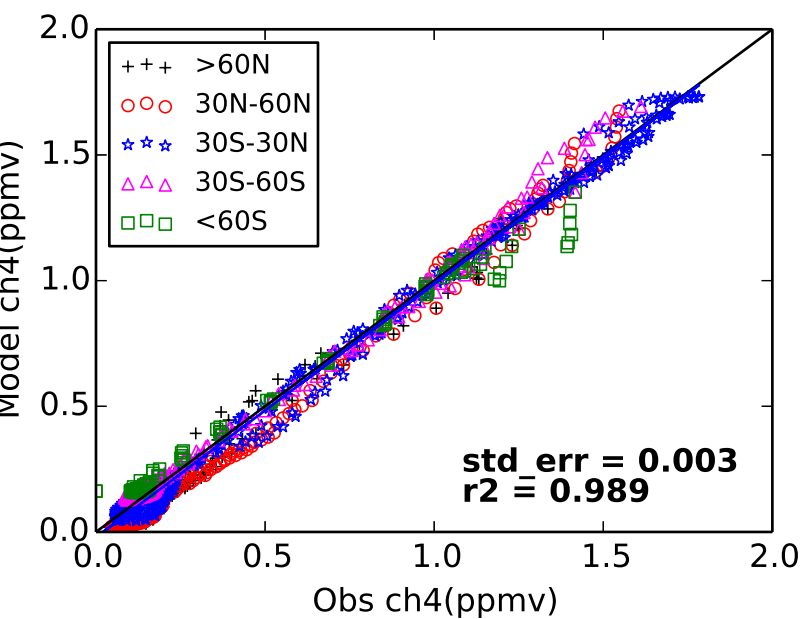
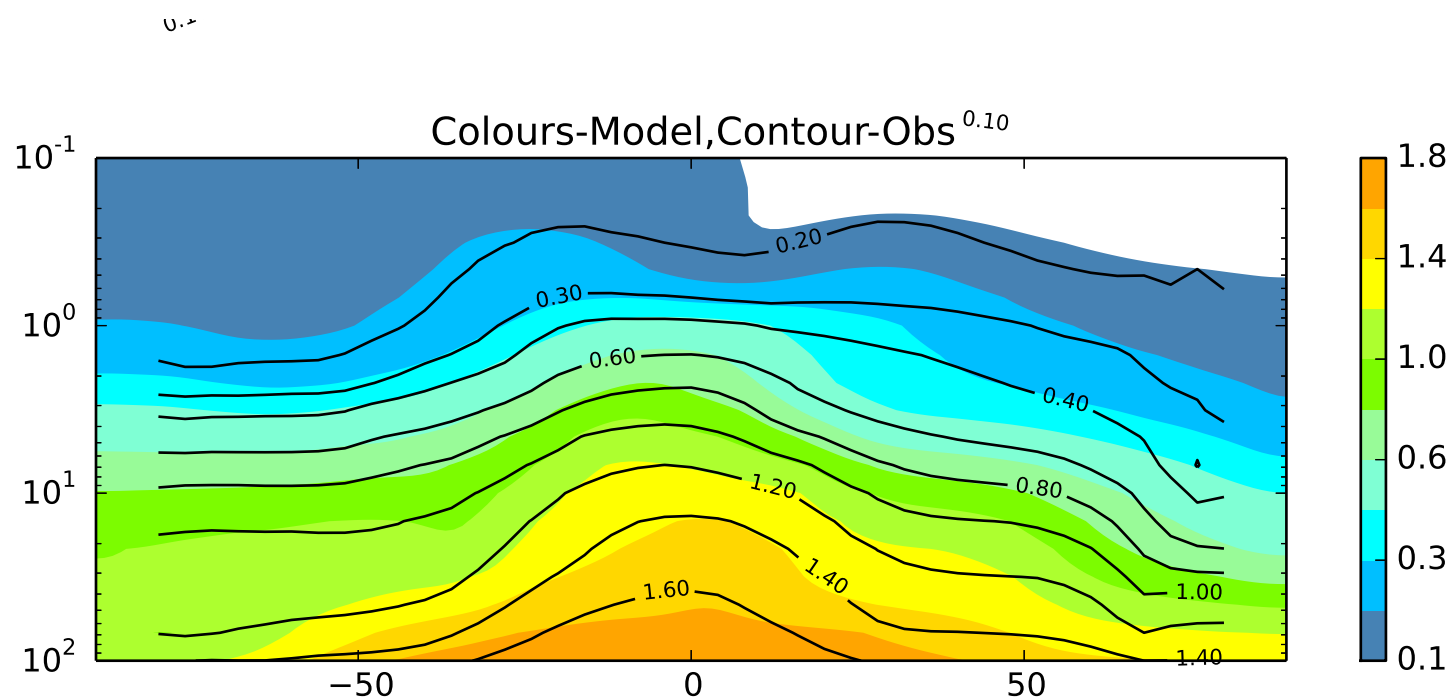
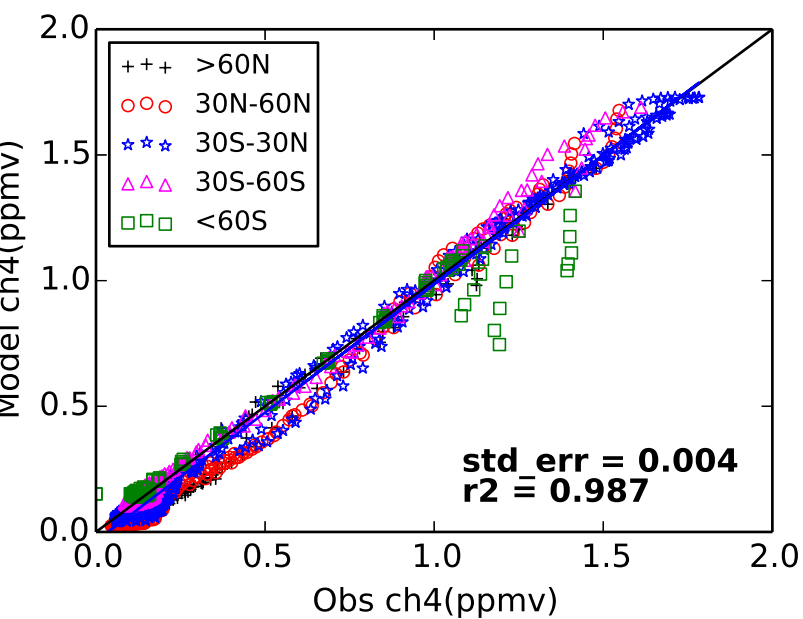
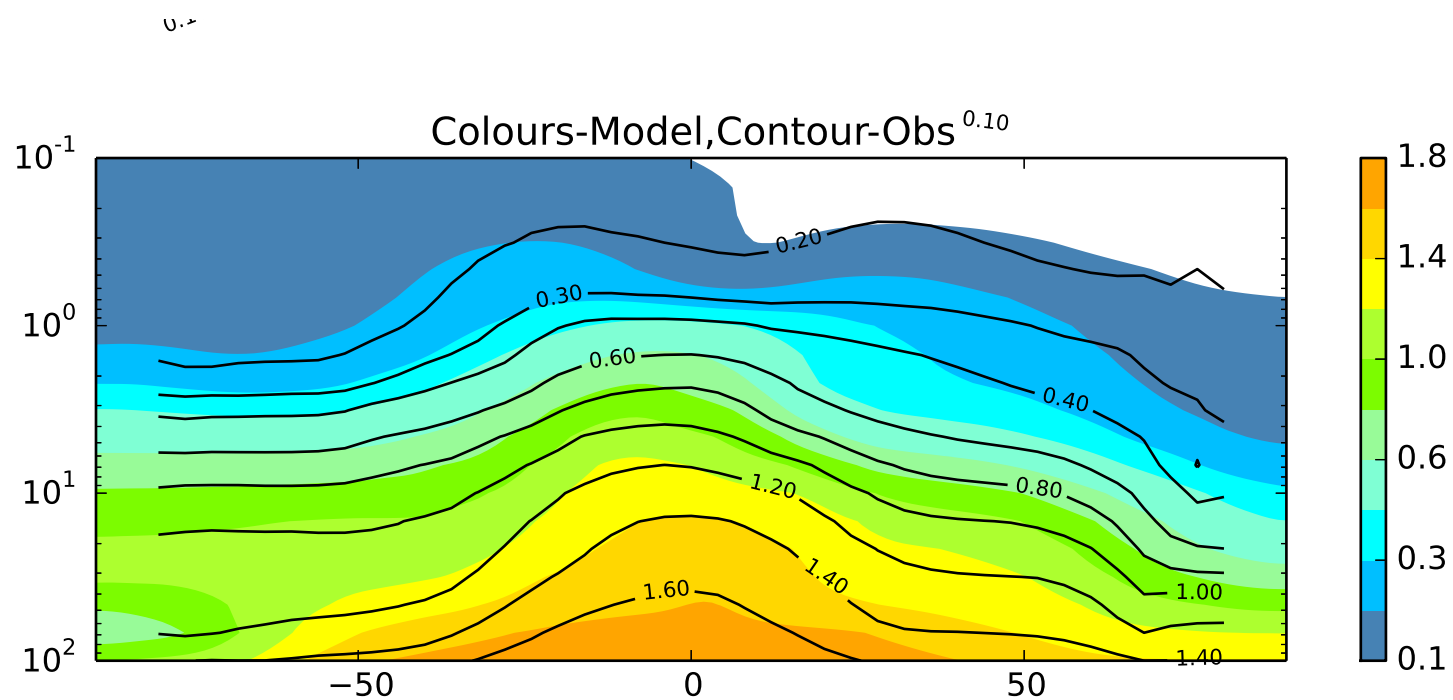
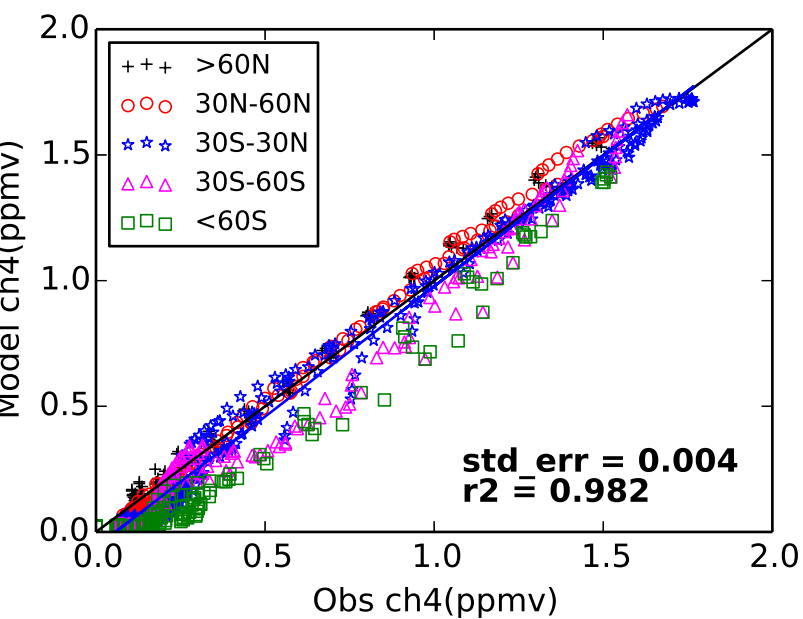
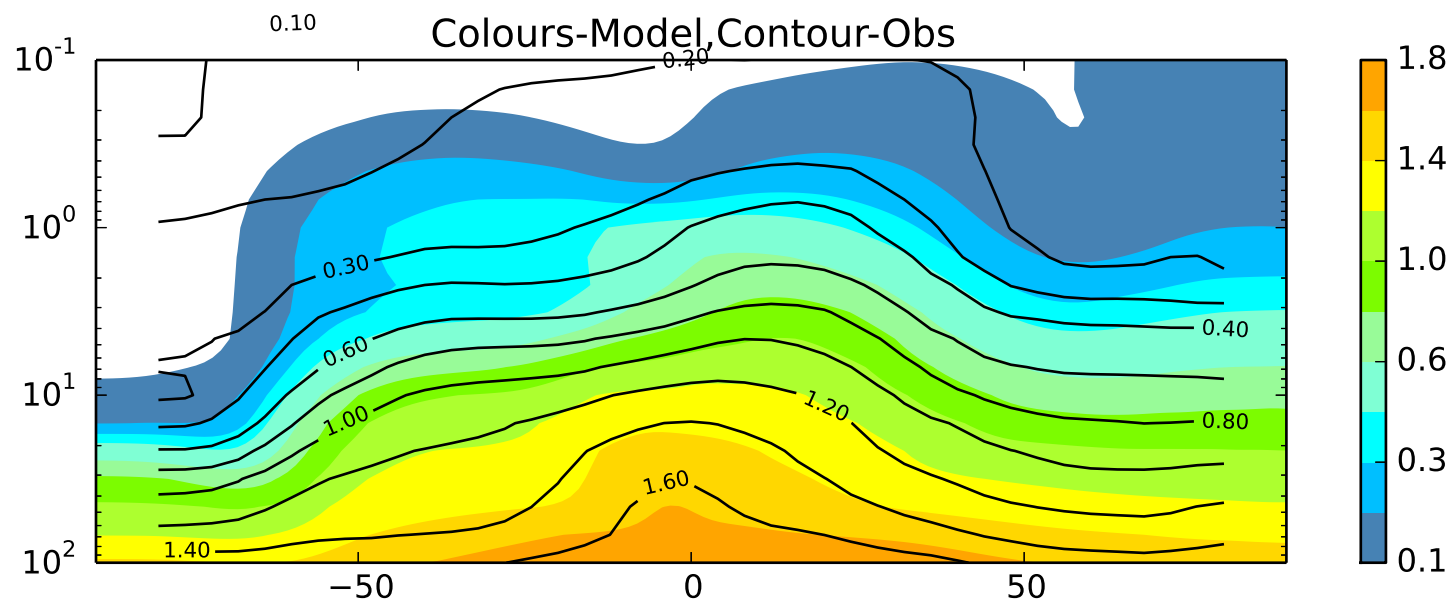




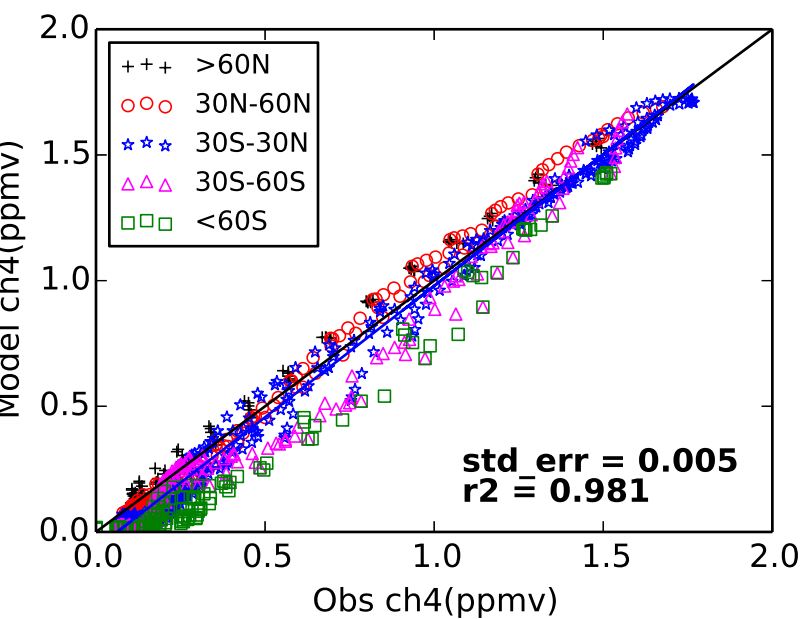
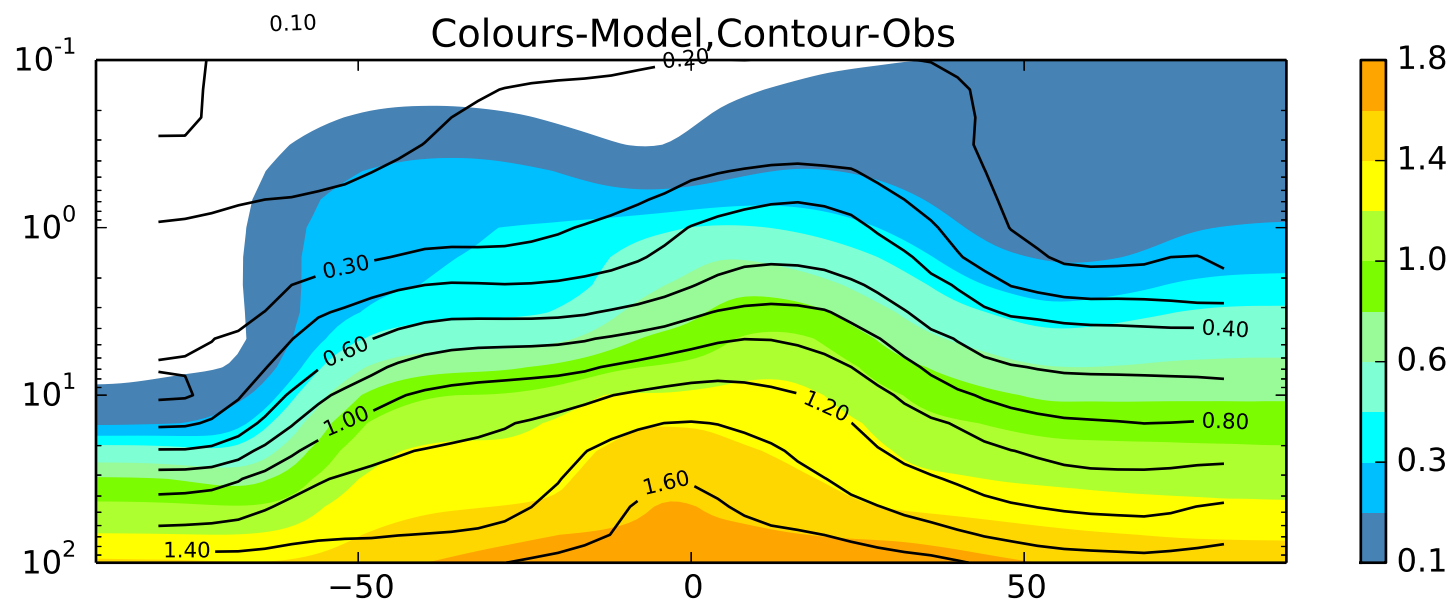
UKCA ac691 vs HALOE:
CH4 (ppmv) Jan



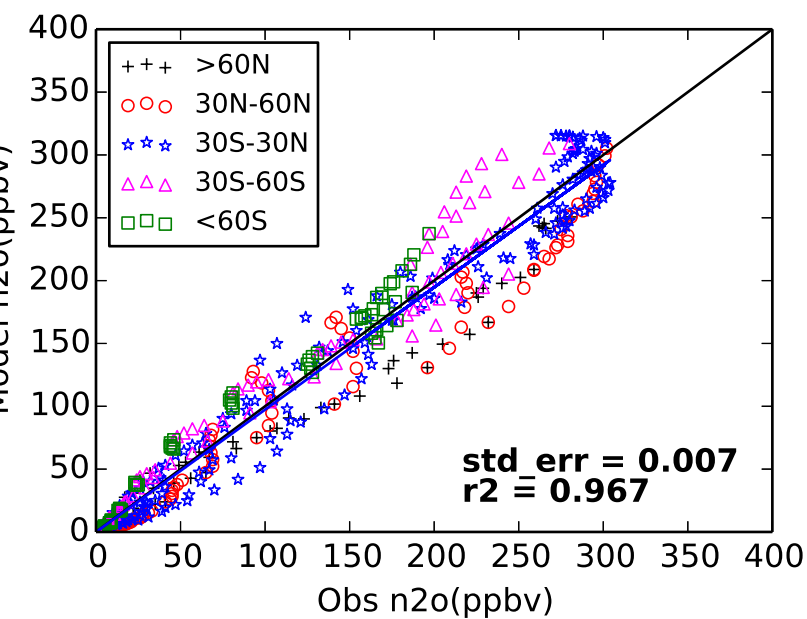
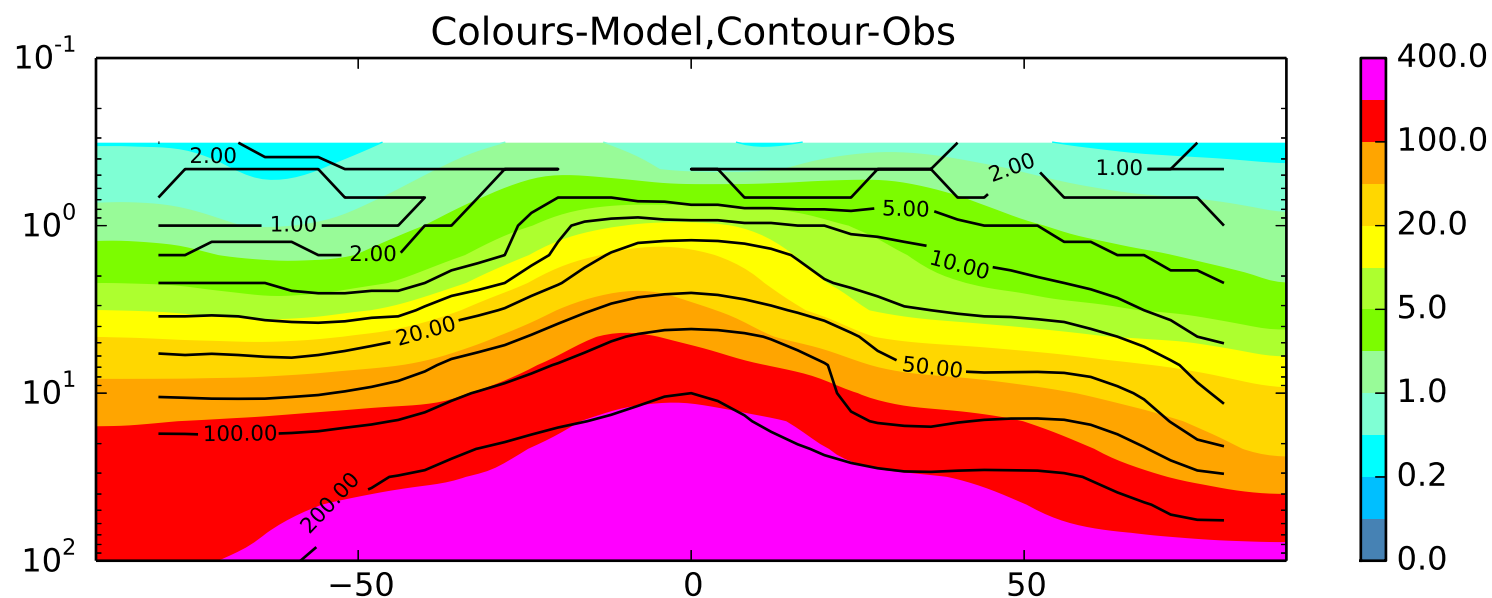
UKCA aj670 vs HALOE:
CH4 (ppmv) Jan



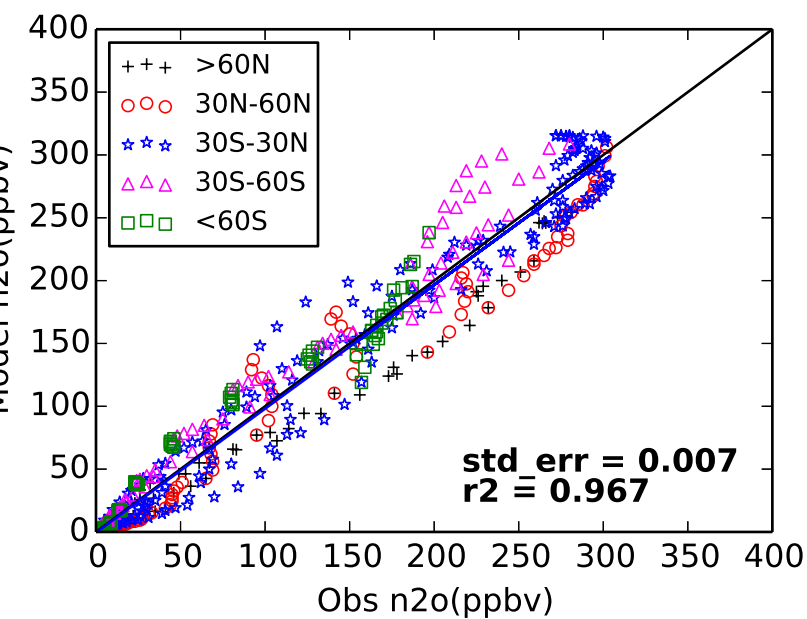
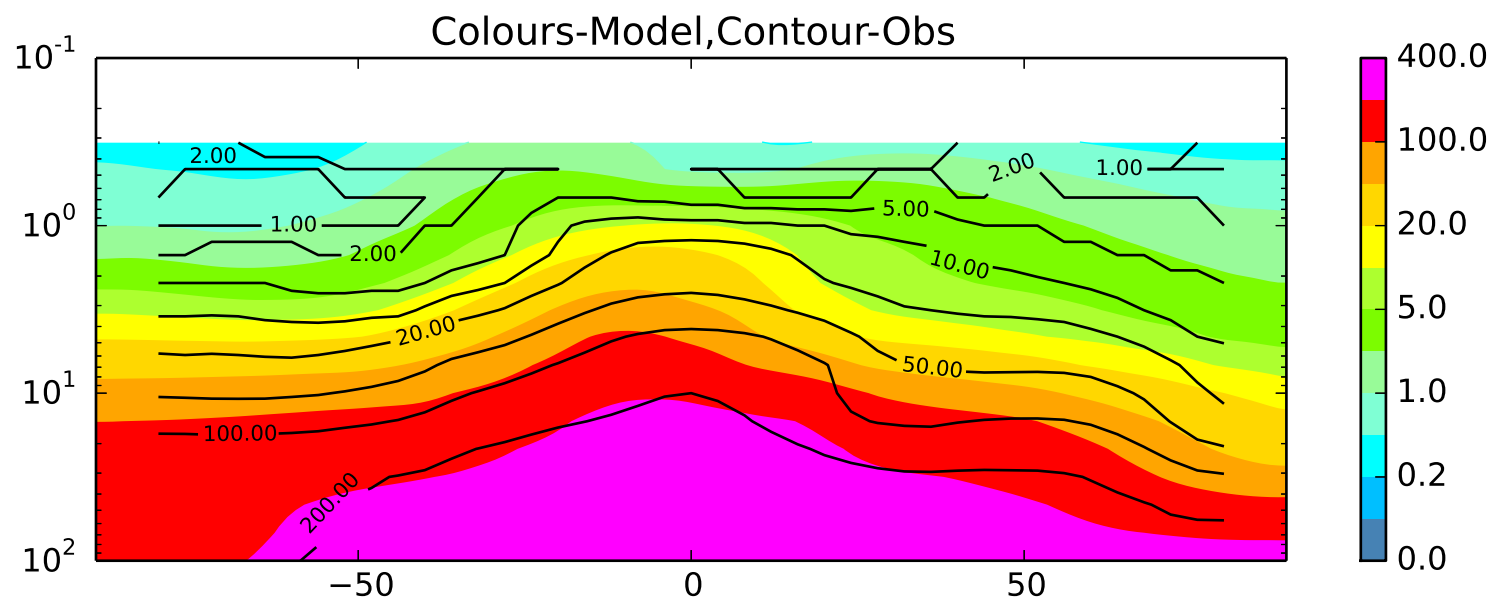
UKCA ac691 vs HALOE:
CH4 (ppmv) Jul



