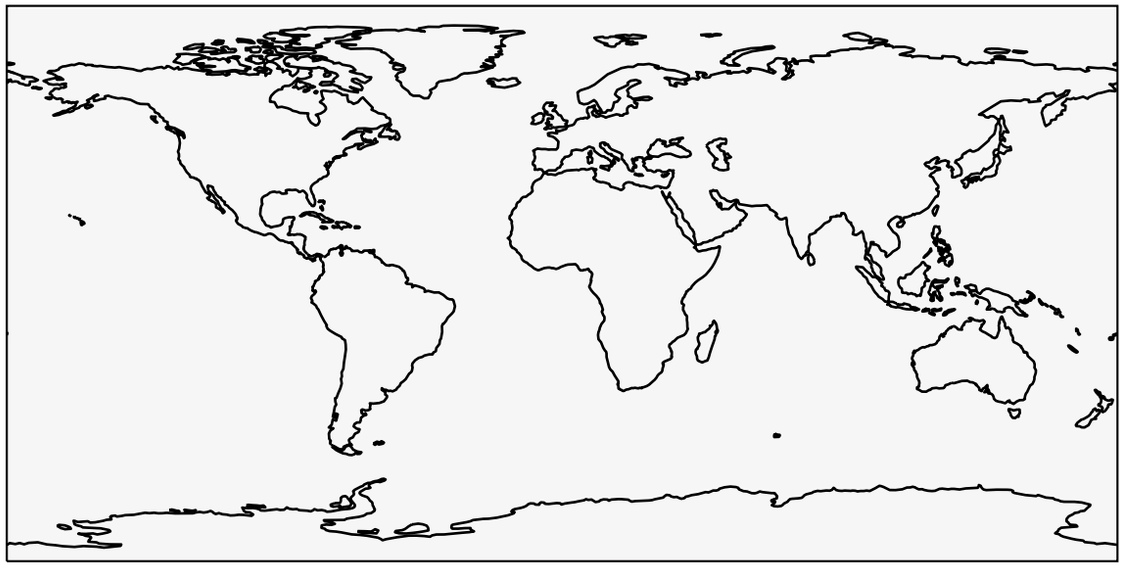


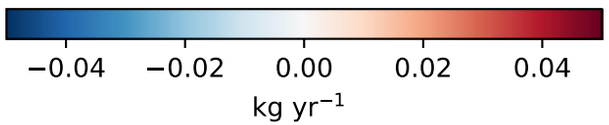
New Model Version: Anthro Emissions - Hg(0)





Absolute Difference





Percent Difference (%)