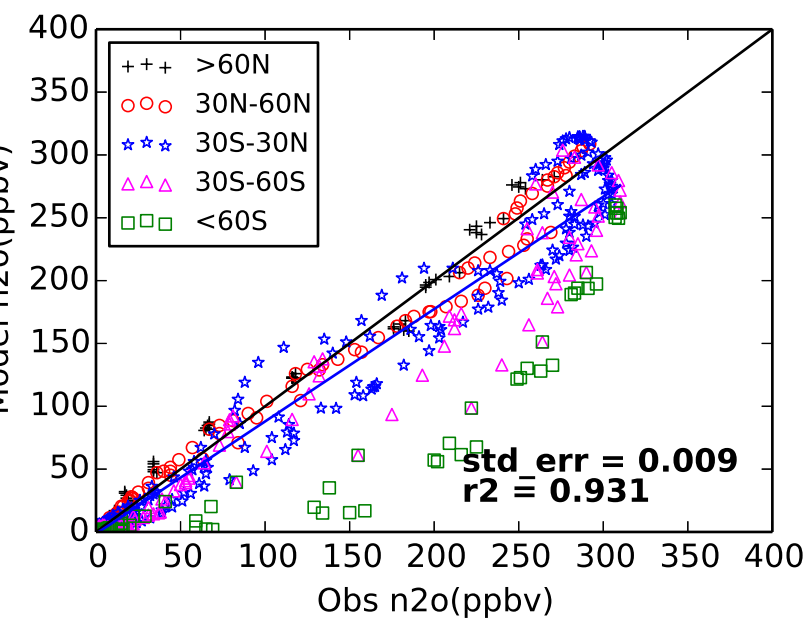
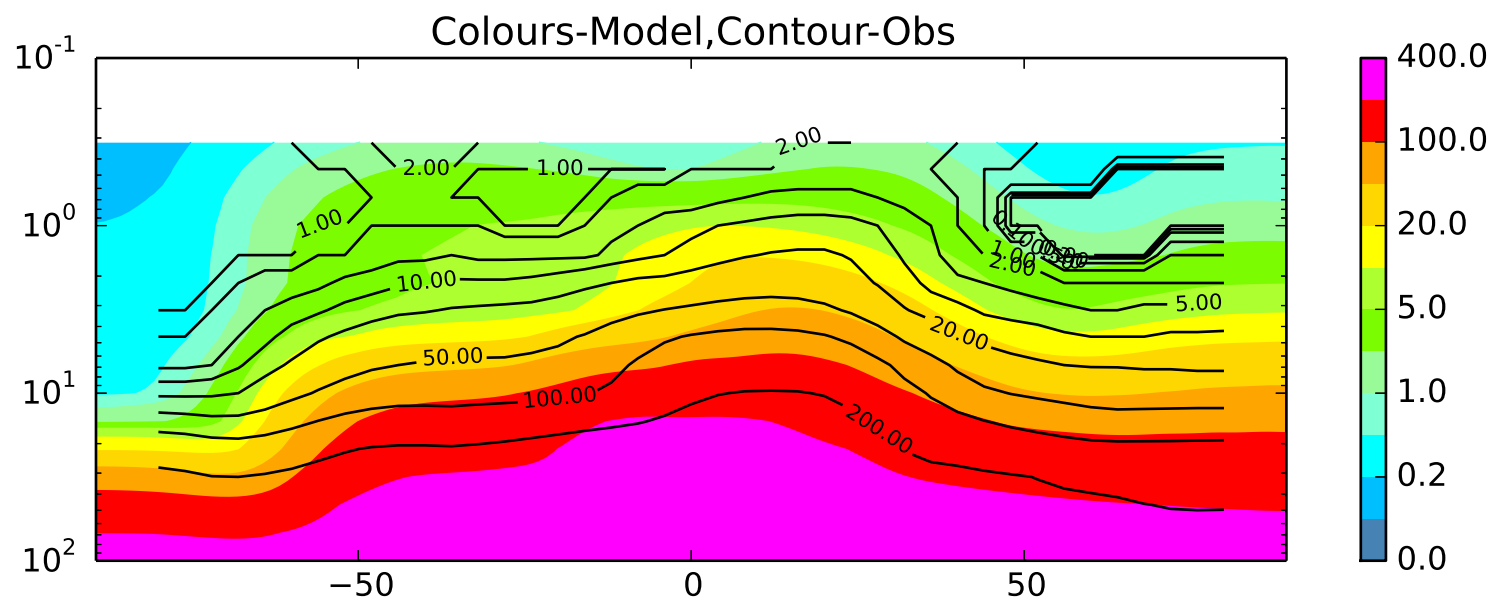
UKCA aj670 vs HALOE:
CH4 (ppmv) Jul



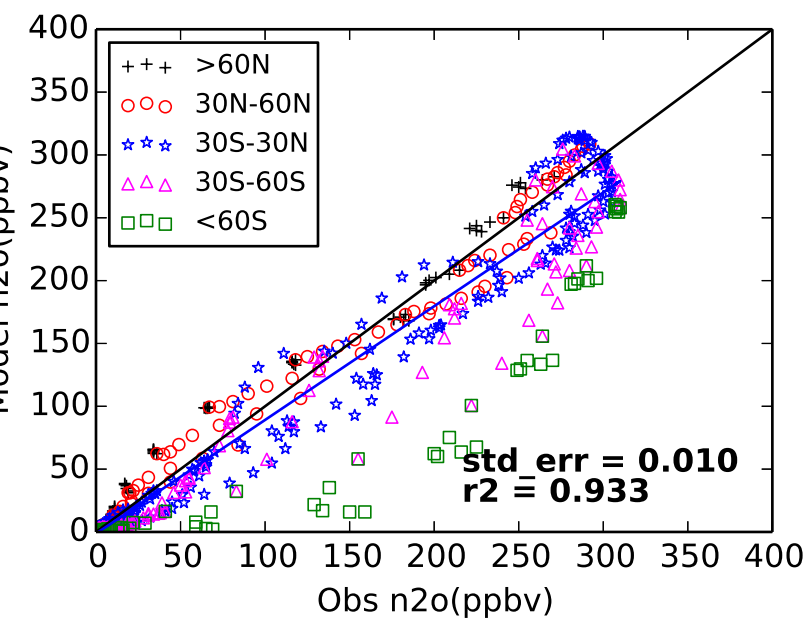
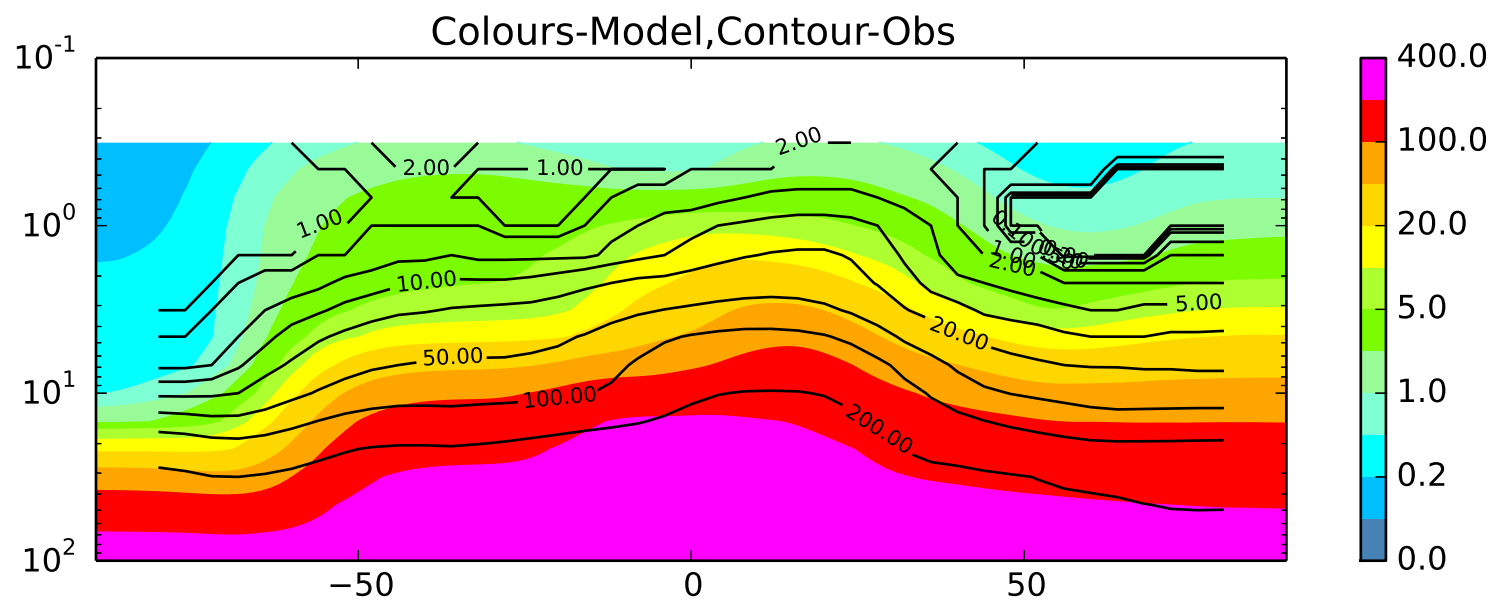
UKCA ac691 vs HALOE:
N2O (ppmv) Jan



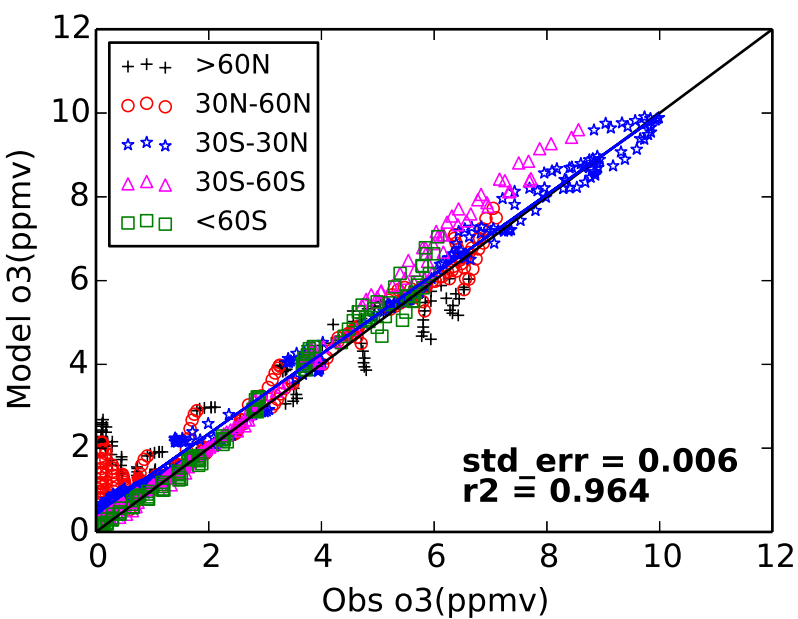
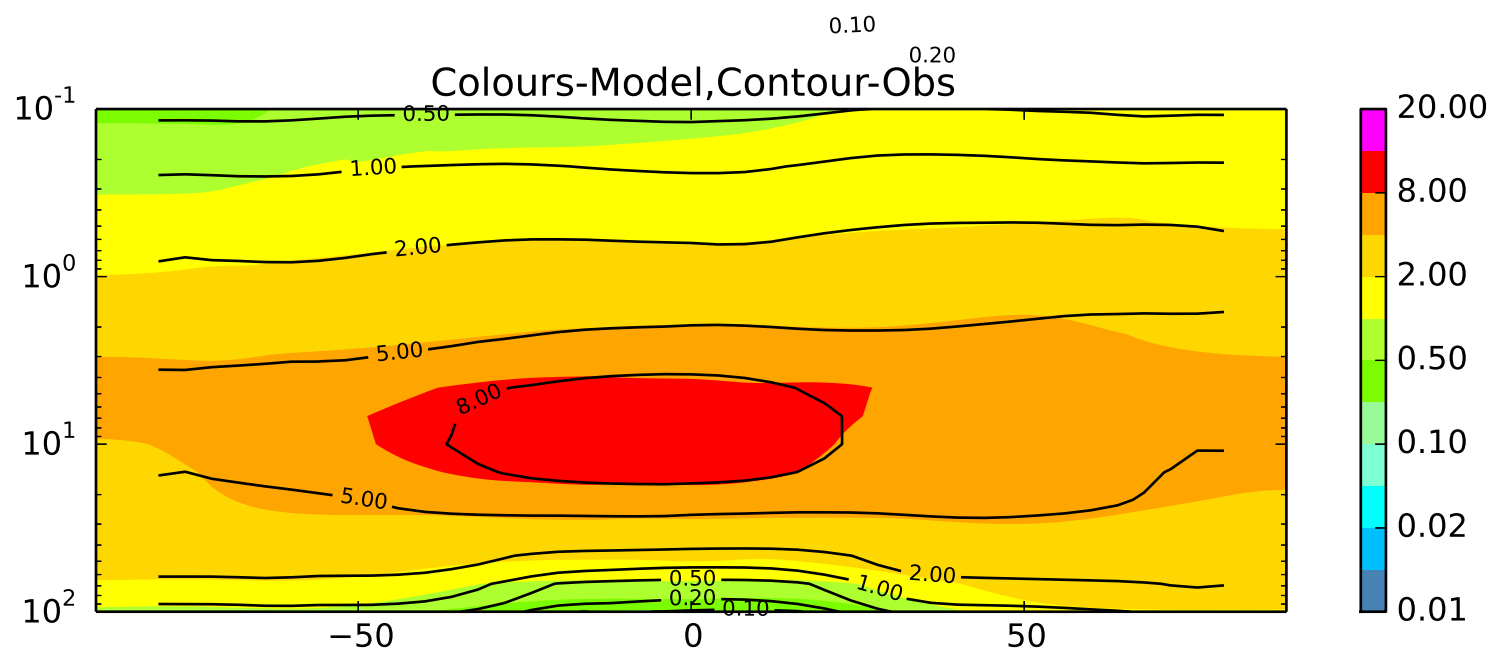
UKCA aj670 vs HALOE:
N2O (ppmv) Jan



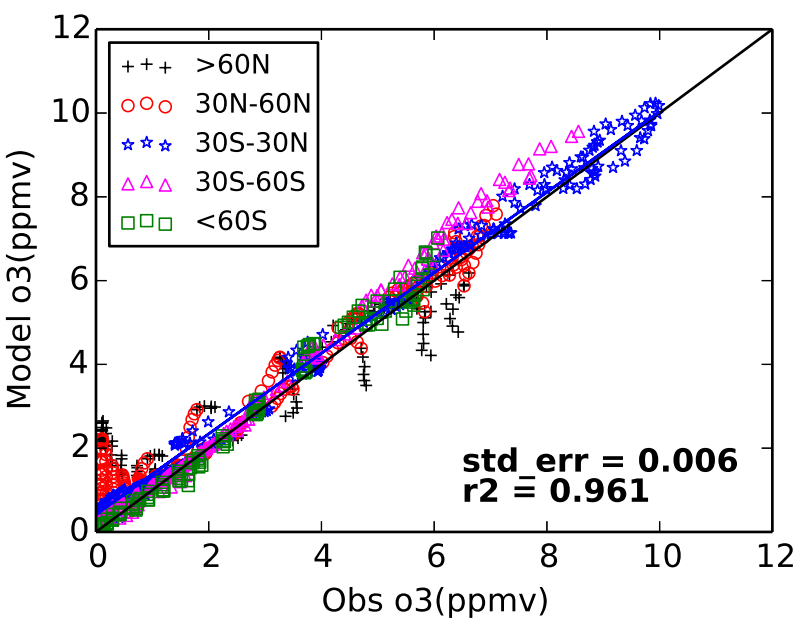
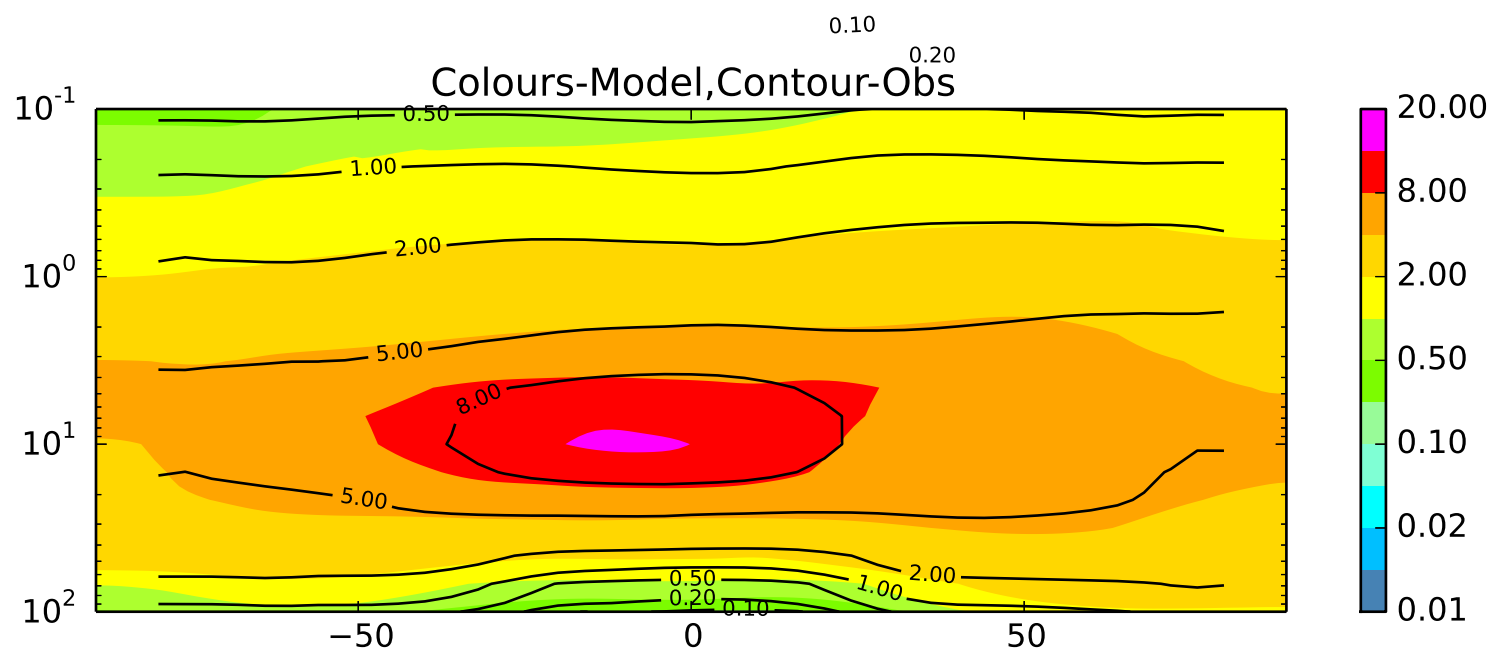
UKCA ac691 vs HALOE:
N2O (ppmv) Jul



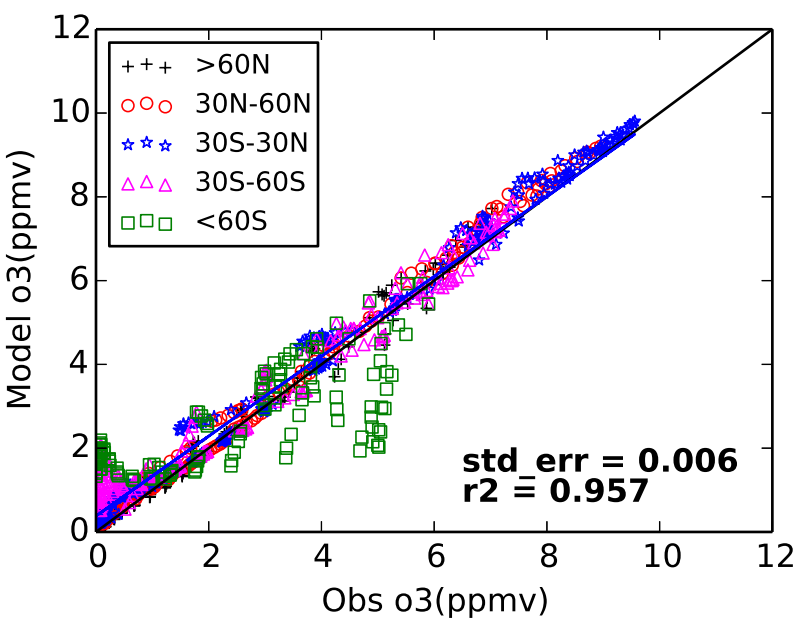
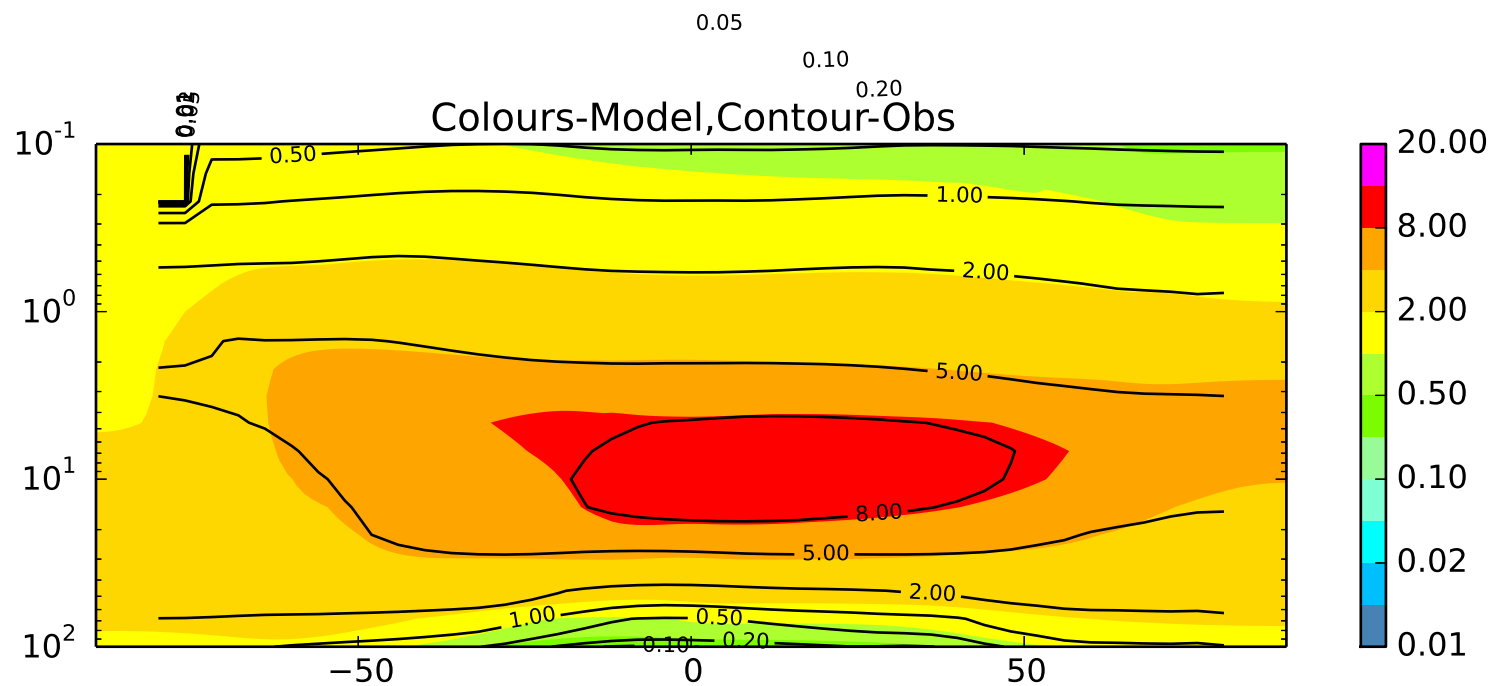
UKCA aj670 vs HALOE:
N2O (ppmv) Jul



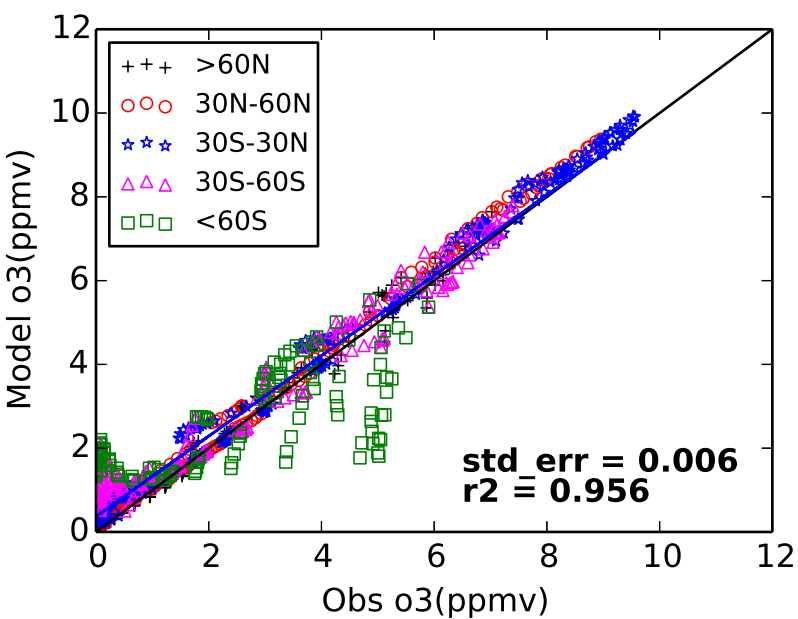
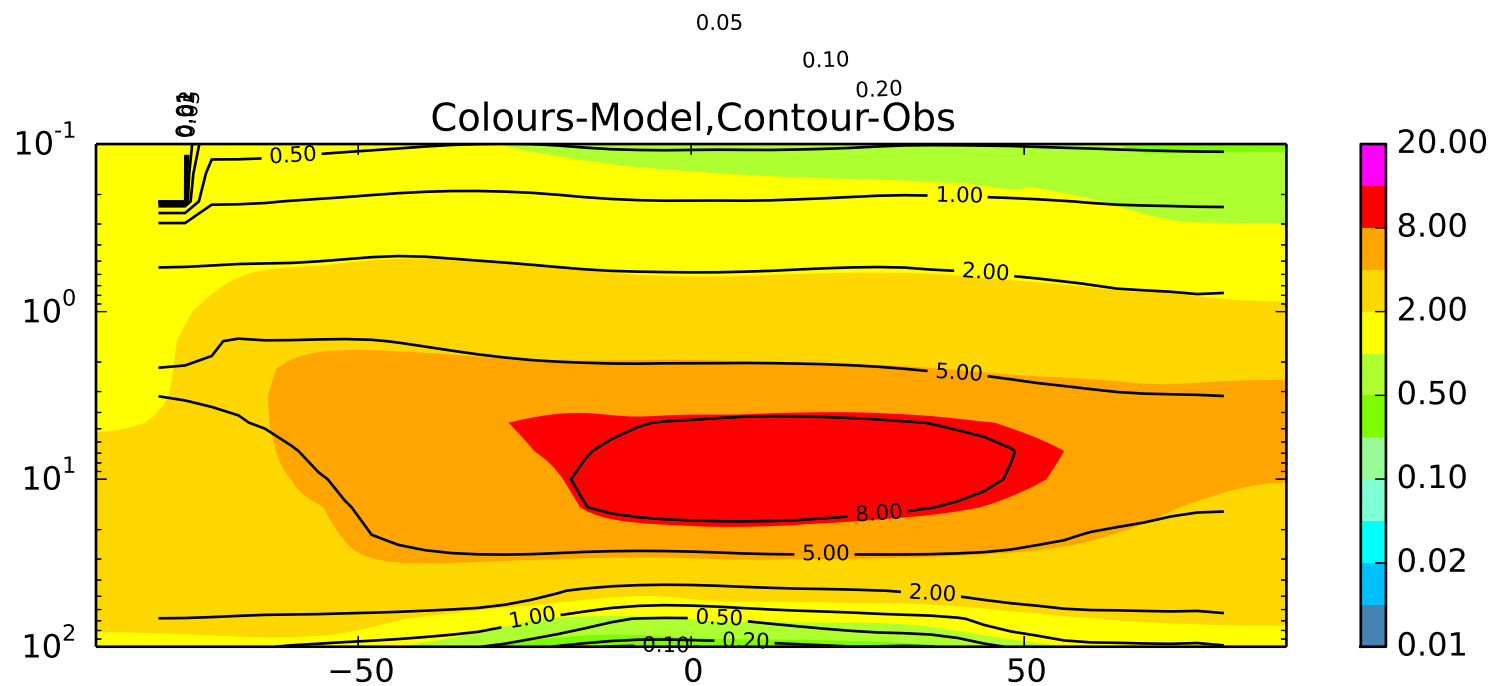
UKCA ac691 vs HALOE:
O3 (ppmv) Jan



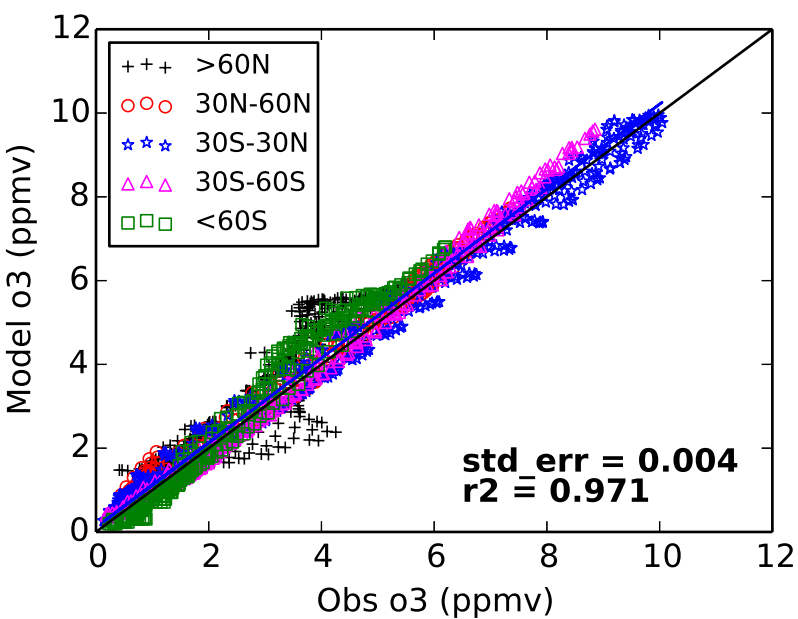
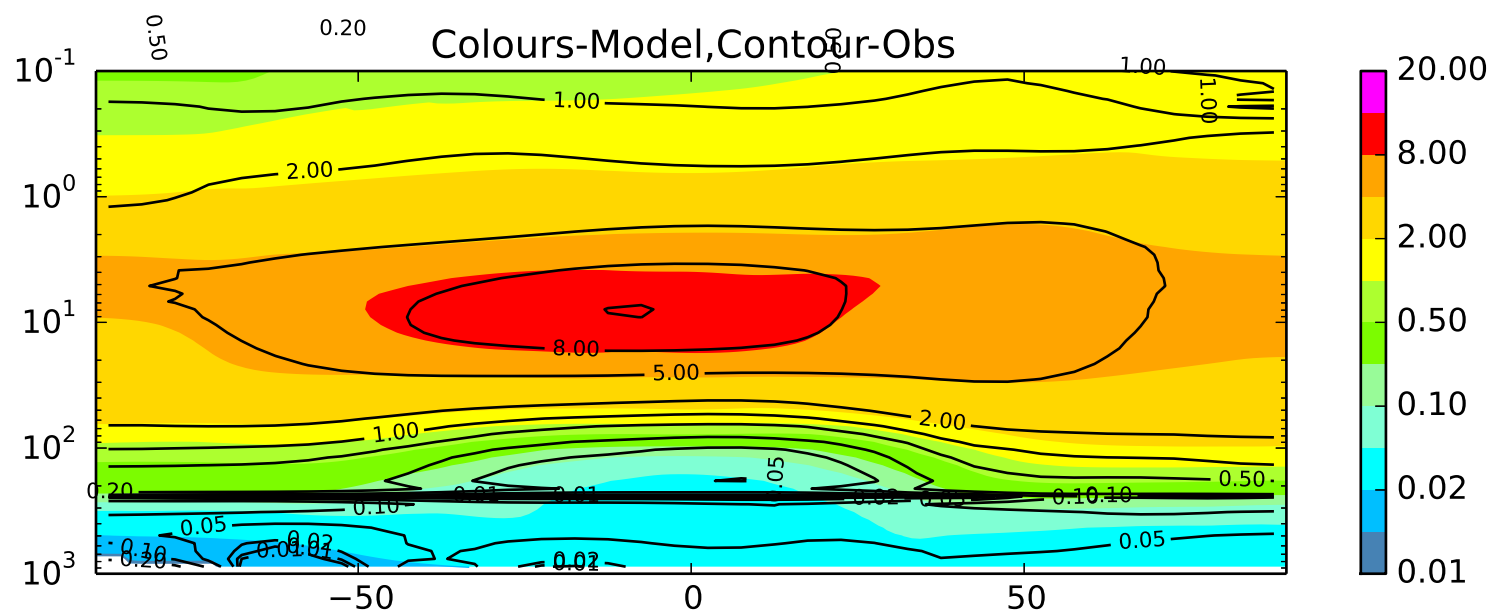
UKCA aj670 vs HALOE:
O3 (ppmv) Jan



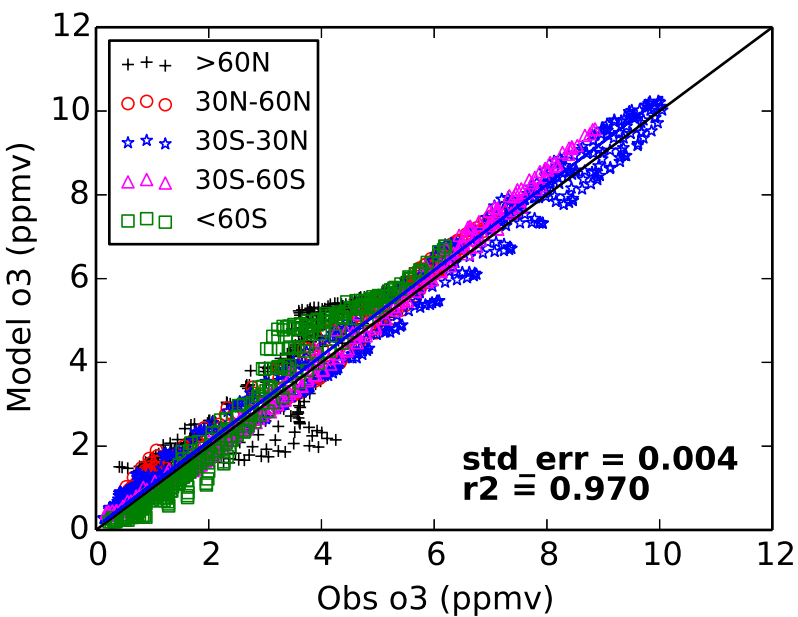
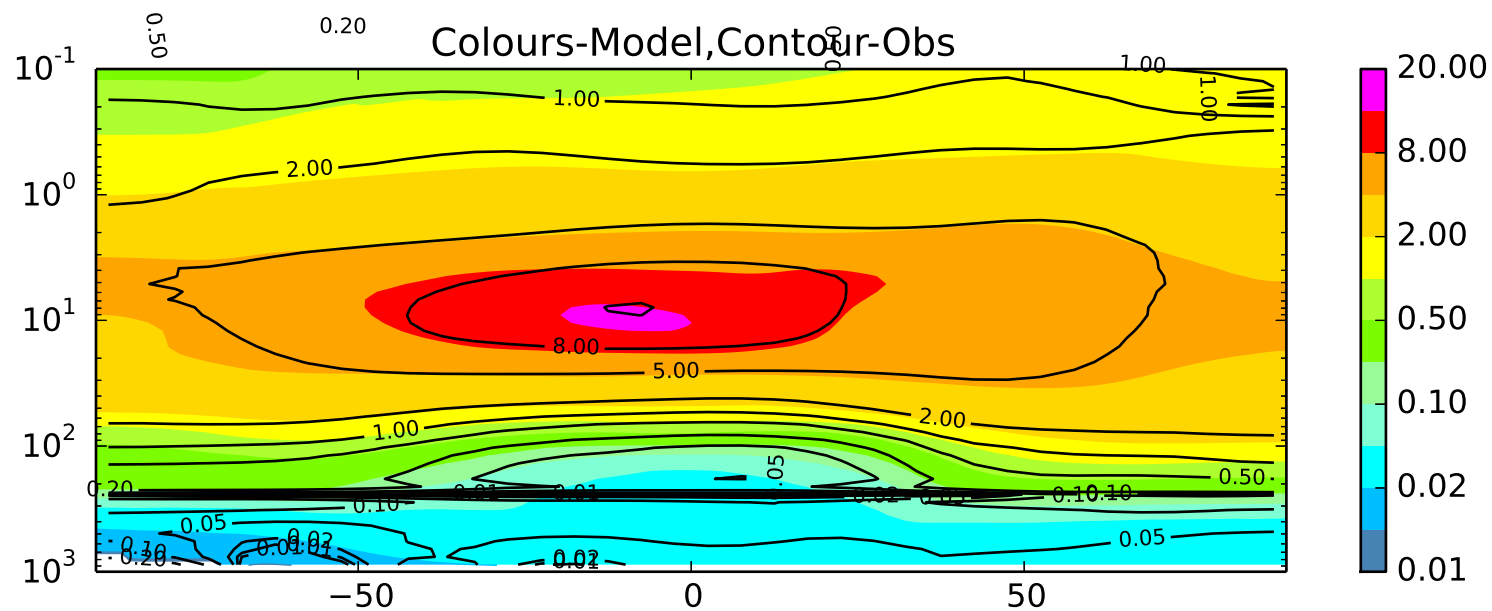
UKCA ac691 vs HALOE:
O3 (ppmv) Jul



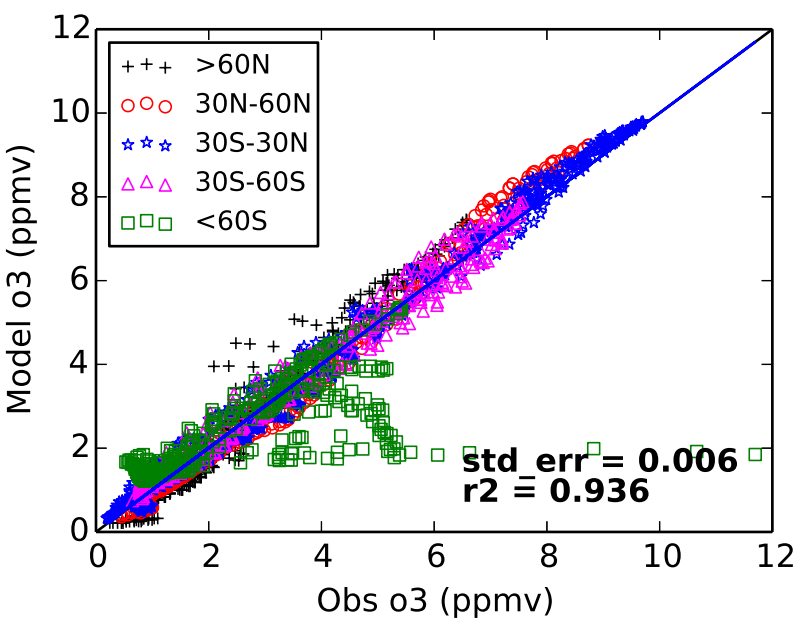
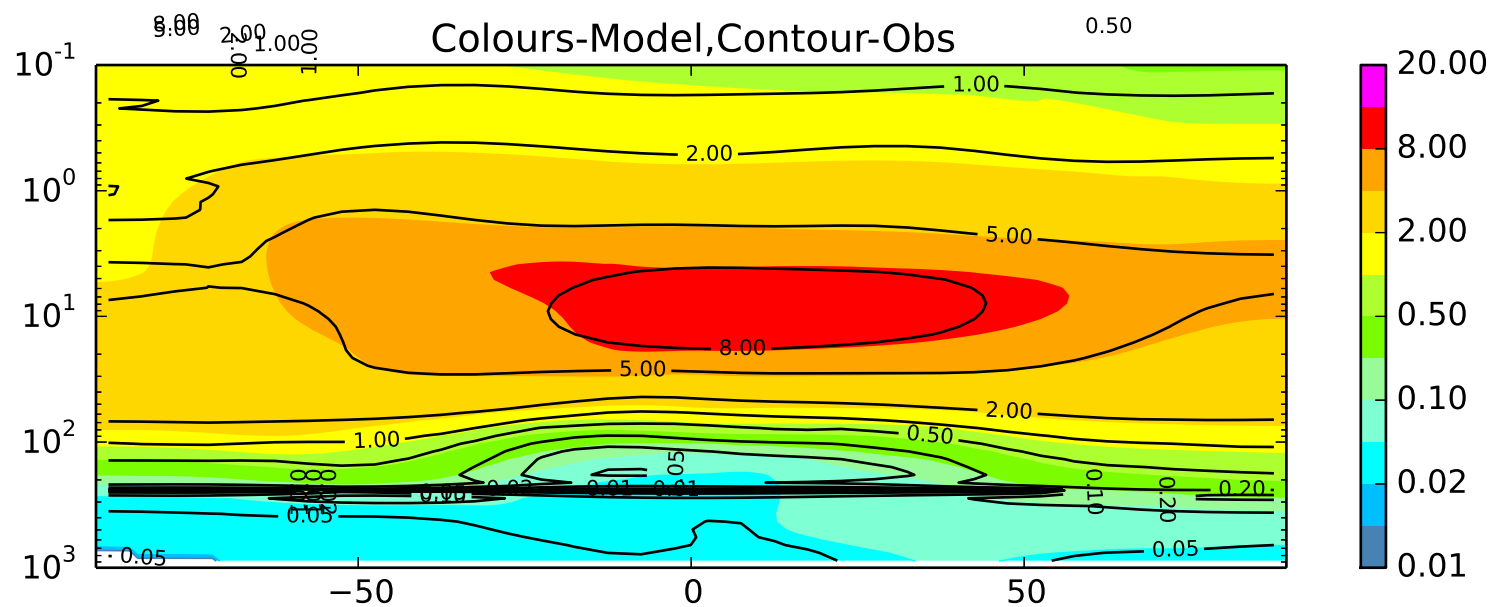
UKCA aj670 vs HALOE:
 O3 (ppmv) Jul



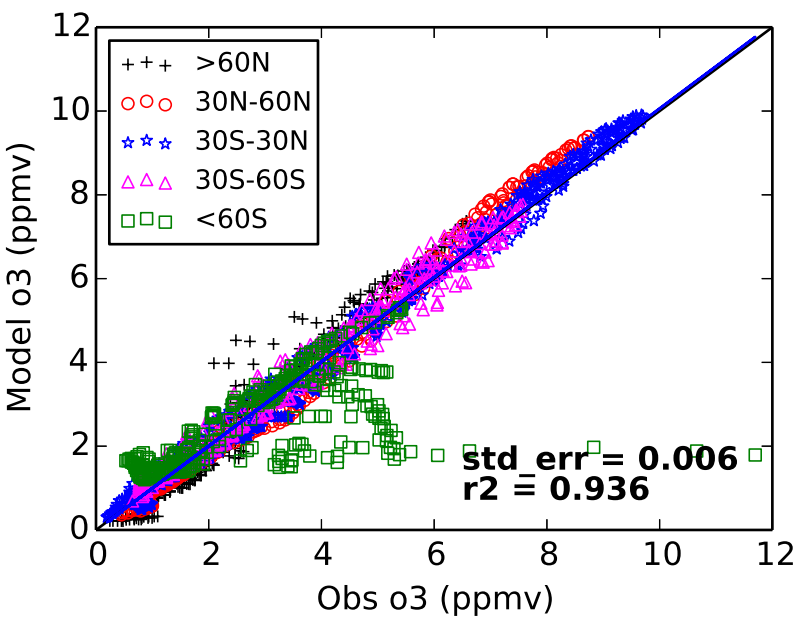
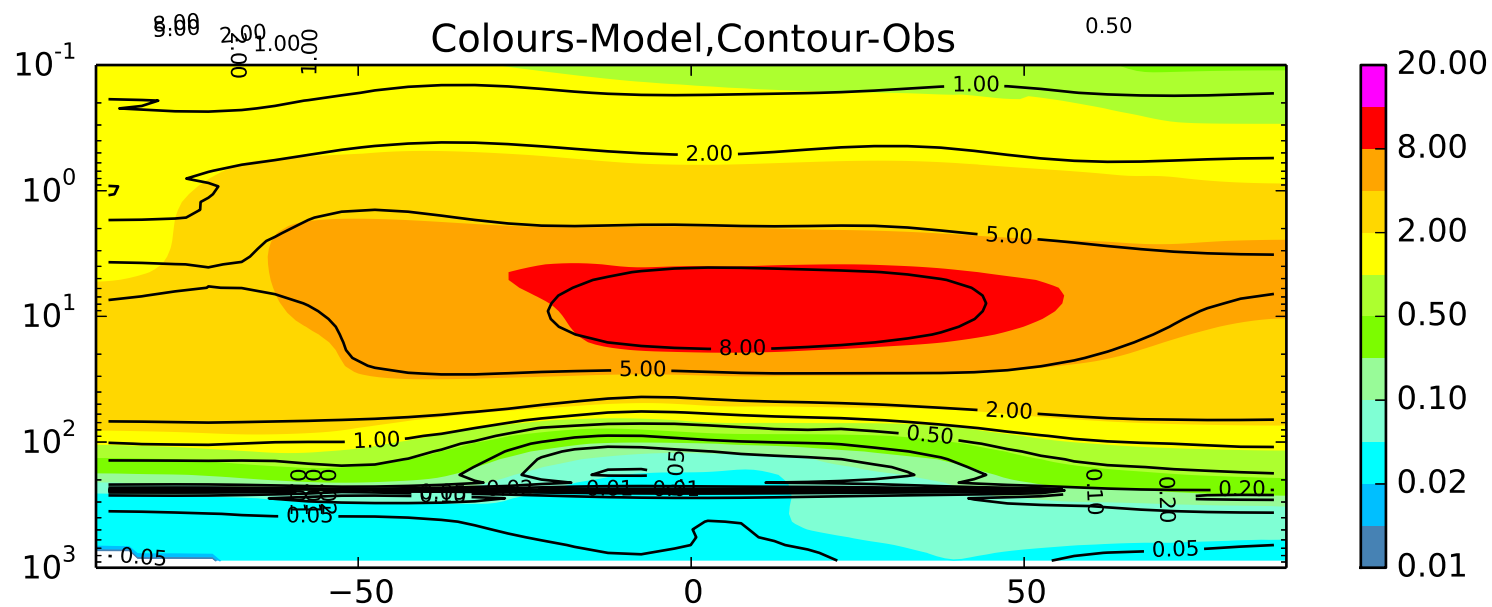
UKCA ac691 vs NIWA-CCMVal:
O3 (ppmv) Jan



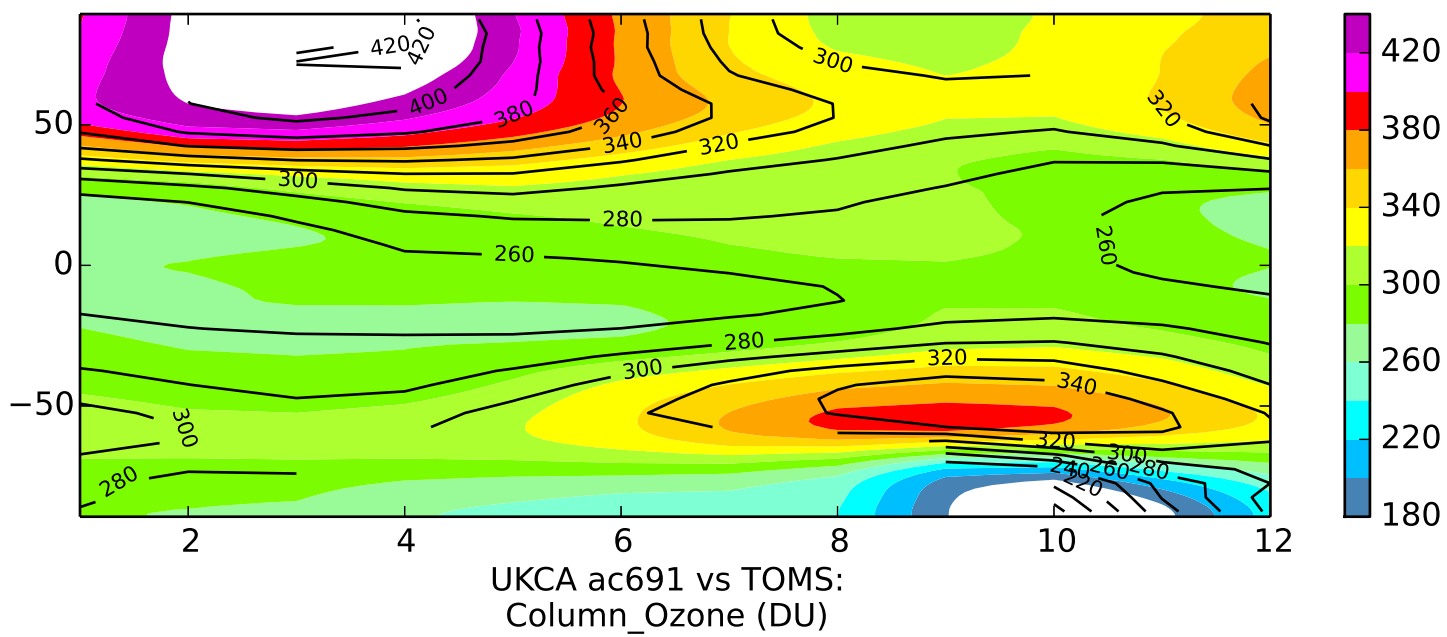
UKCA aj670 vs NIWA-CCMVal:
O3 (ppmv) Jan

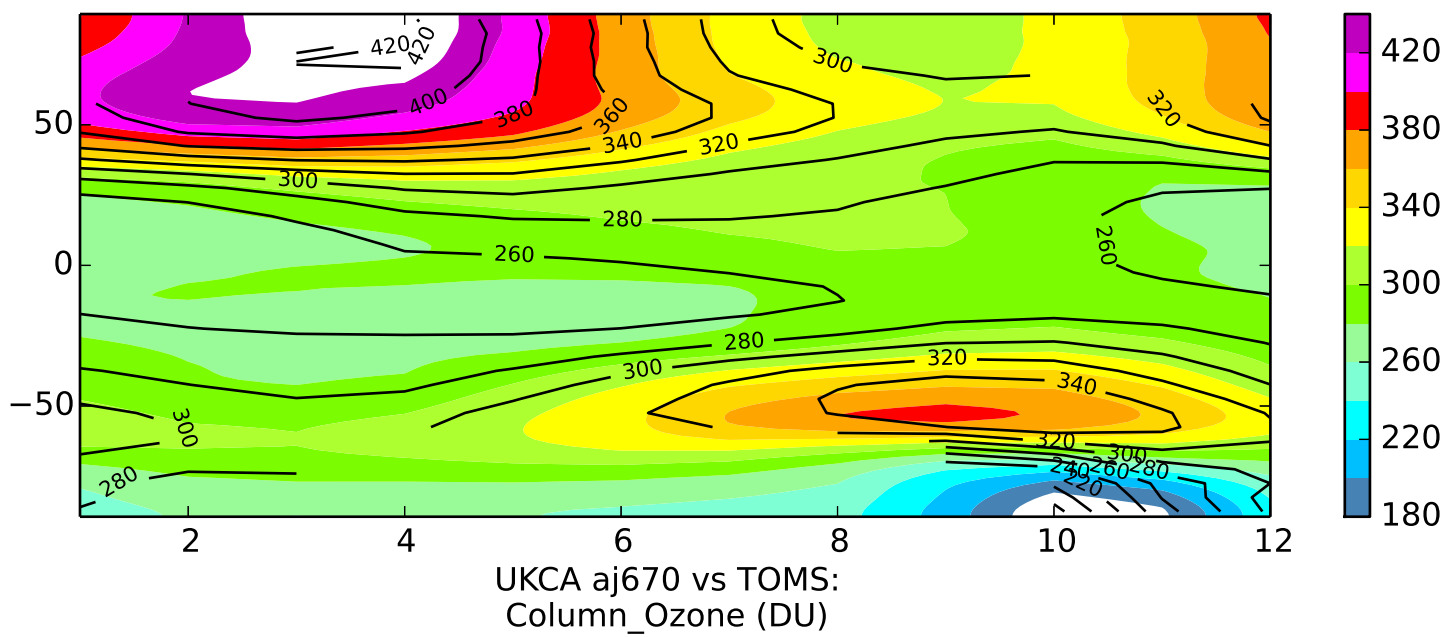


UKCA ac691 vs NIWA-CCMVal:
O3 (ppmv) Jul

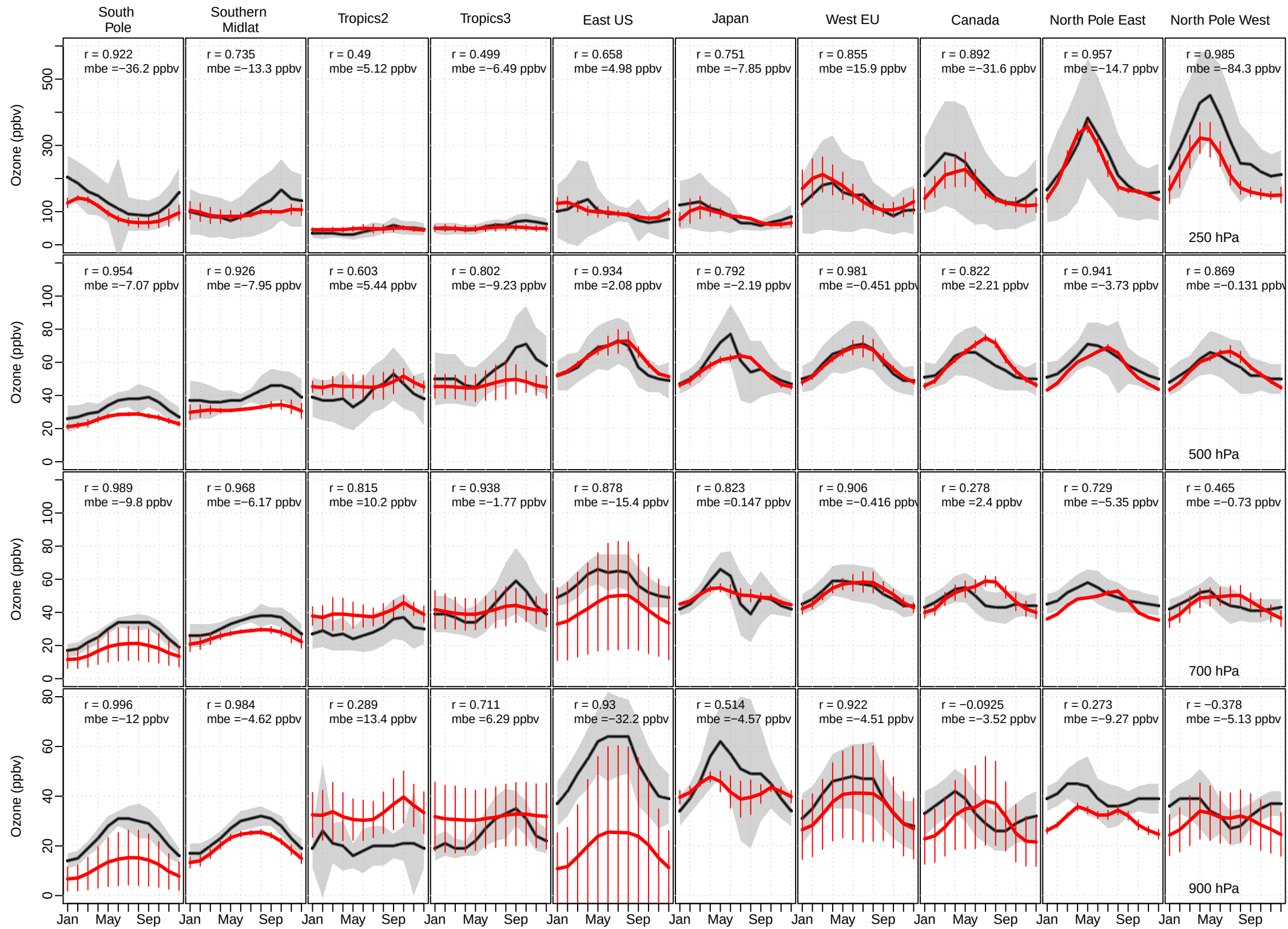


UKCA aj670 vs NIWA-CCMVal:
O3 (ppmv) Jul

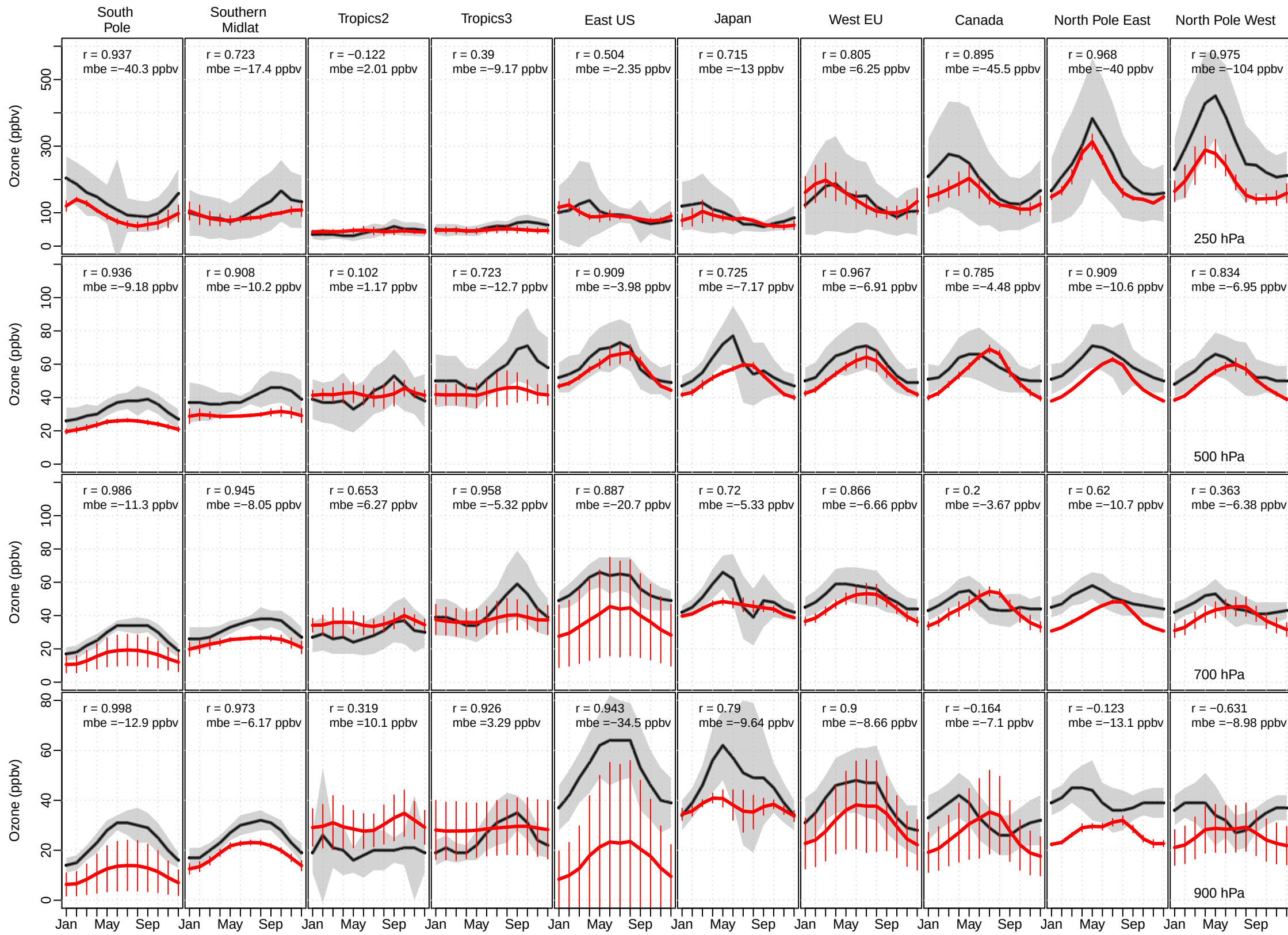




ac691 Tilmes ozone sonde comparison

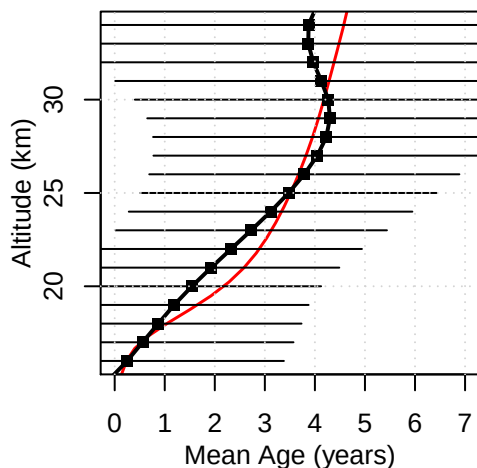


aj670 Tilmes ozone sonde comparison

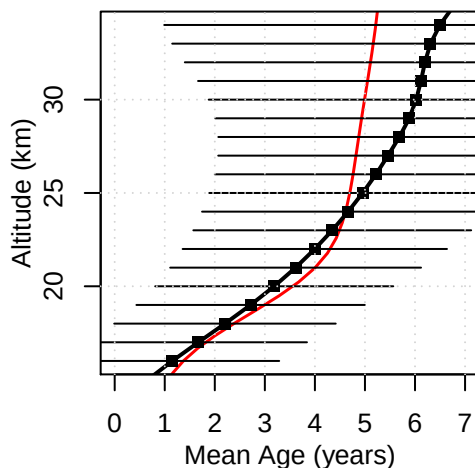


UKCA ac691 Mean Age of Air

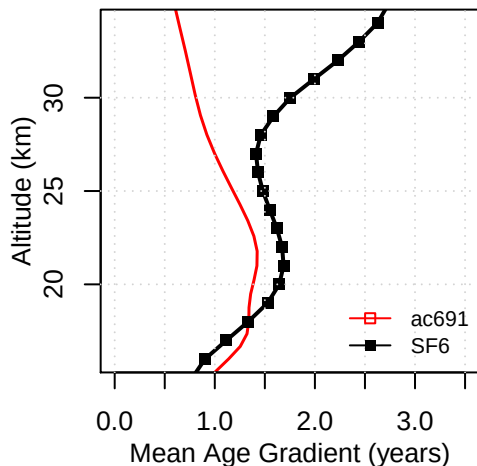
Tropical Mean Age Profile



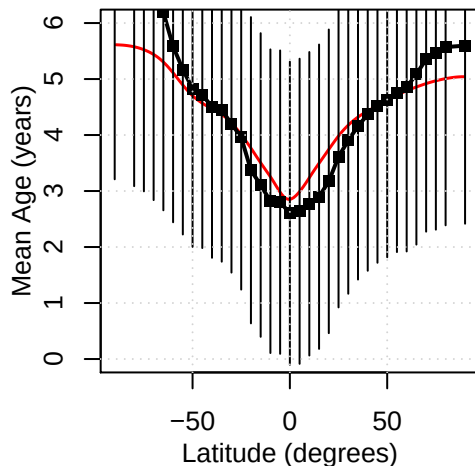
Midlatitude Mean Age Profile



Trop-Midlat Mean Age Gradient Prof

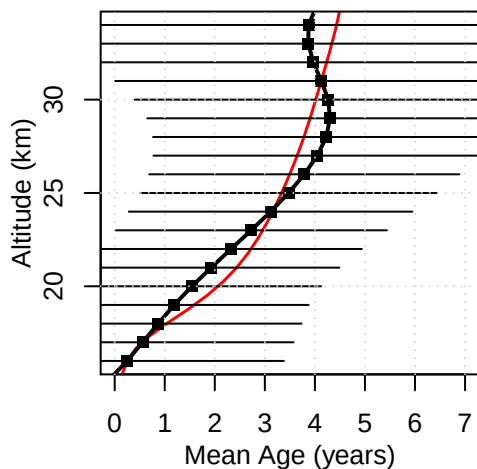


Mean Age, 23km (~50hPa)

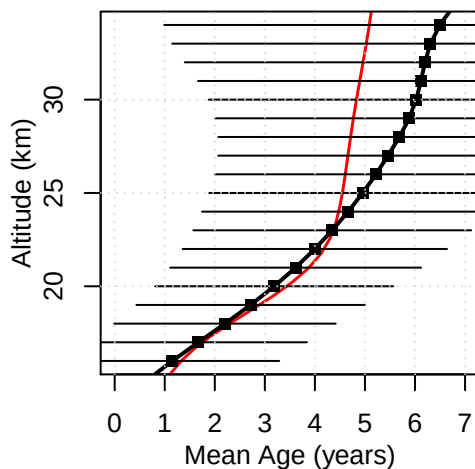


UKCA aj670 Mean Age of Air

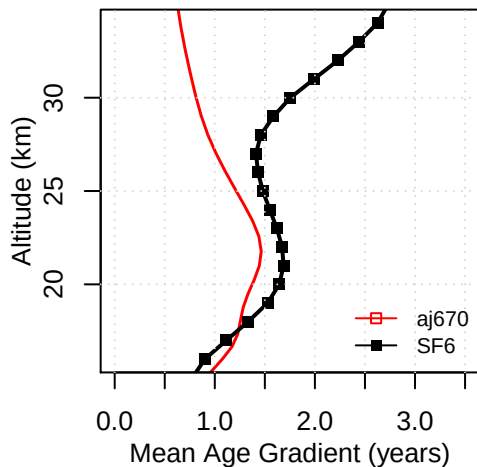
Tropical Mean Age Profile



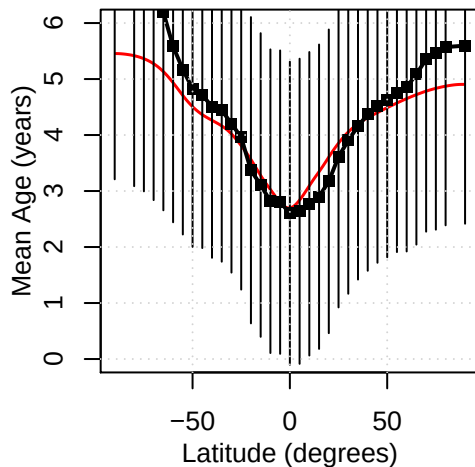
Midlatitude Mean Age Profile



Trop-Midlat Mean Age Gradient Prof

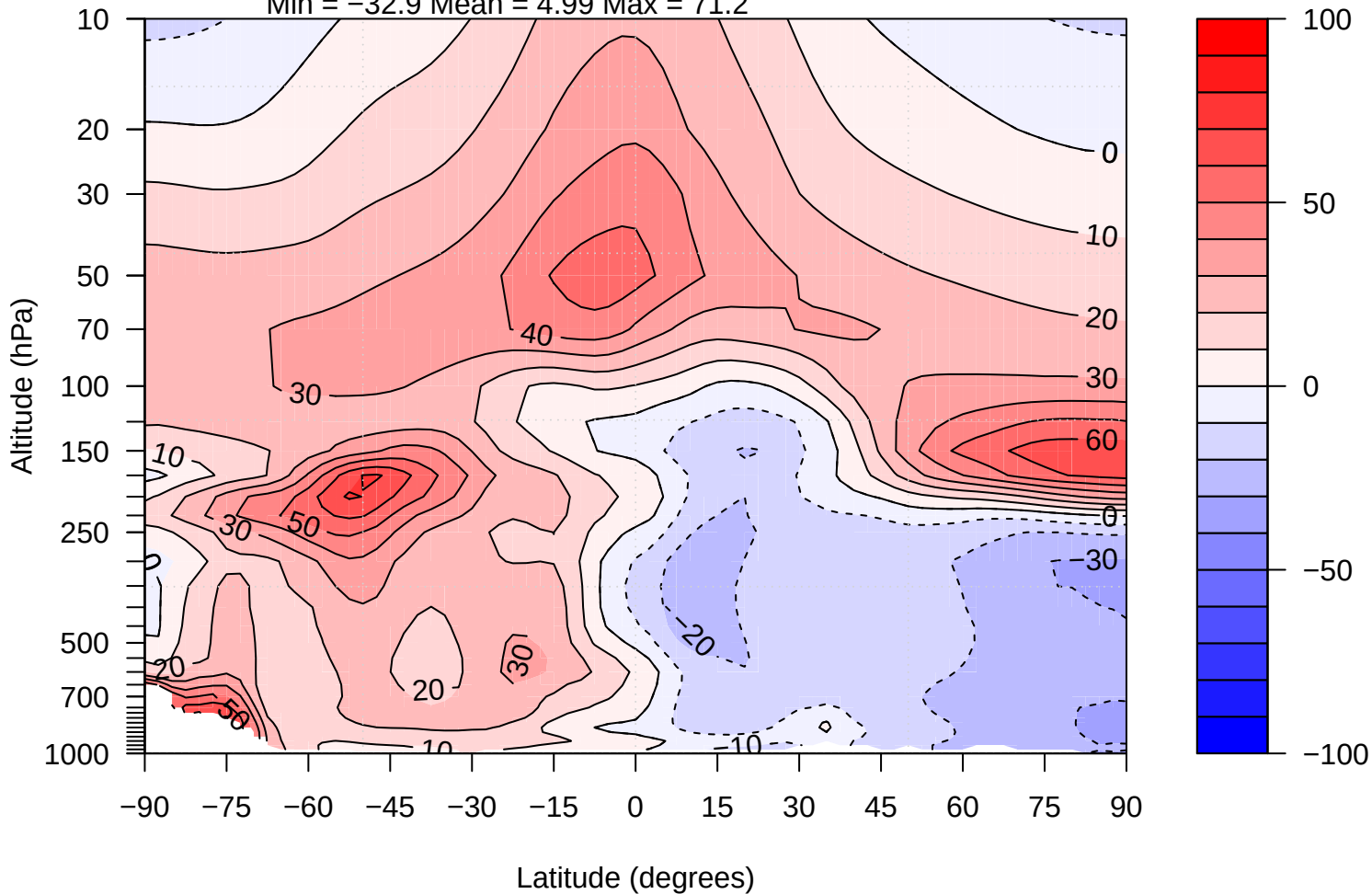


Mean Age, 23km (~50hPa)



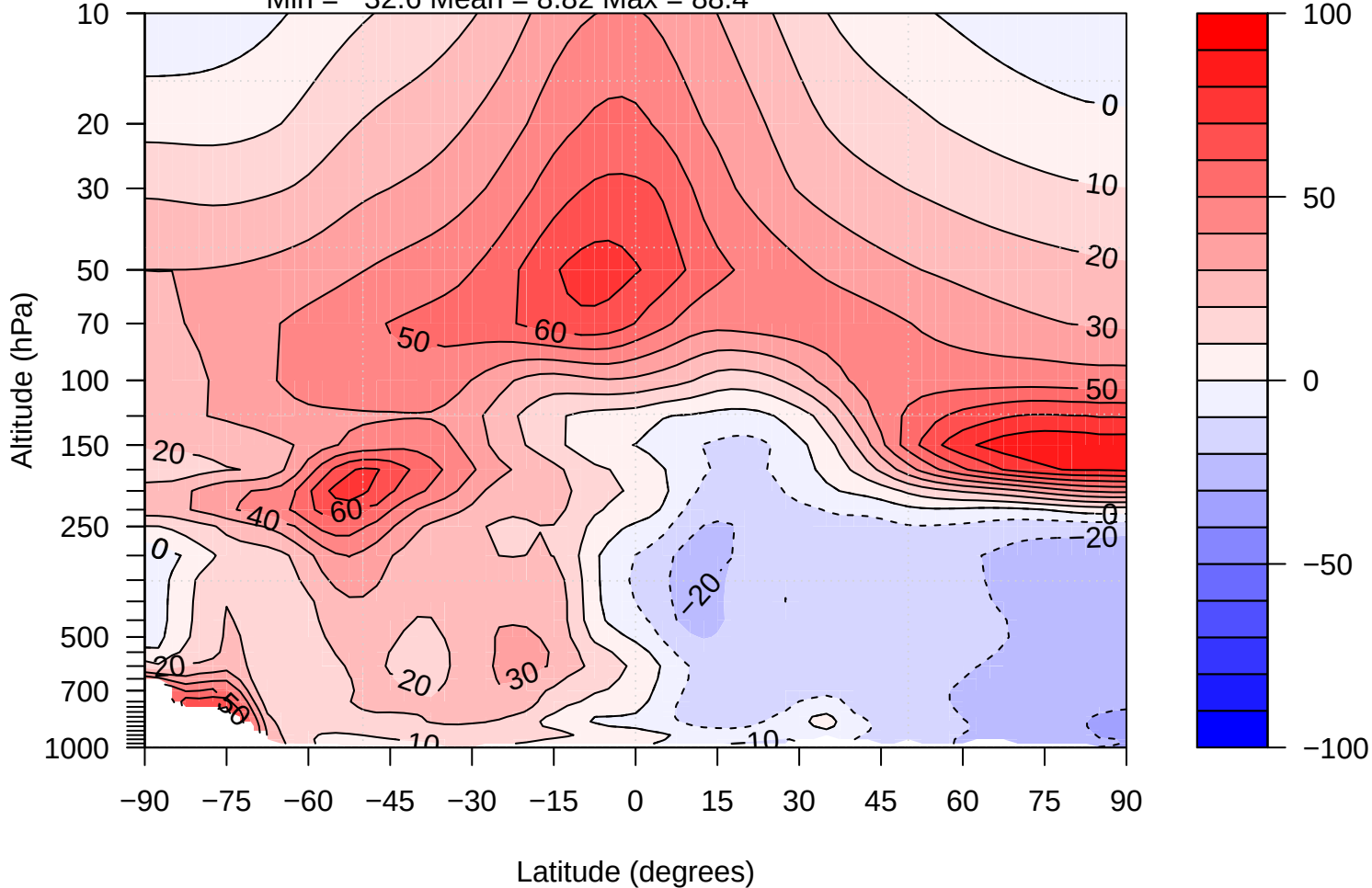
ac691 - ERA Q bias

Min = -32.9 Mean = 4.99 Max = 71.2

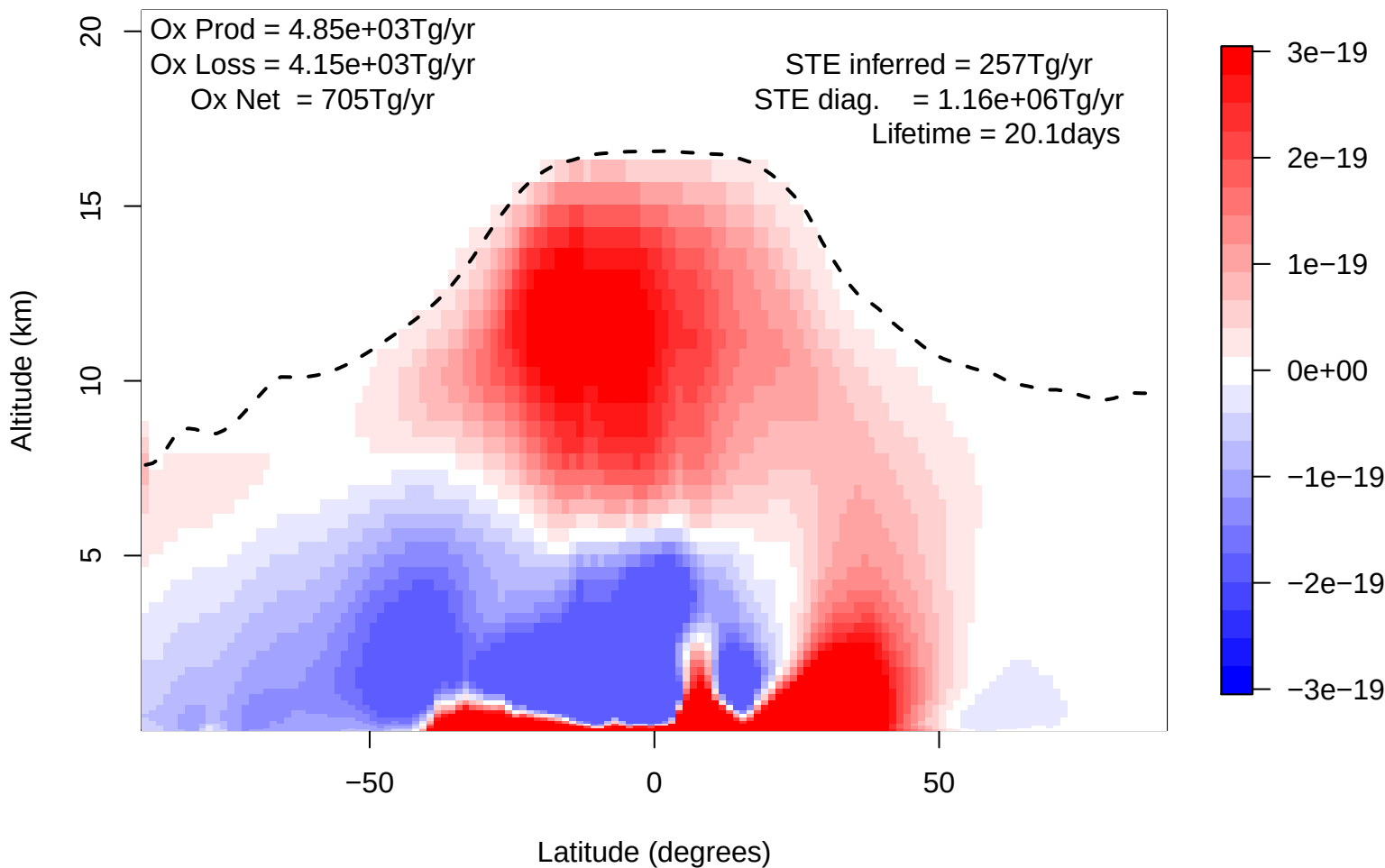


aj670 - ERA Q bias

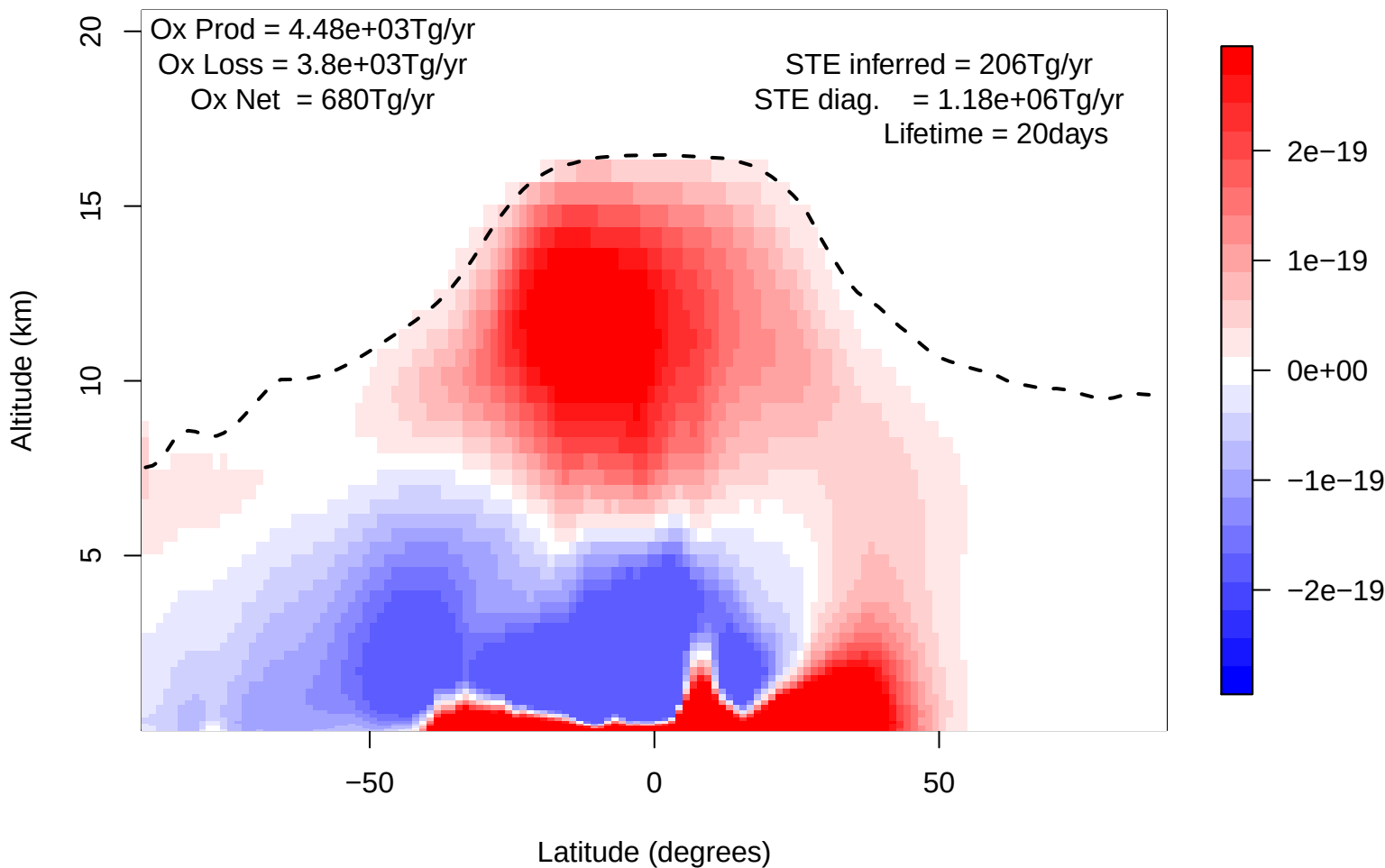
Min = -32.6 Mean = 8.82 Max = 88.4

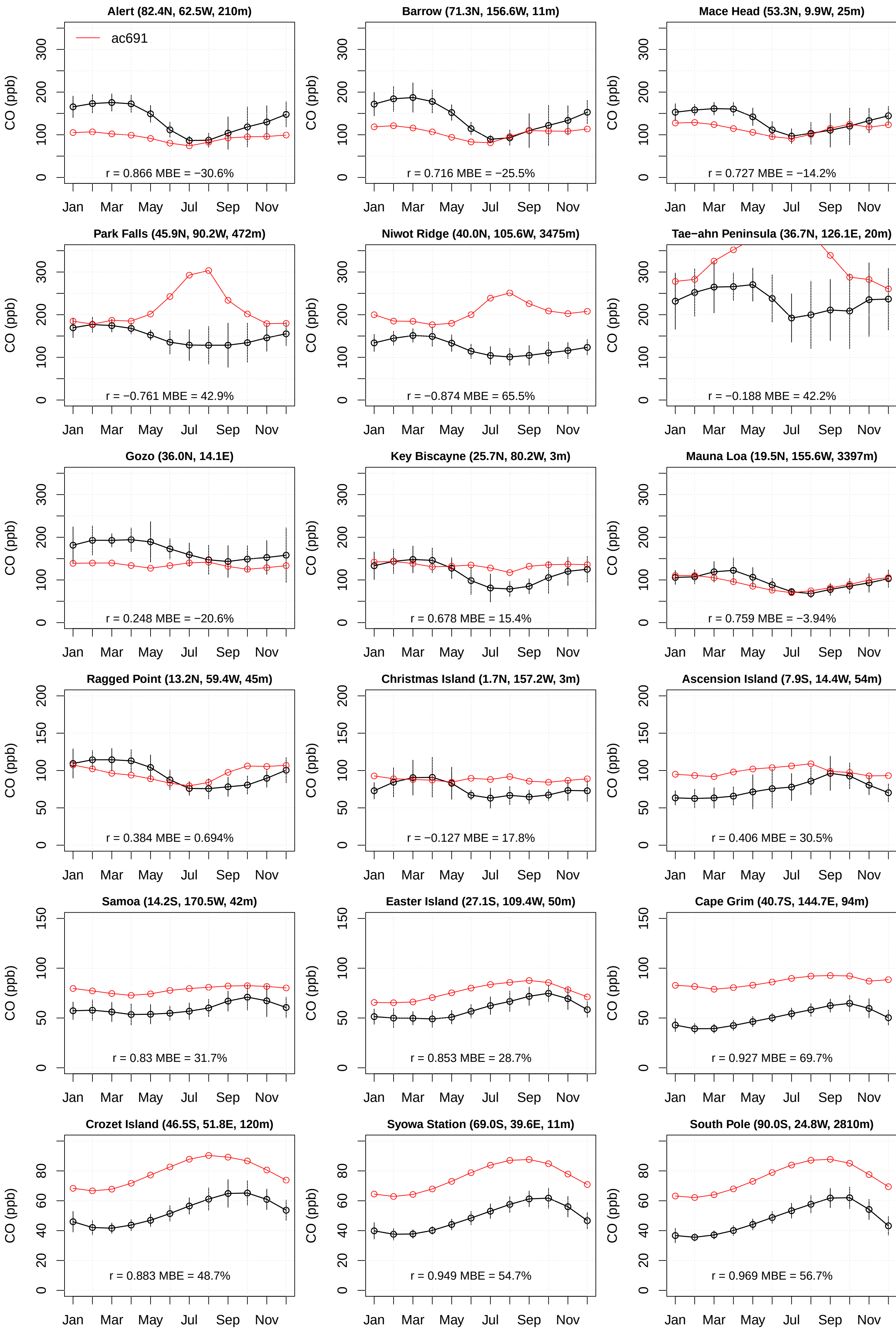


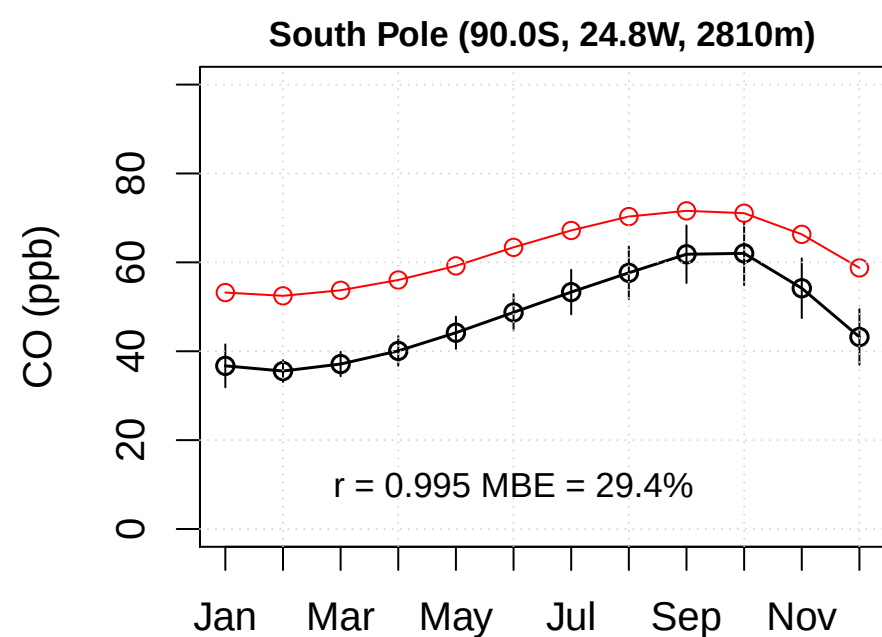
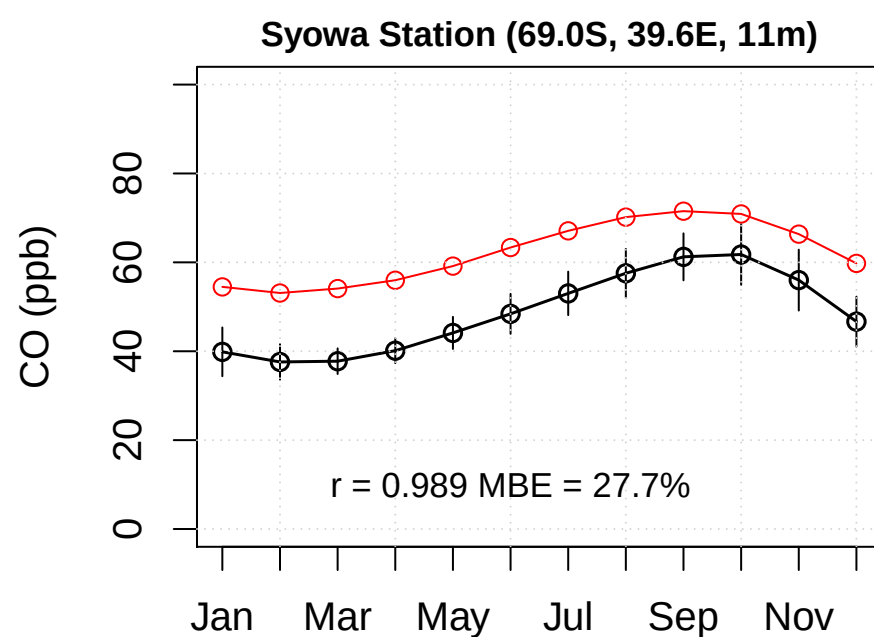
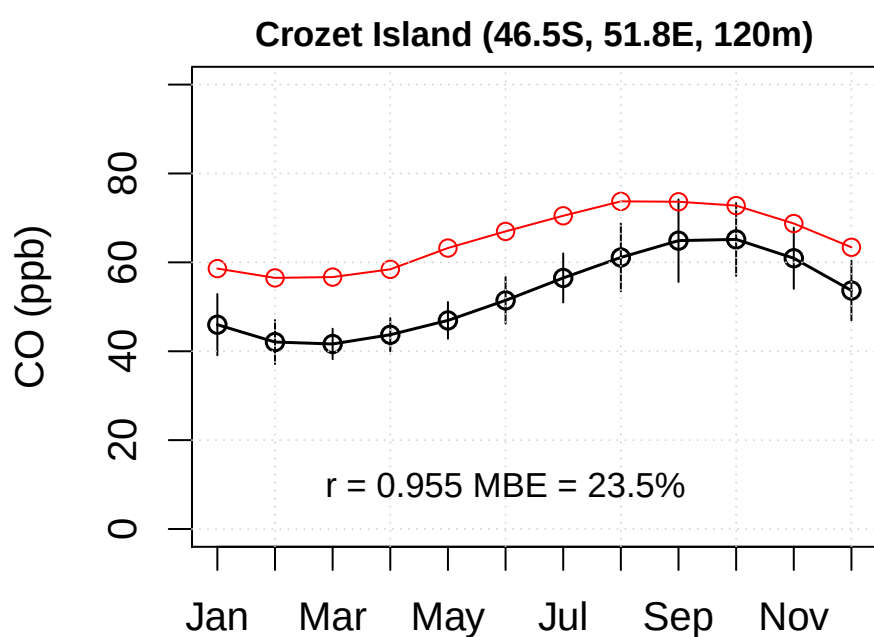
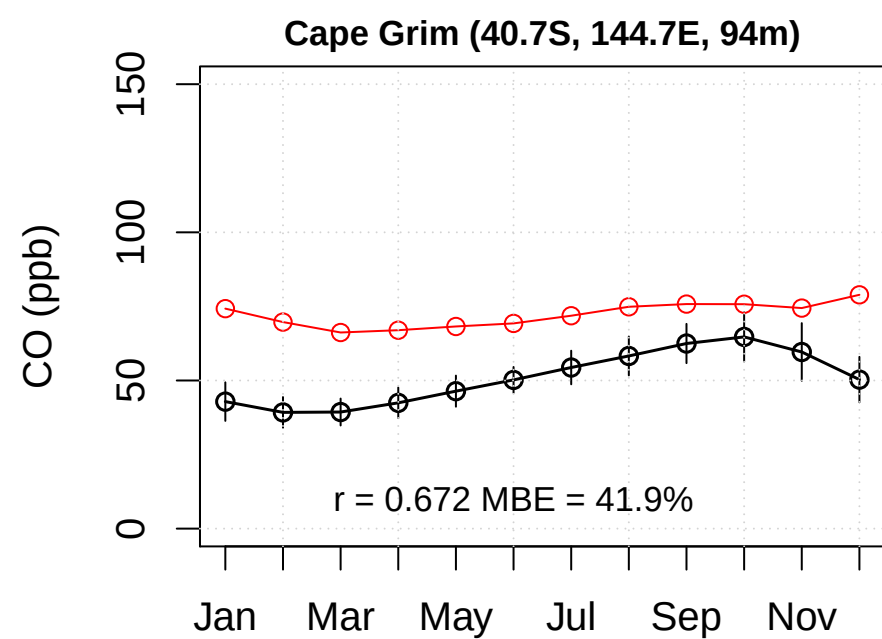
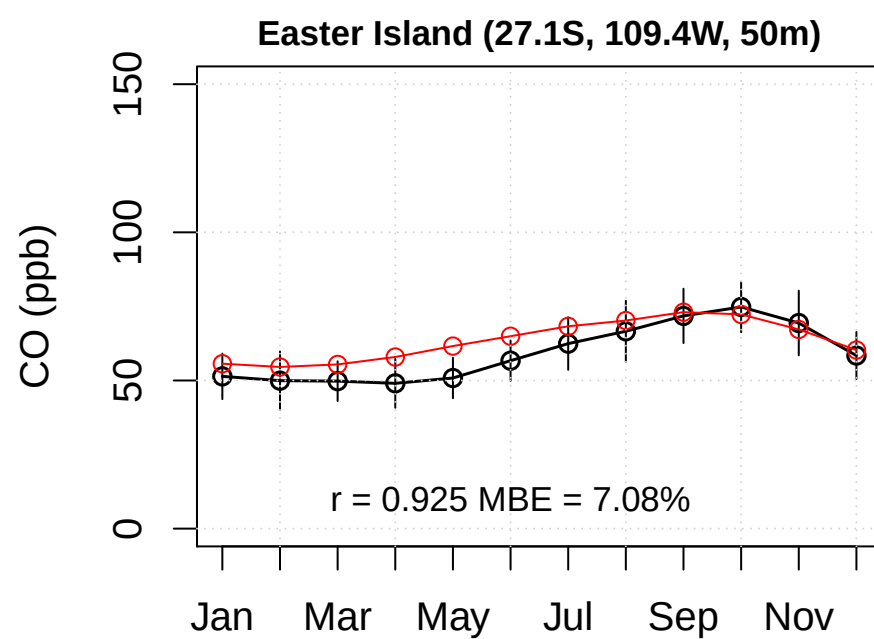
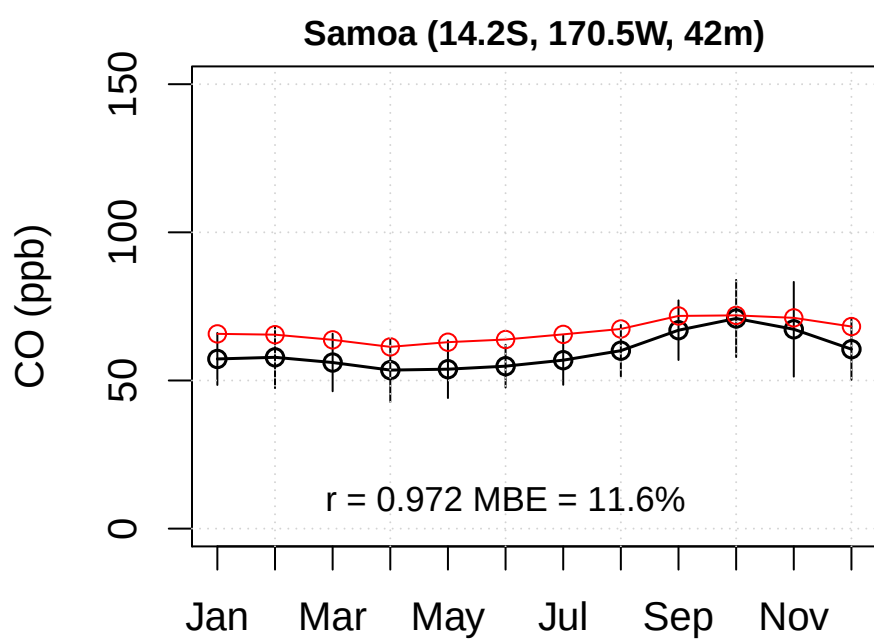
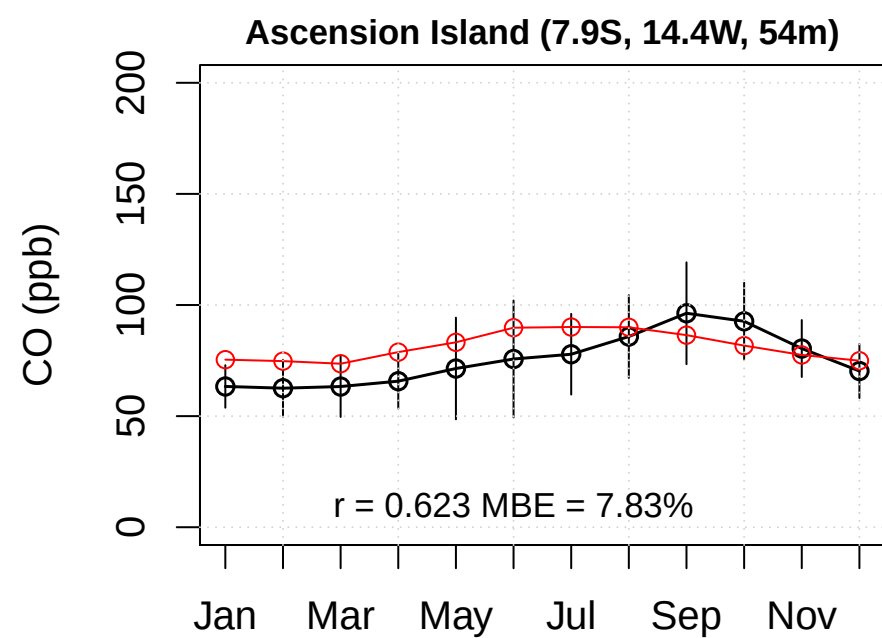
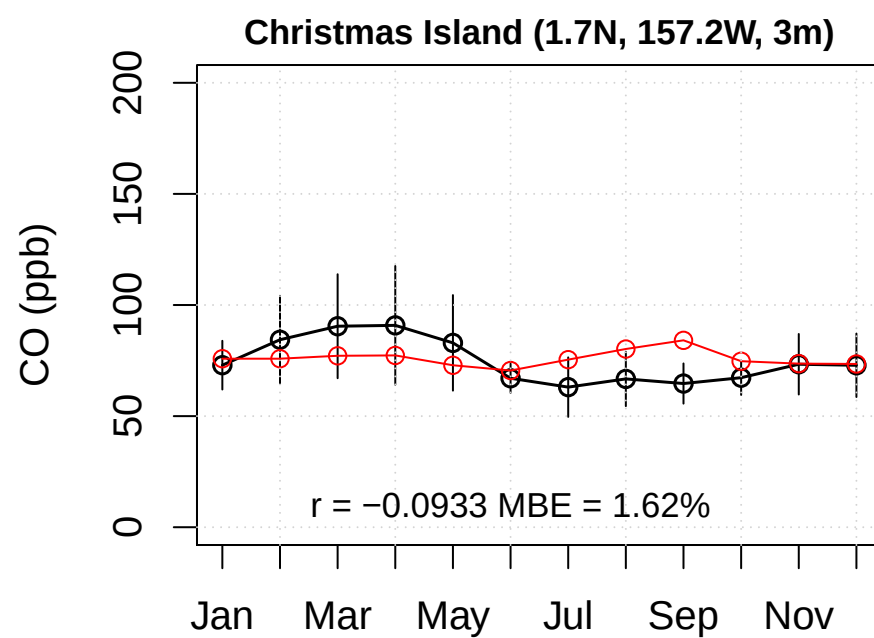
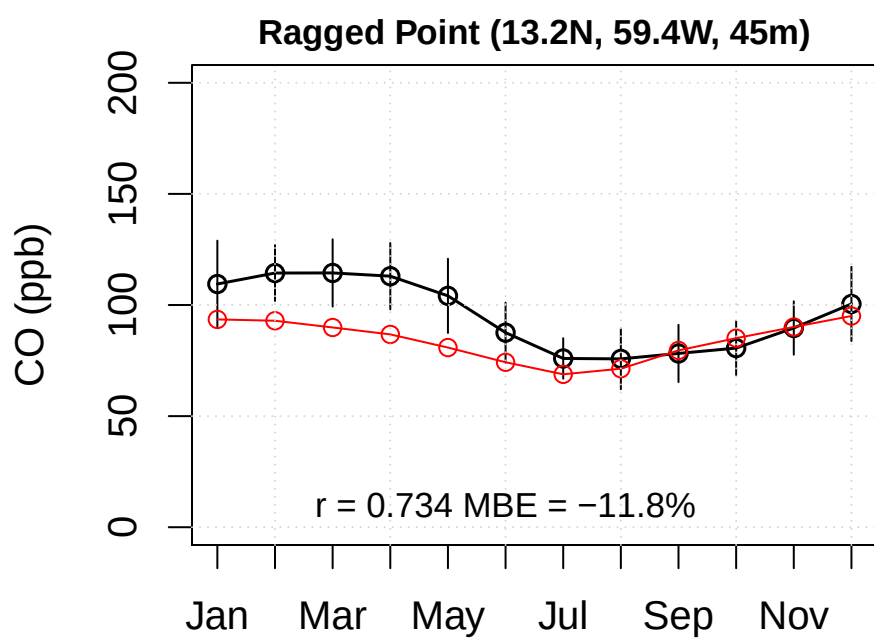
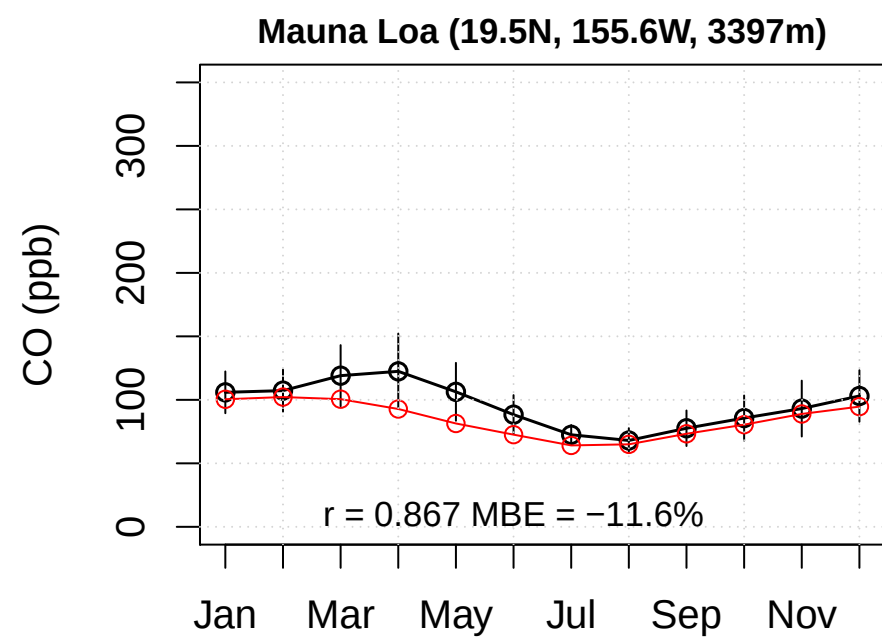
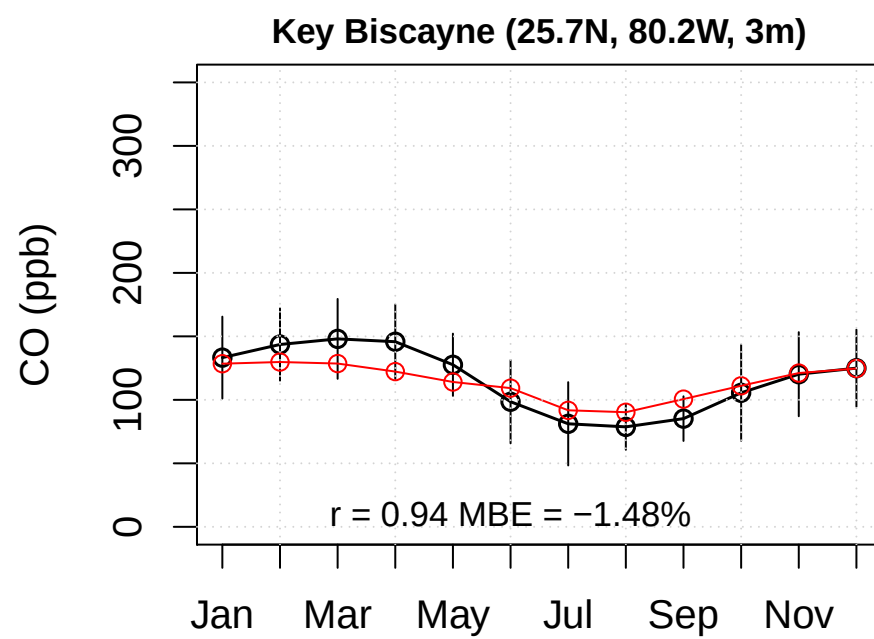
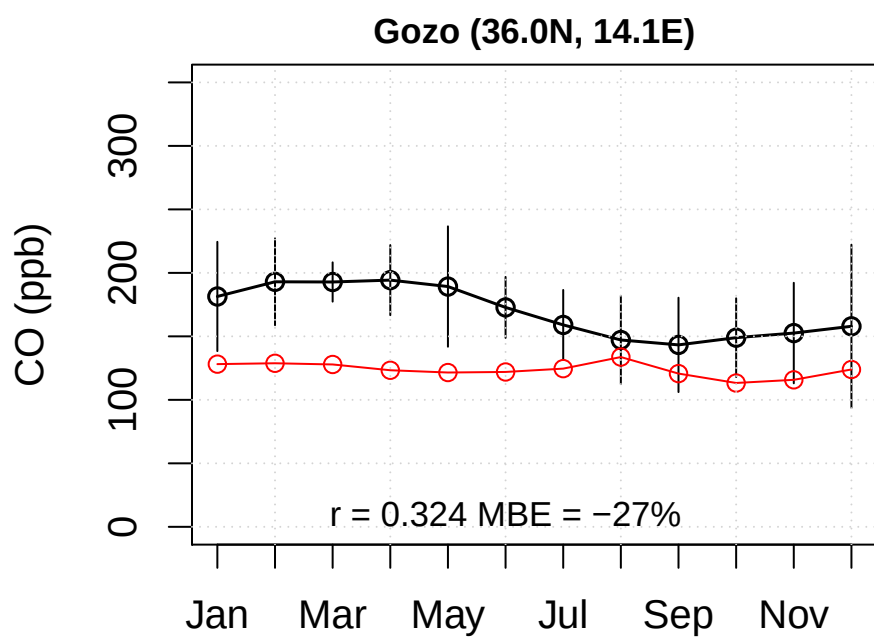
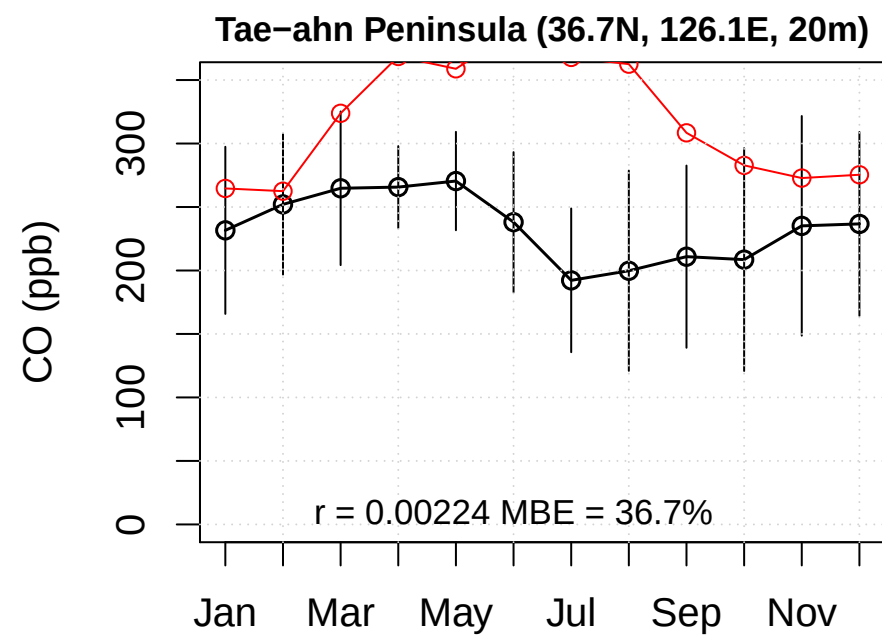
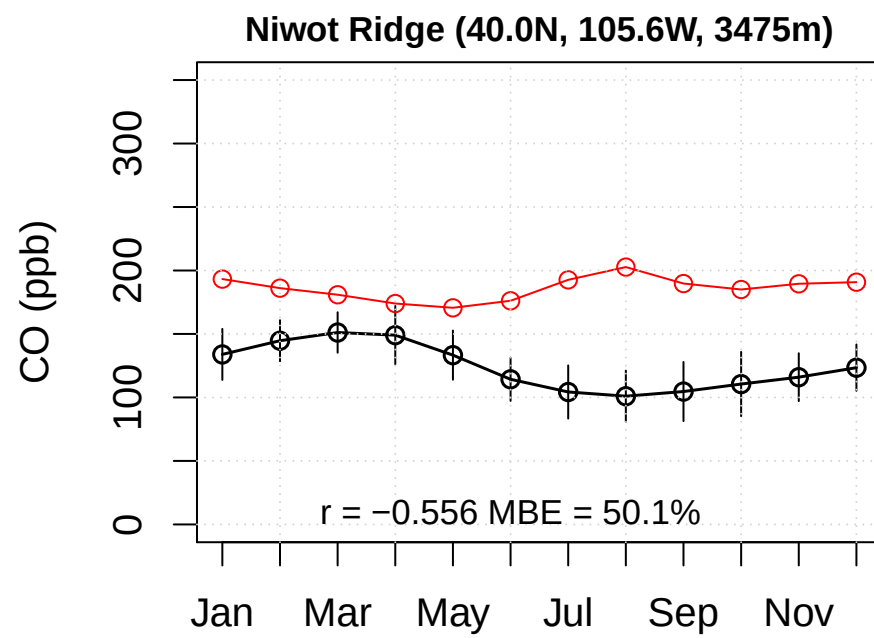
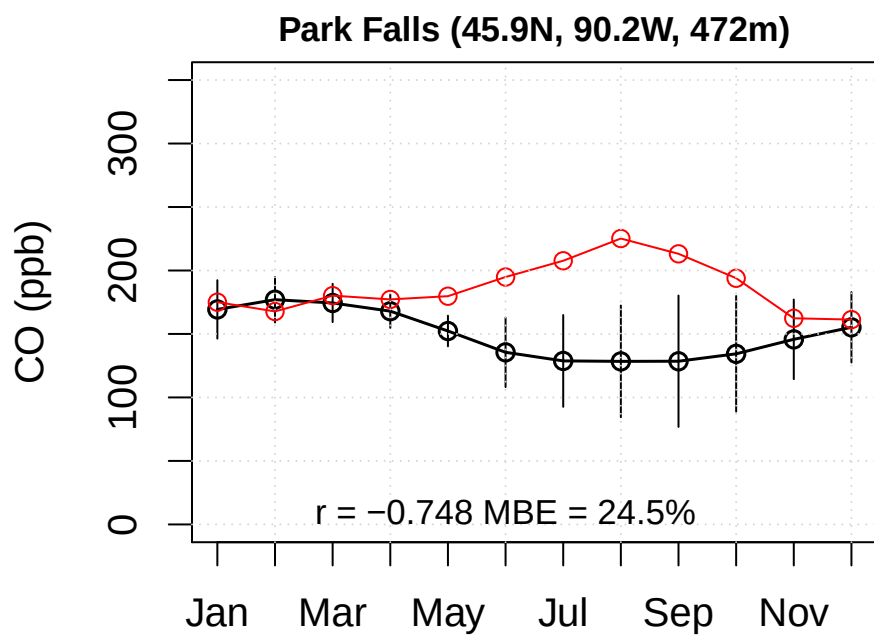
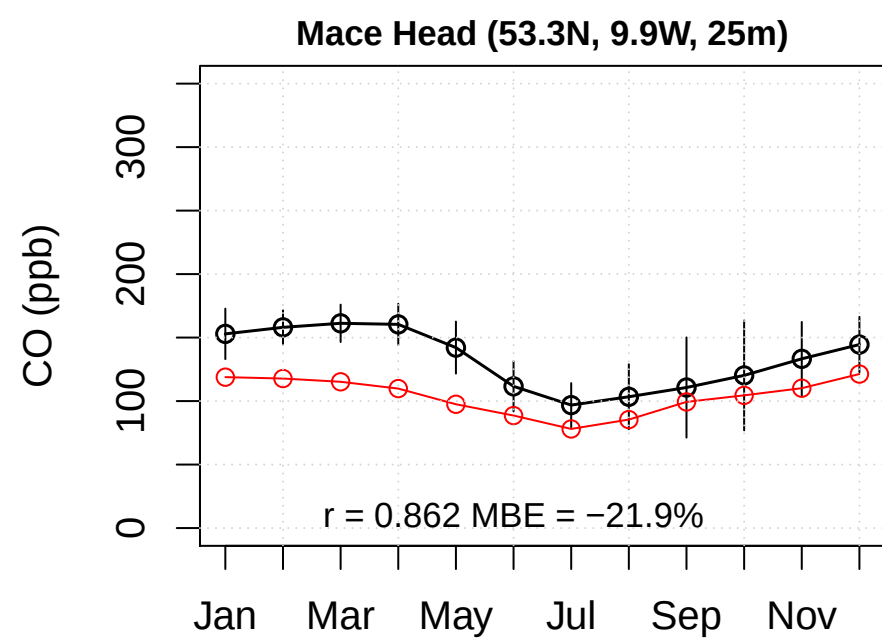
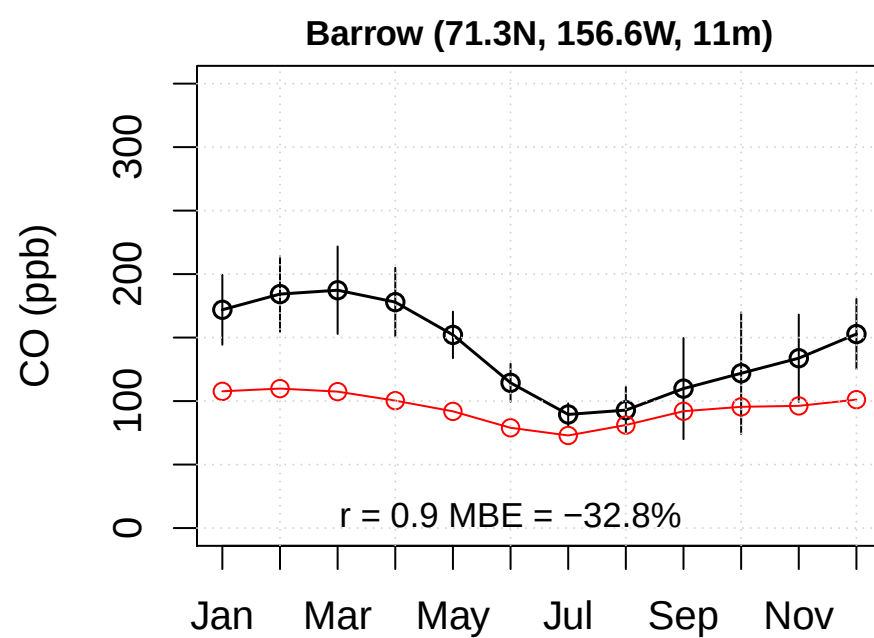
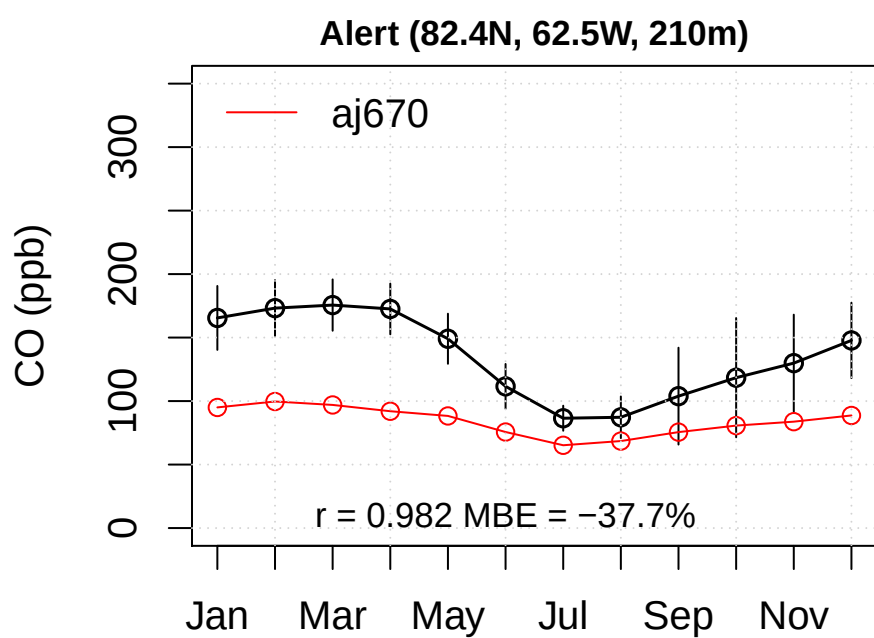
UKCA ac691 Ox Net Chemical Production



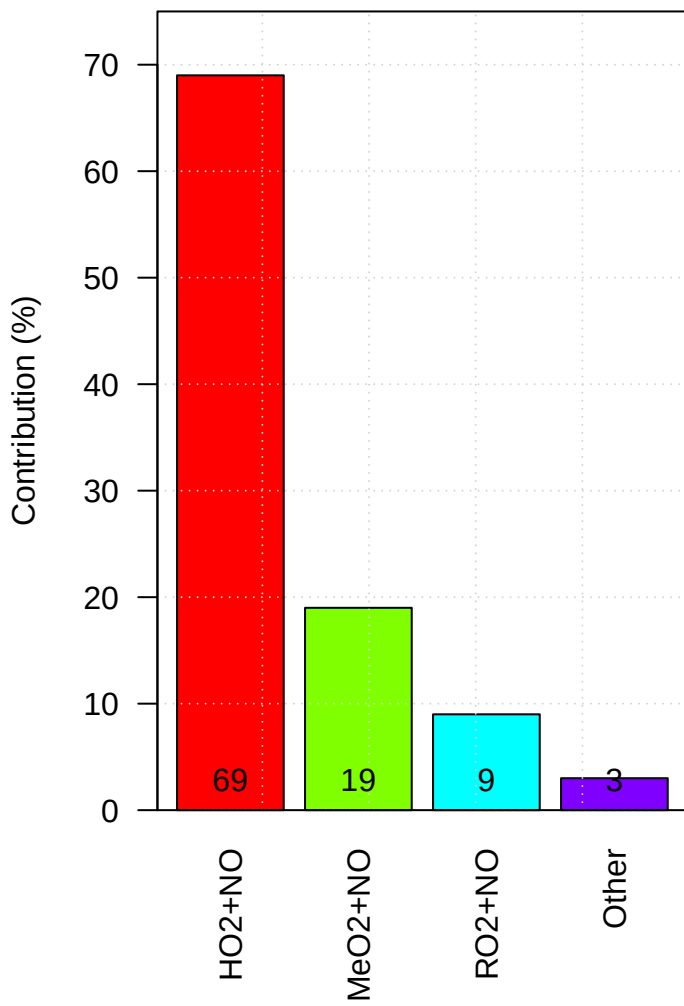
UKCA aj670 Ox Net Chemical Production



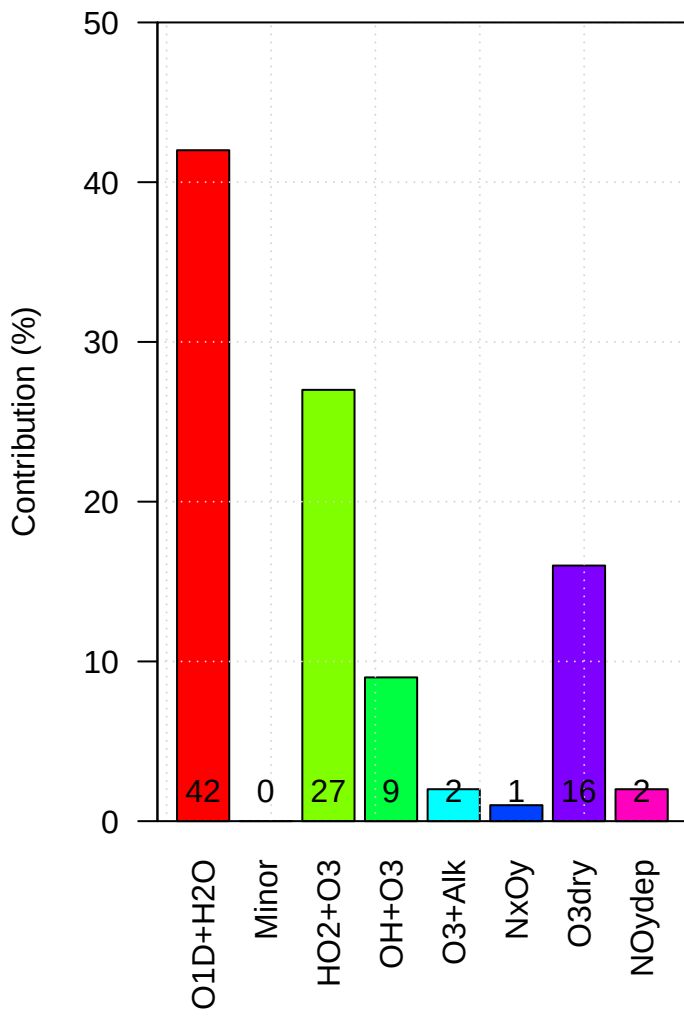




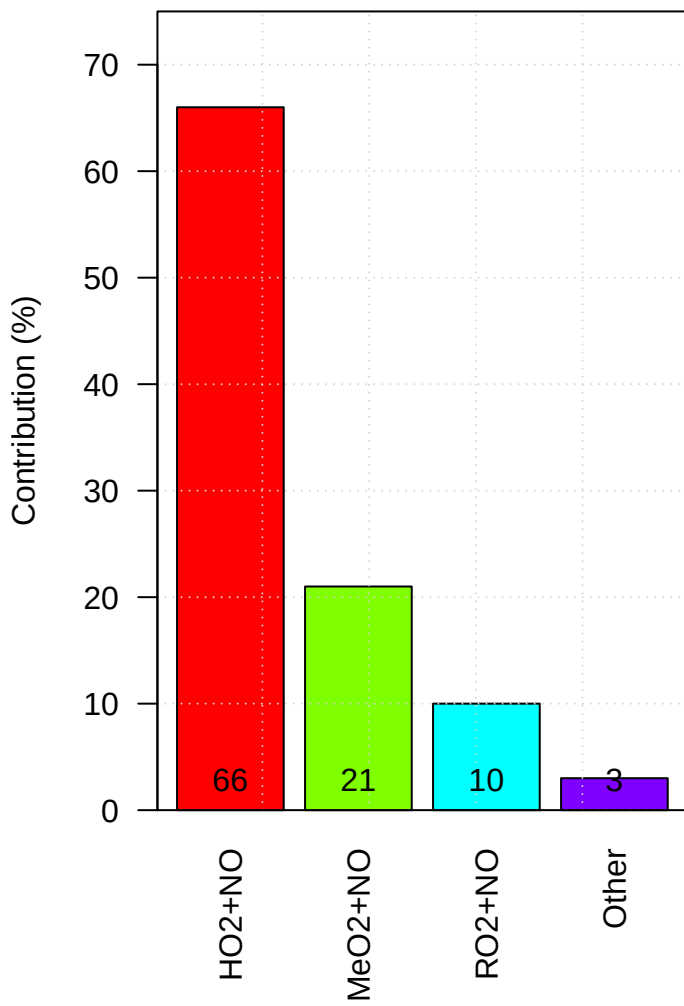
ac691 Production of Tropospheric Ox



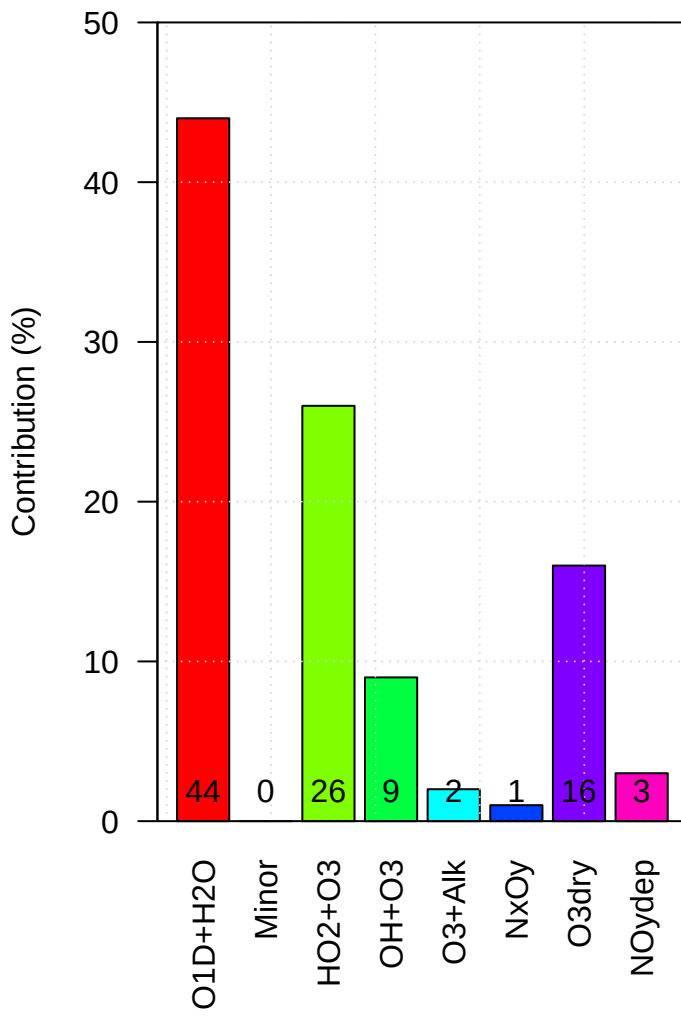
ac691 Loss of Tropospheric Ox



aj670 Production of Tropospheric Ox



aj670 Loss of Tropospheric Ox



ppm

0.6



0.4

0.3

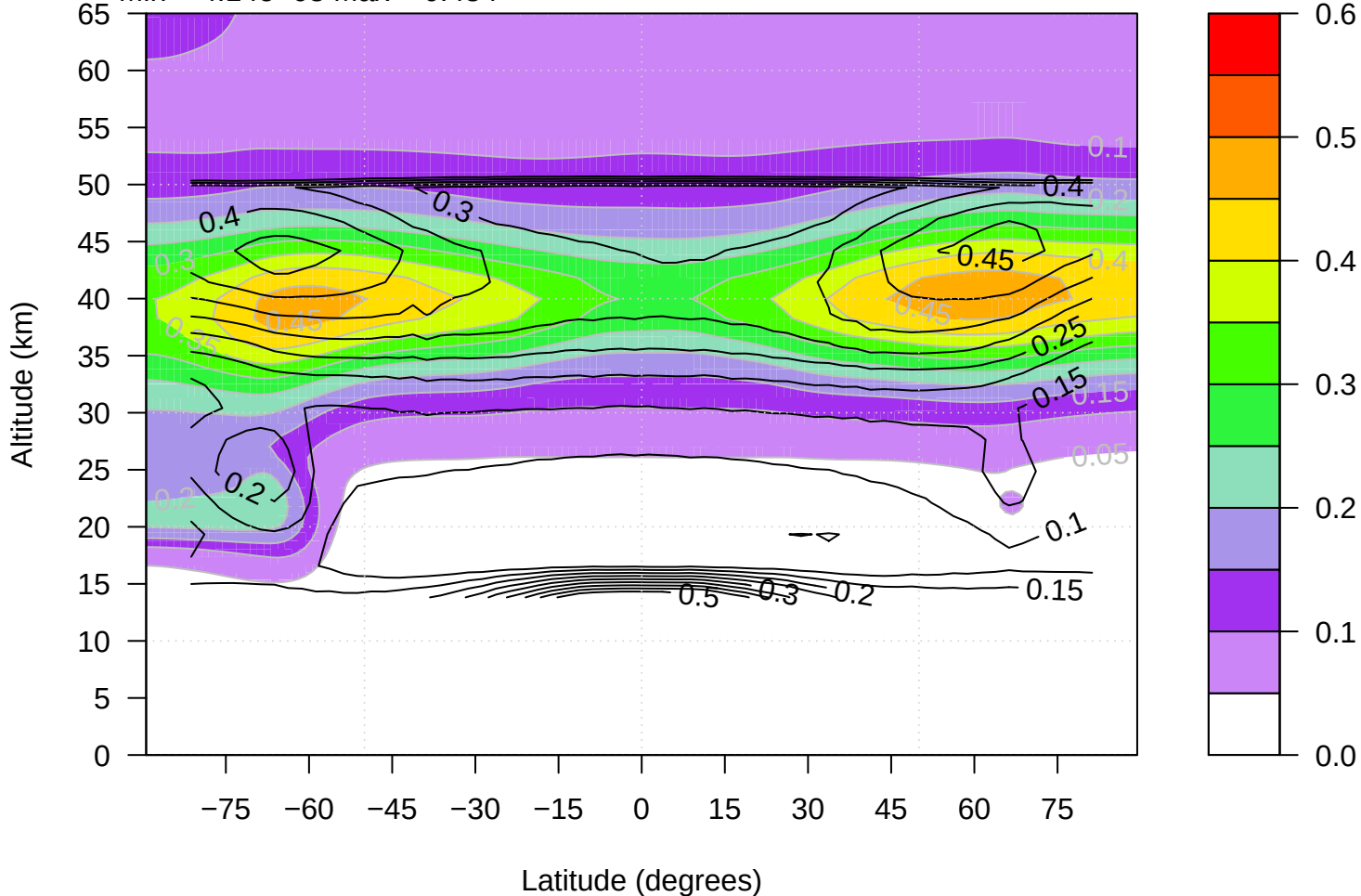
0.2

0.1

0.0

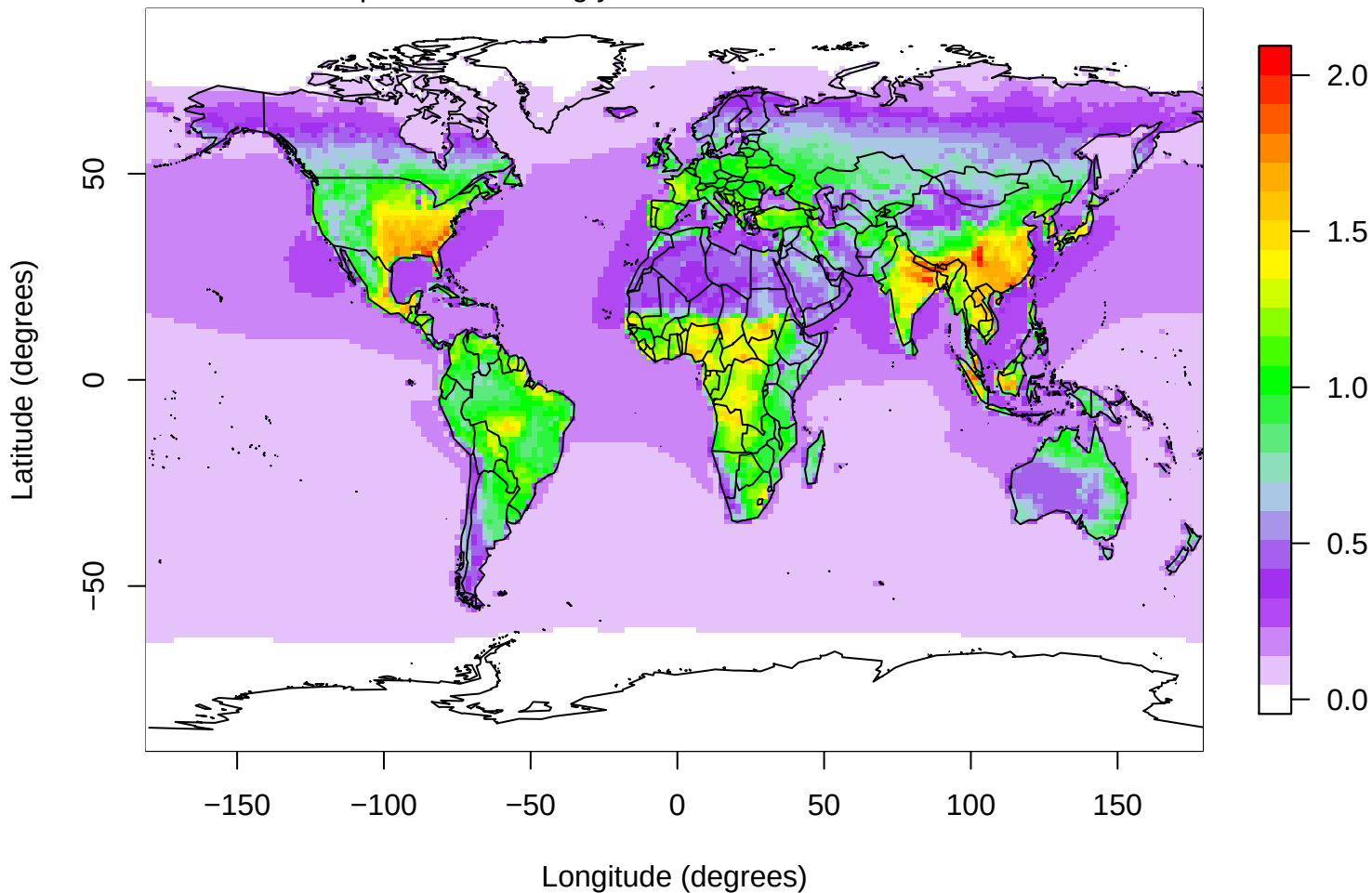
MLS – UKCA aj670 ClO comparison

Min = 4.14e-08 Max = 0.484



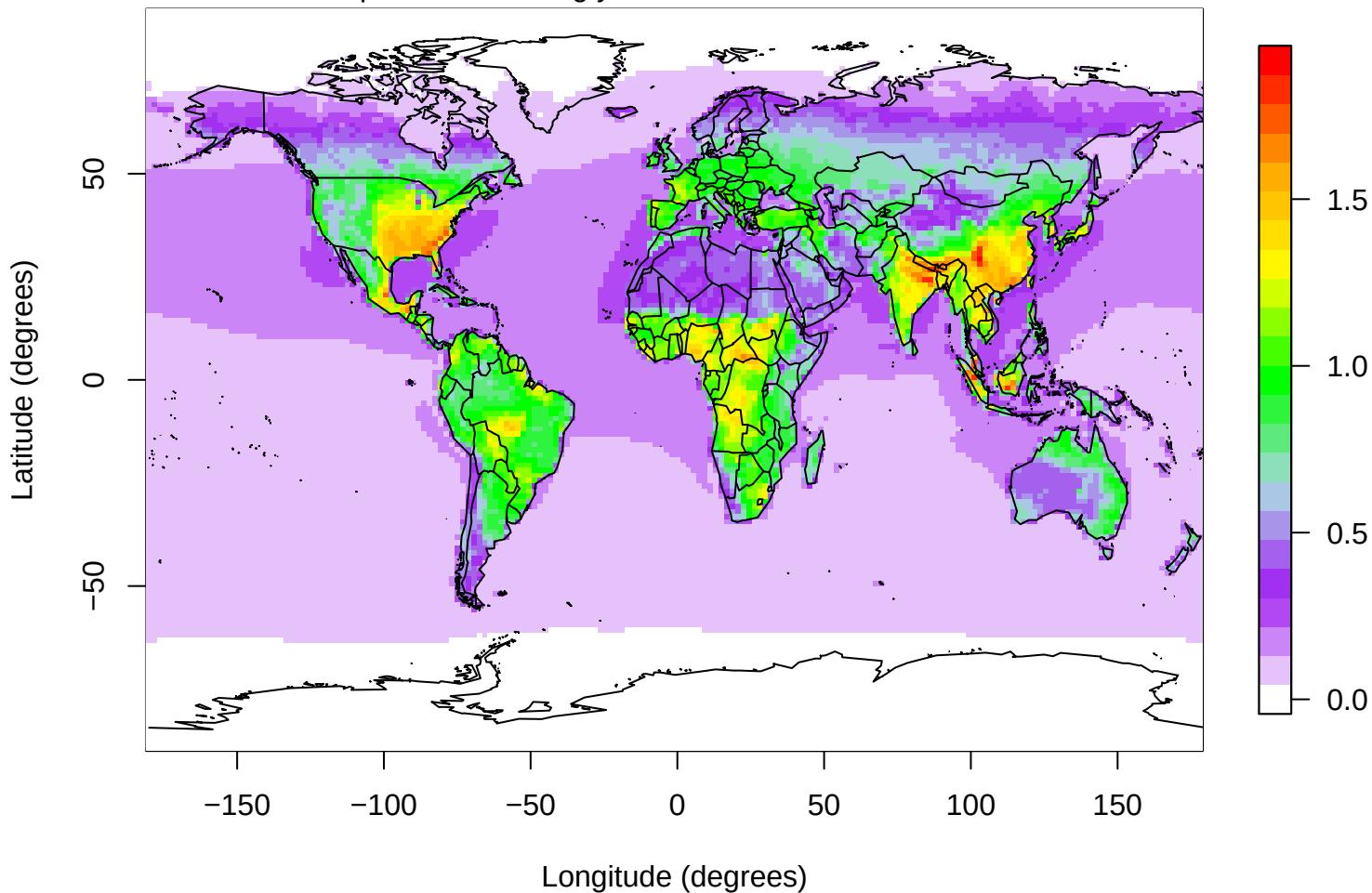
UKCA Ox deposition ac691

Total Ox Deposition = 962 Tg/yr



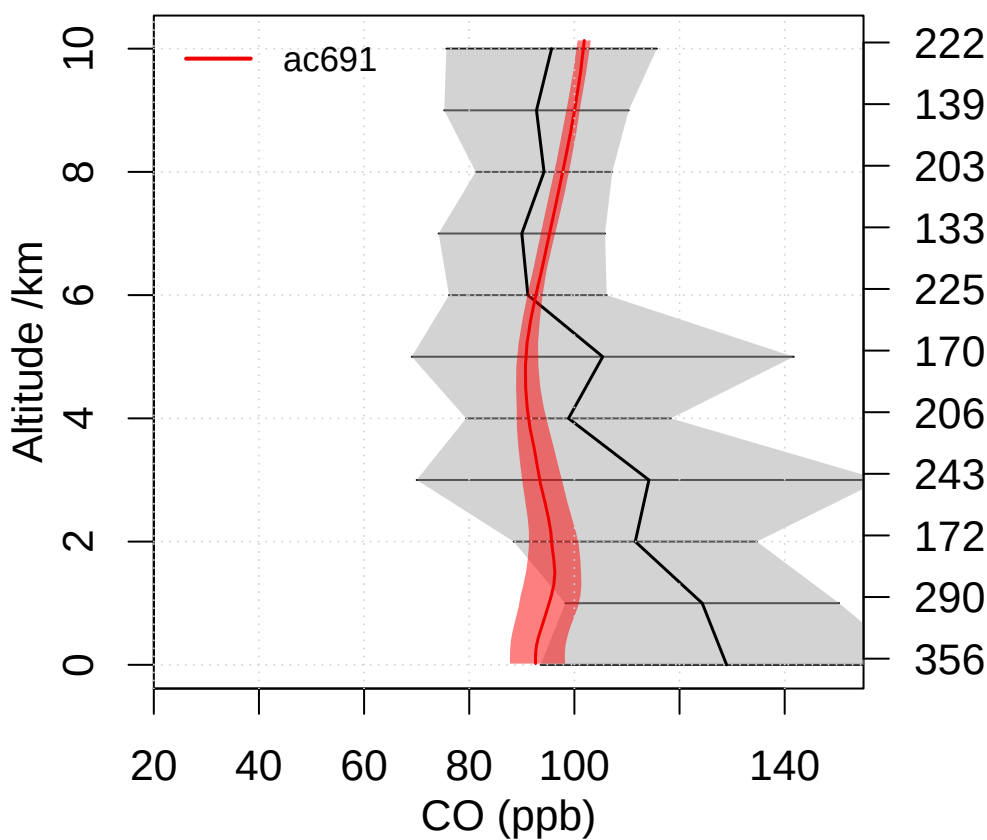
UKCA Ox deposition aj670

Total Ox Deposition = 886 Tg/yr

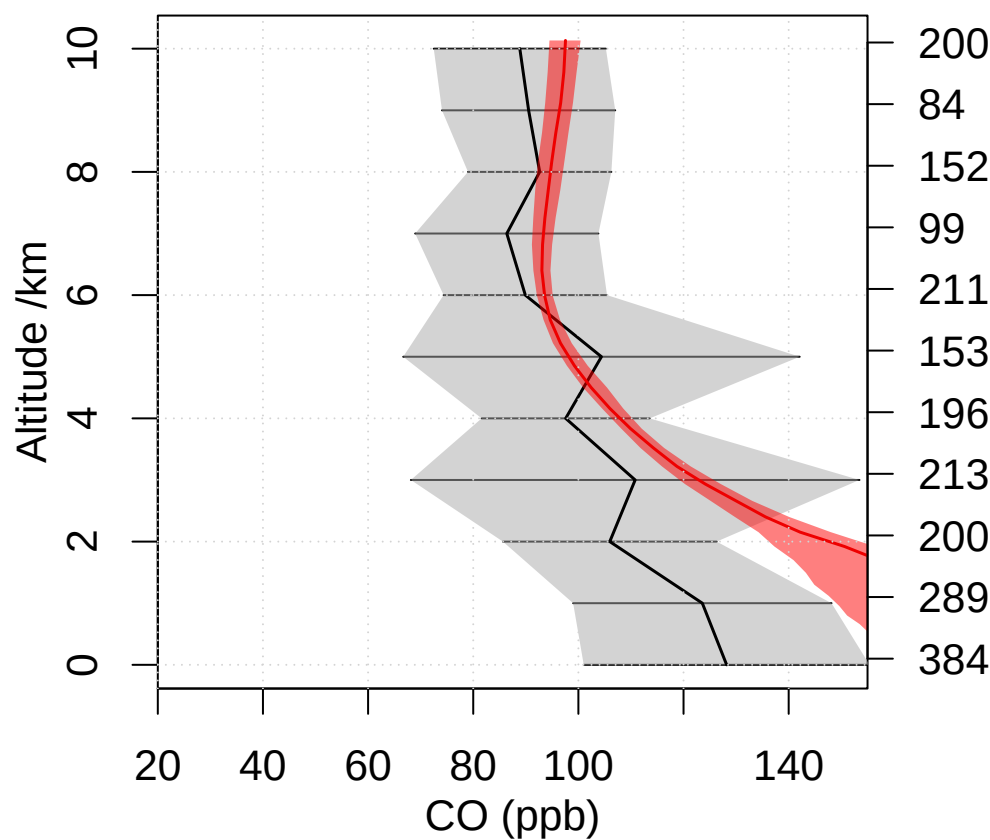


Emmons CO comparison

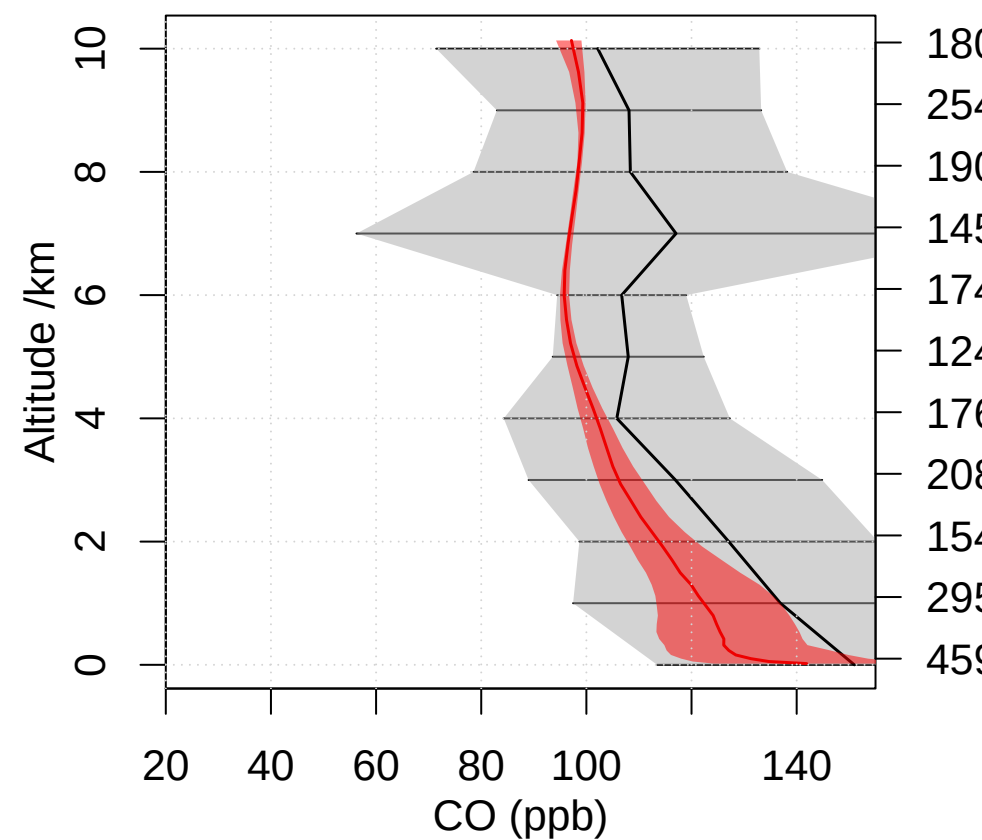
INTEX-NA East Coast 2004 07
Lat 32.5 – 40 Lon 296.5 – 307



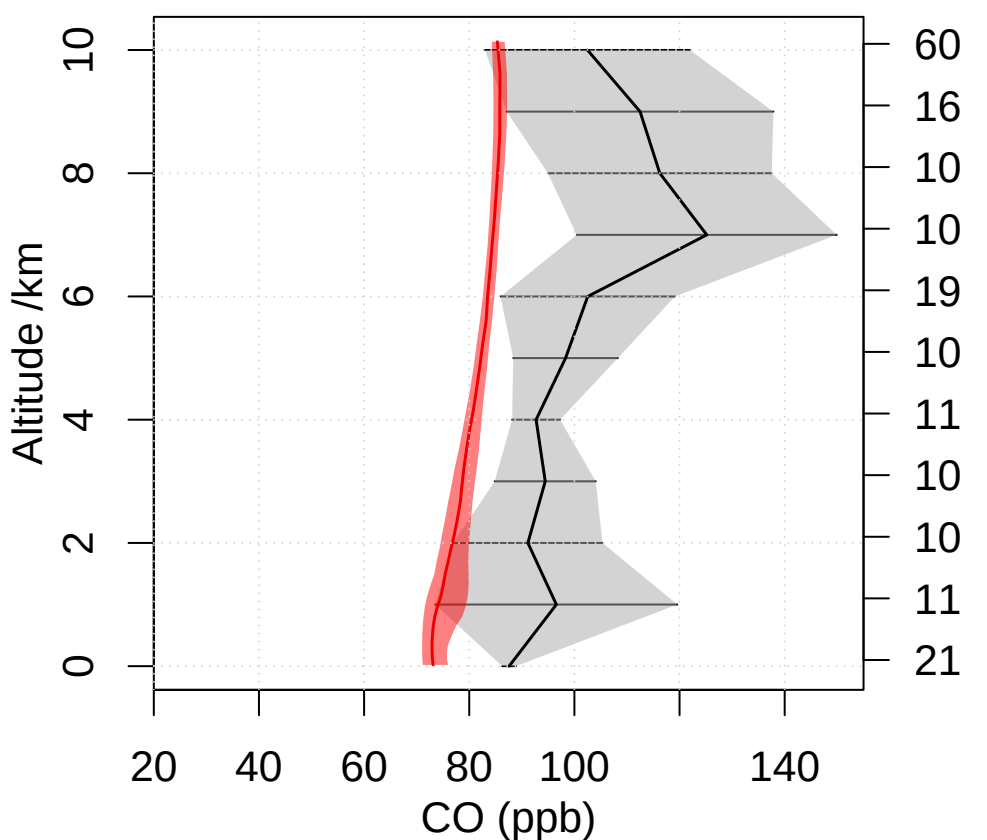
INTEX-NA Central 2004 07
Lat 30 – 40 Lon 259.5 – 285



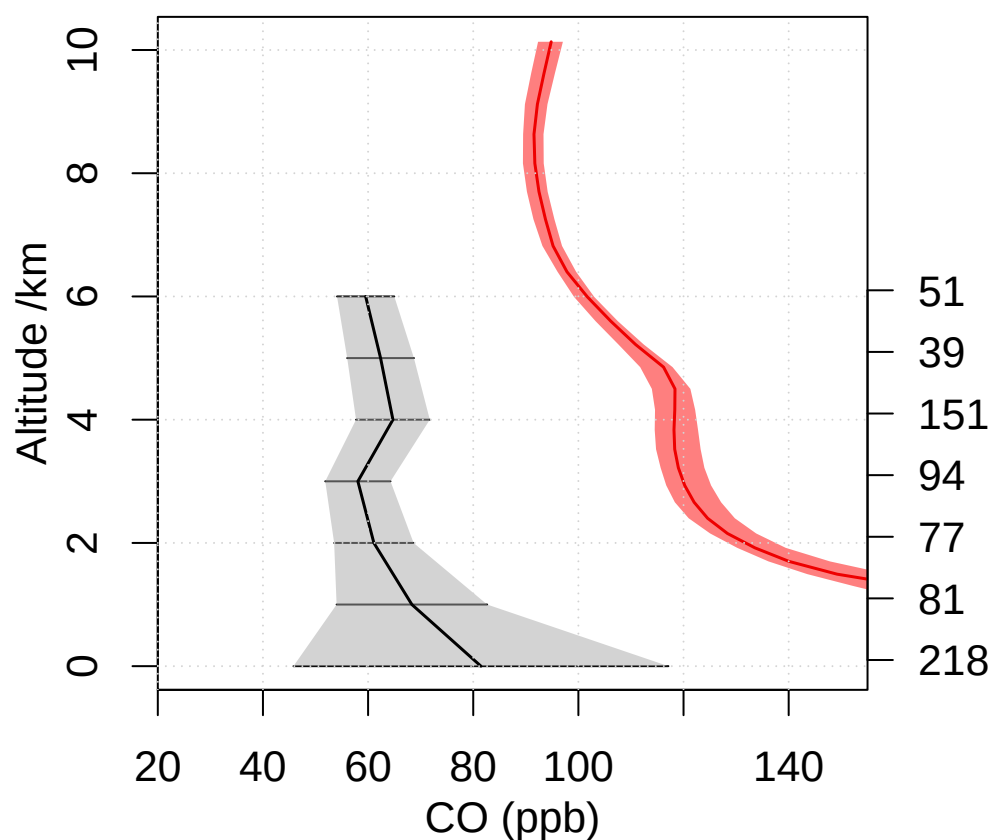
INTEX-NA North East 2004 07
Lat 42.5 – 52.5 Lon 285 – 310



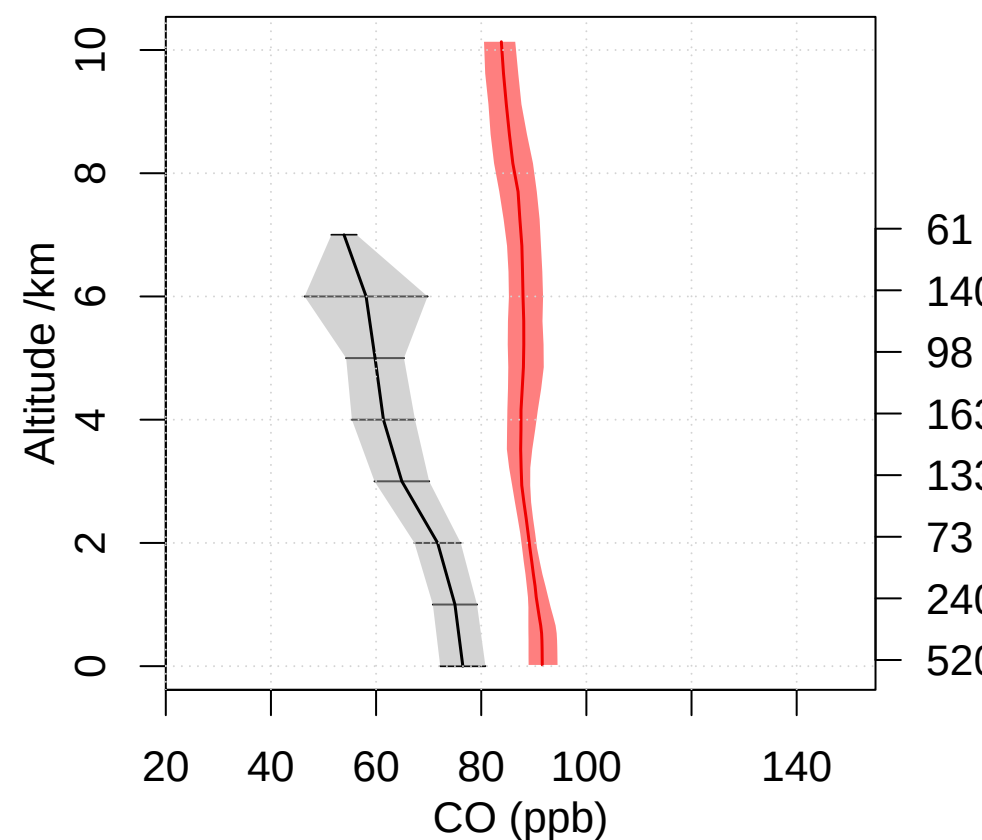
INTEX-NA West Coast 2004 07
Lat 32.5 – 45 Lon 217 – 240



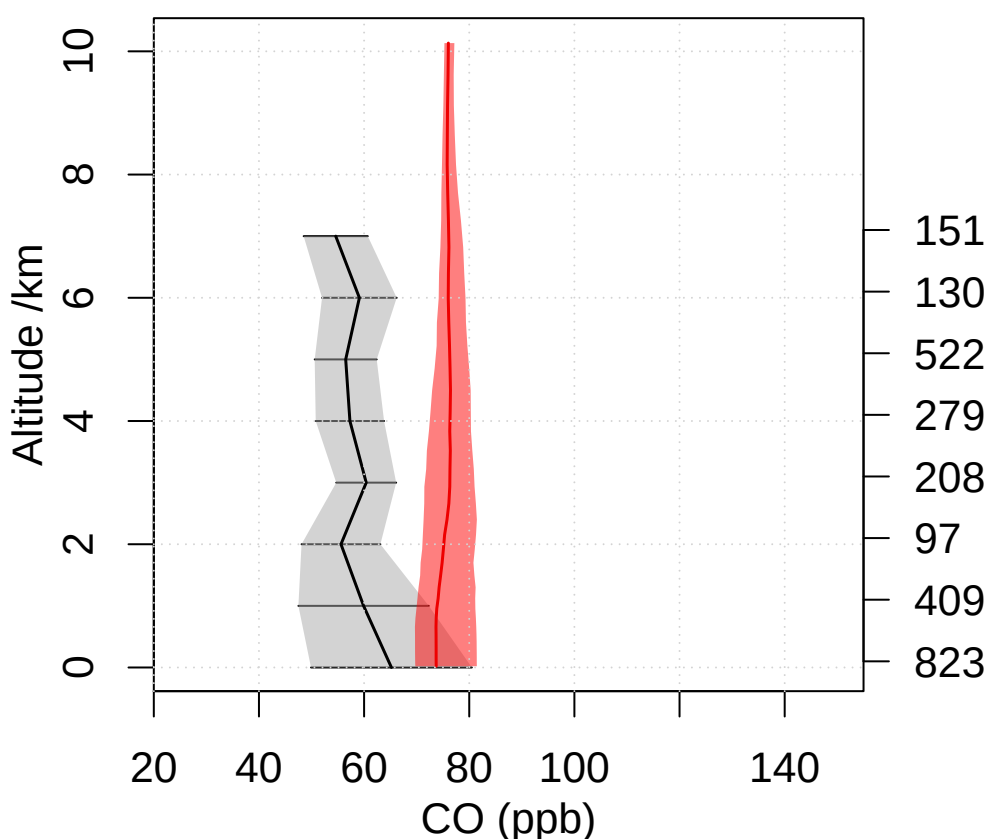
OP3 2008 07
Lat 2.5 – 7.5 Lon 112.5 – 120



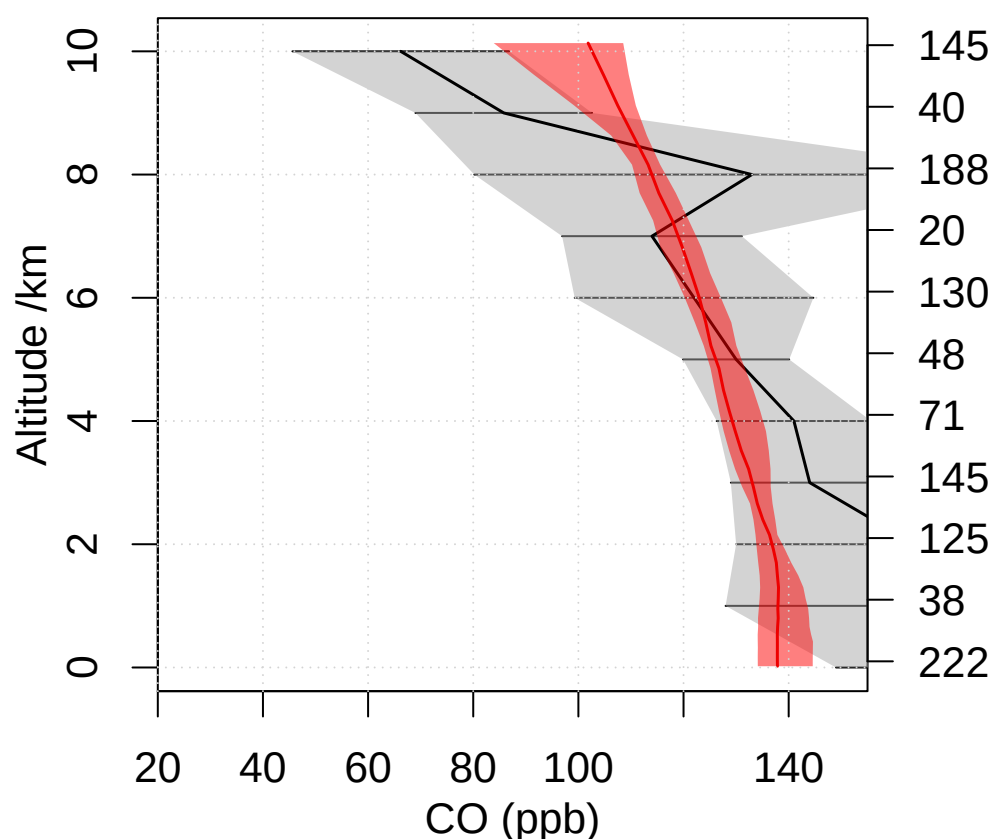
PEM-Tropics-B Christmas-Island 1999 0
Lat 0 – 10 Lon 200 – 220



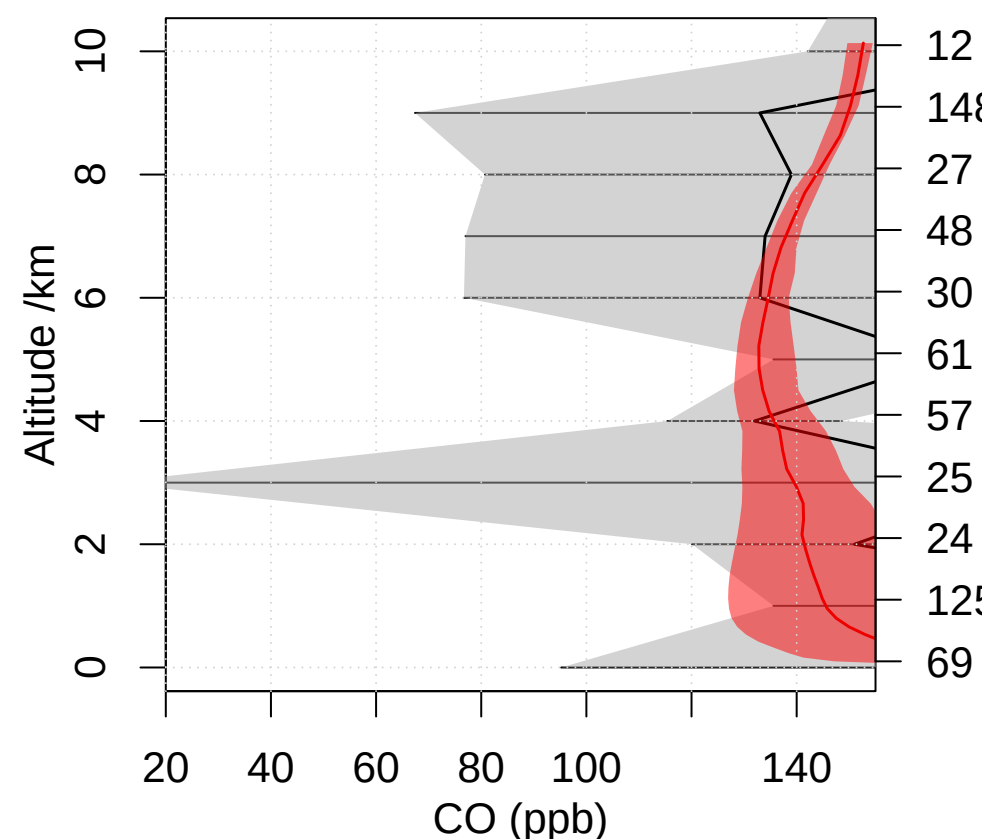
PEM-Tropics-B Tahiti 1999 03
Lat -20 – 0 Lon 200 – 230



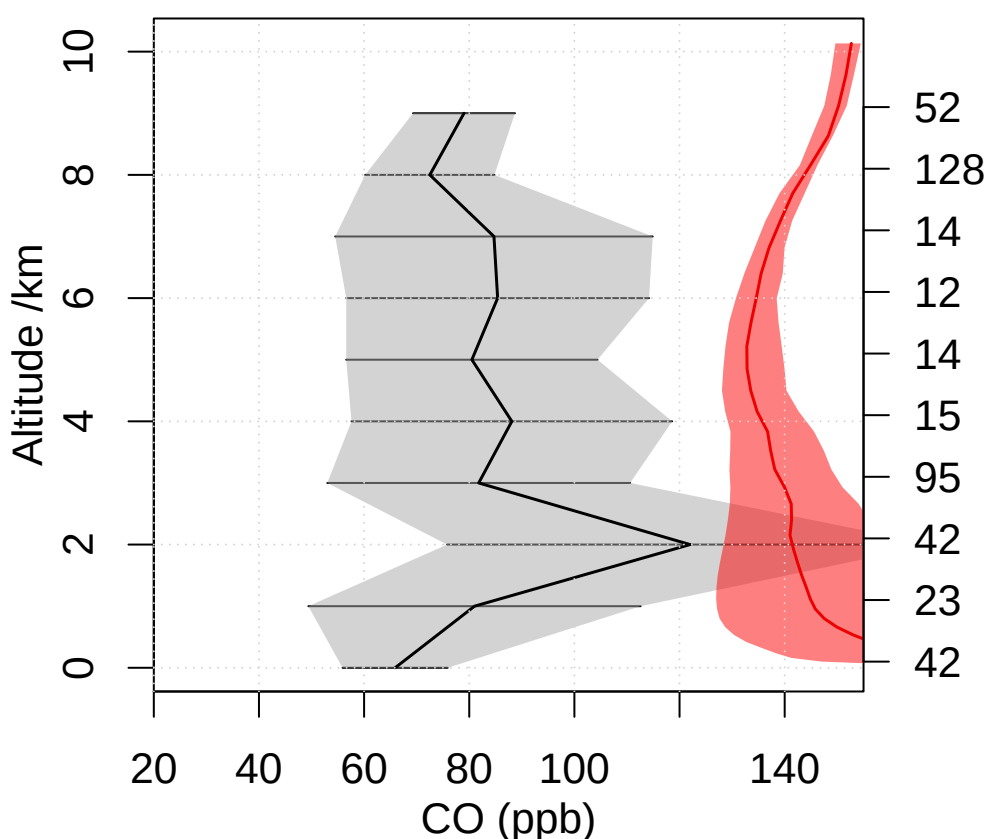
PEM-West-B Japan 1994 02
Lat 25 – 40 Lon 135 – 150



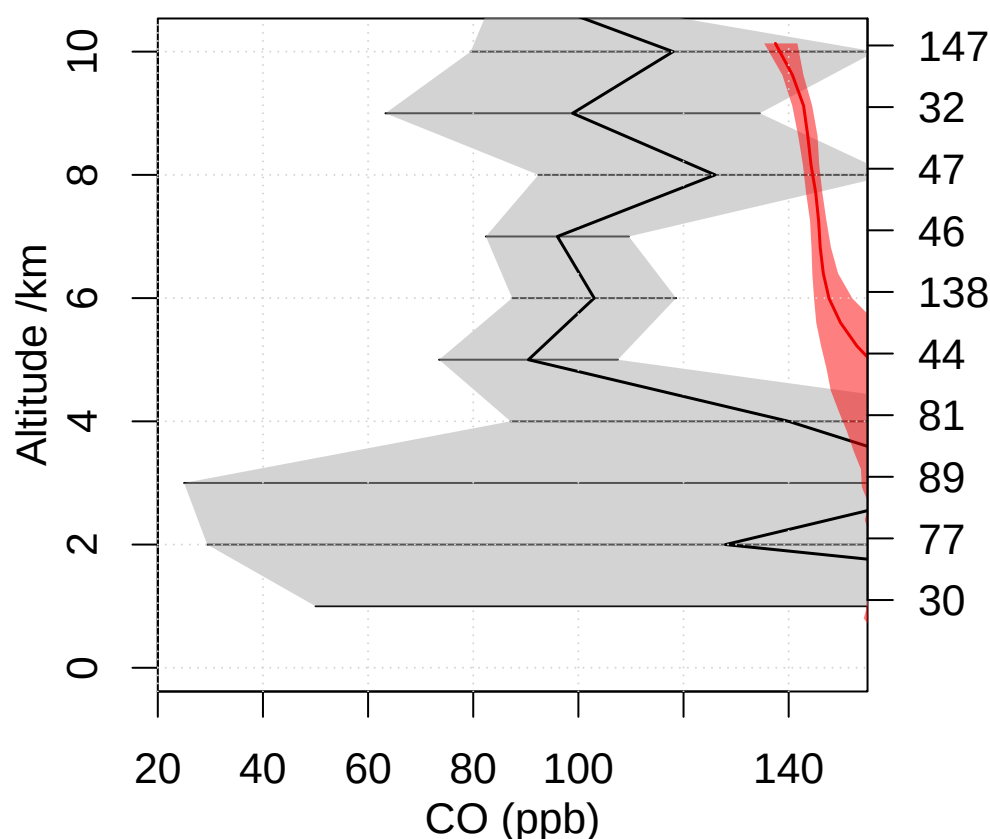
TRACE-A E-Brazil 1992 09
Lat -15 – -5 Lon 310 – 320



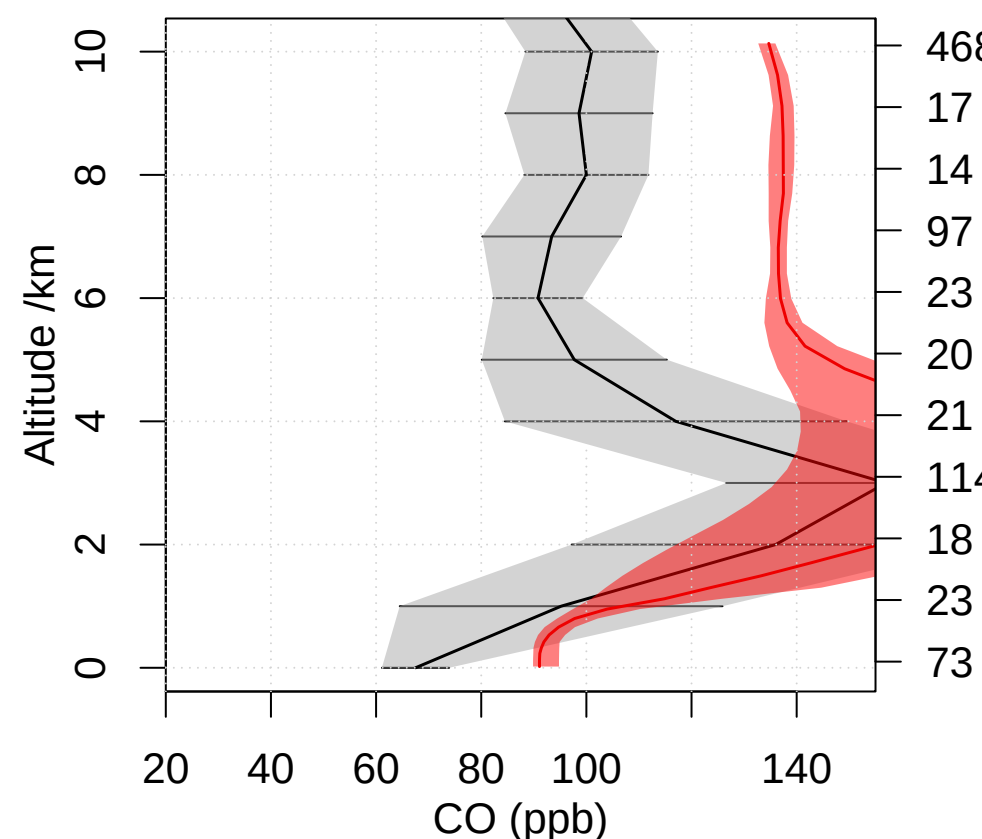
TRACE-A E-Brazil Coast 1992 09
Lat -35 – -25 Lon 310 – 320



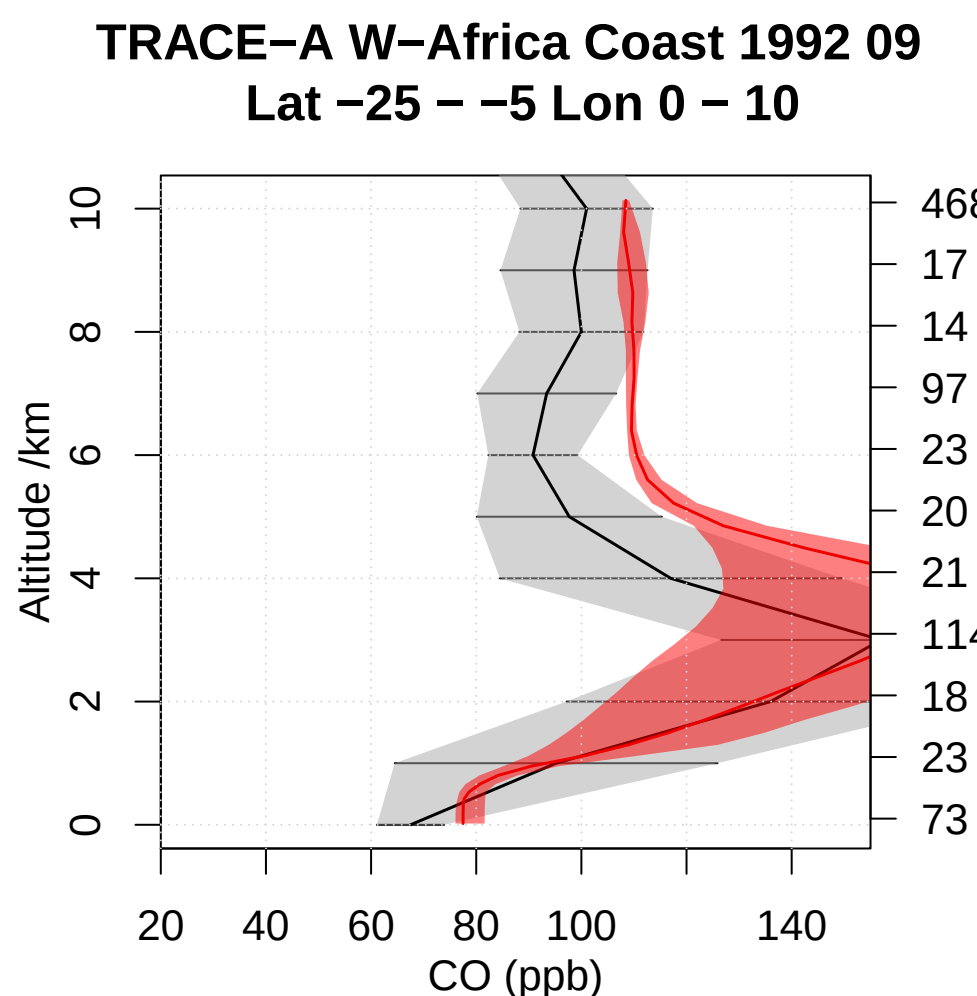
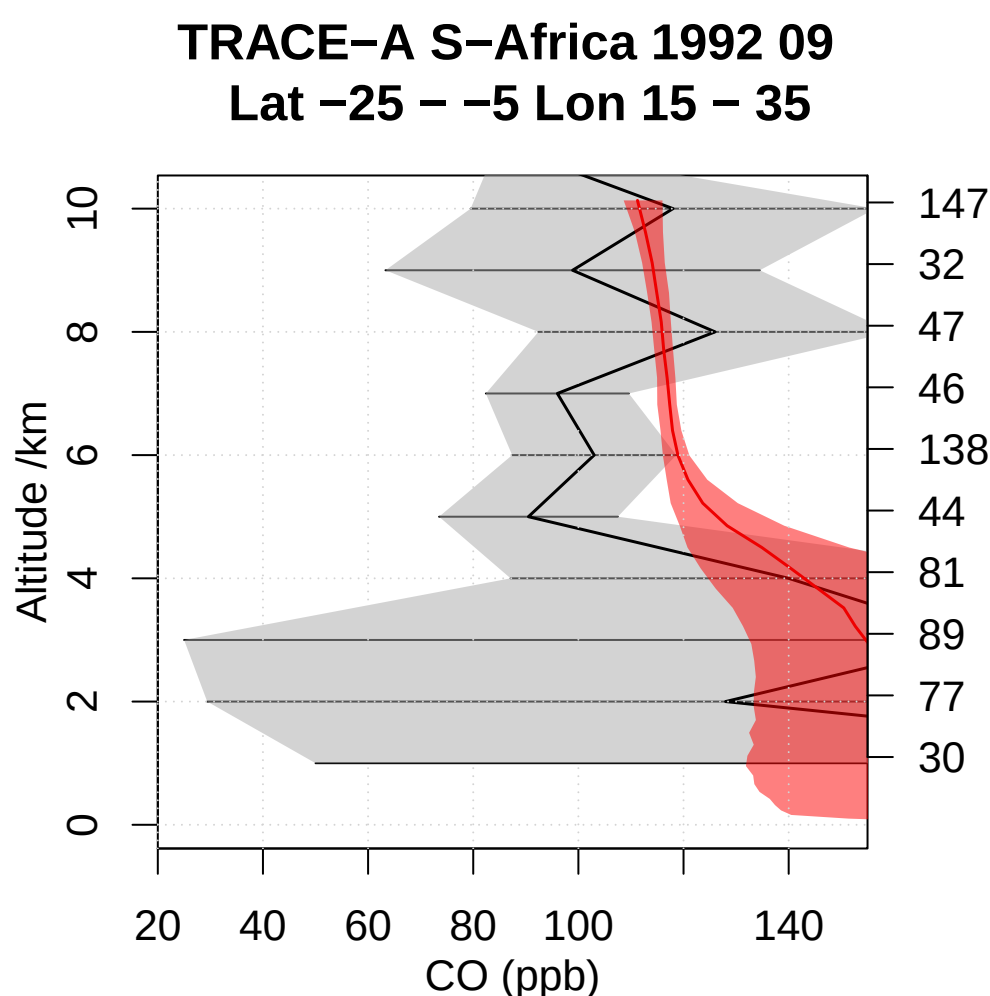
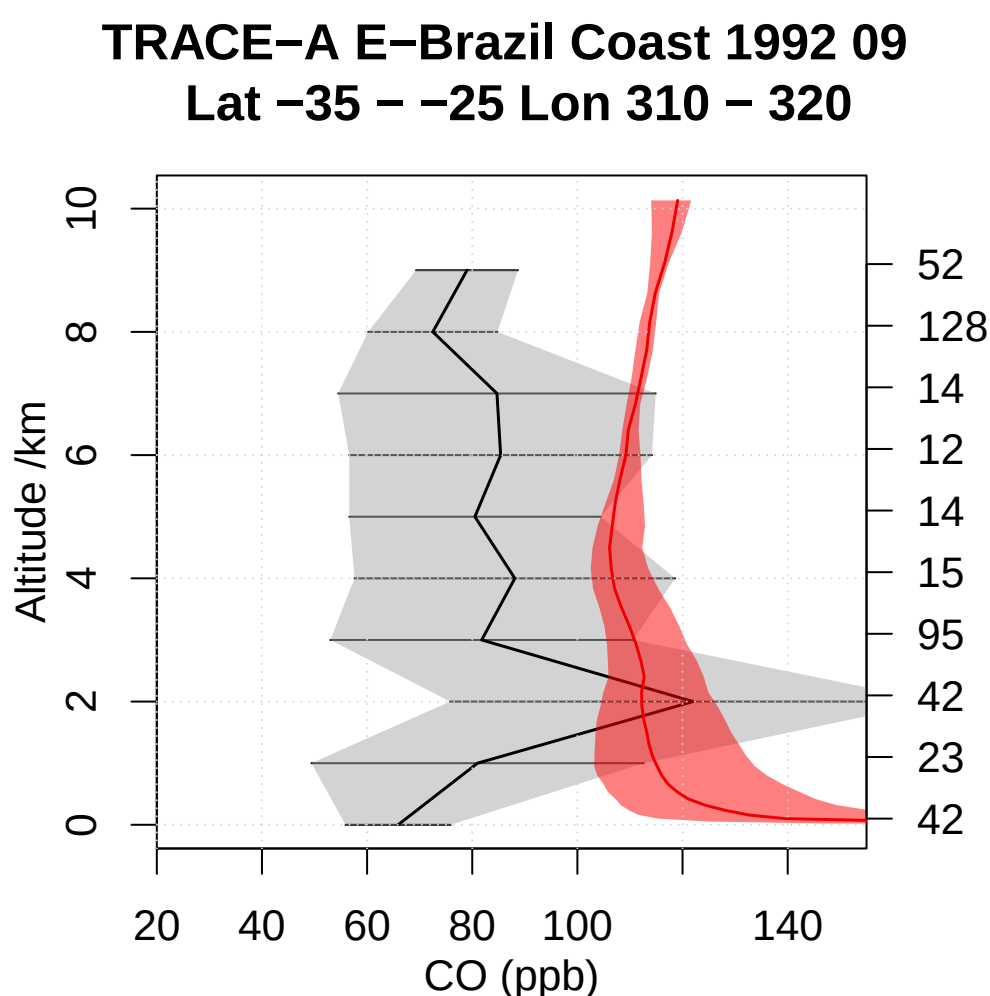
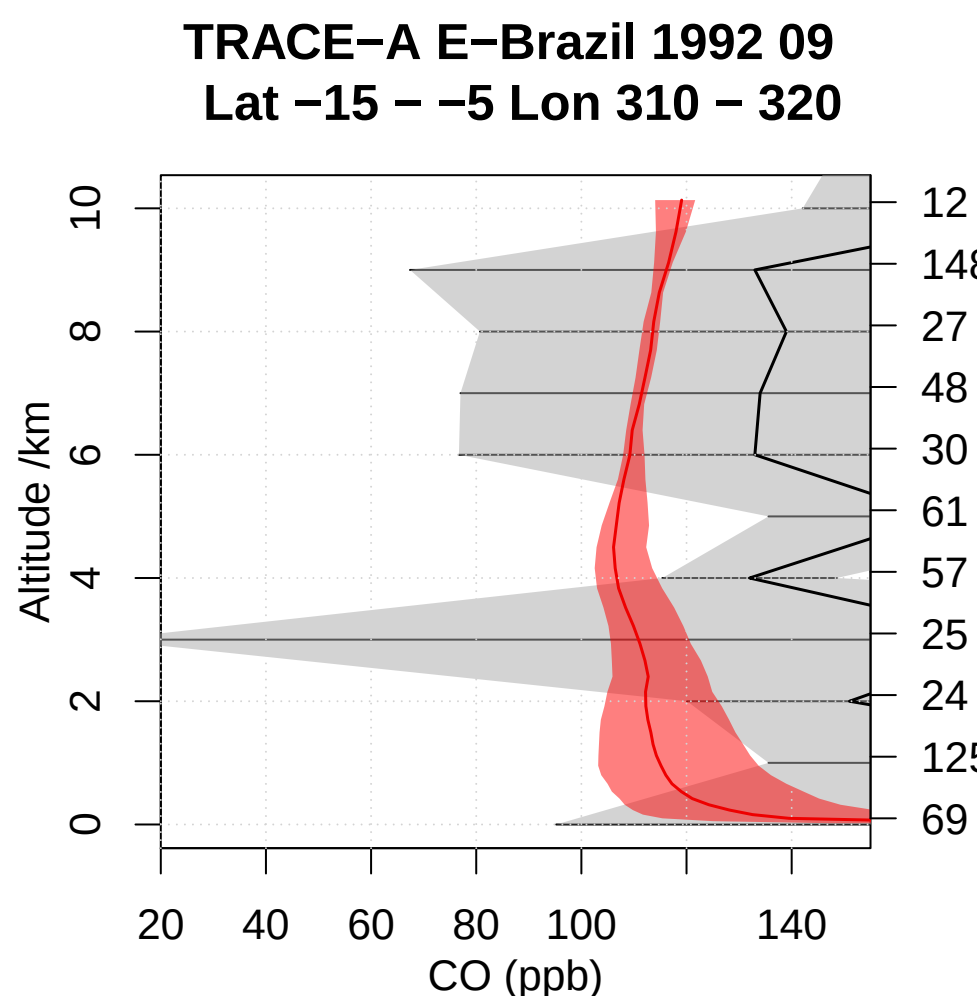
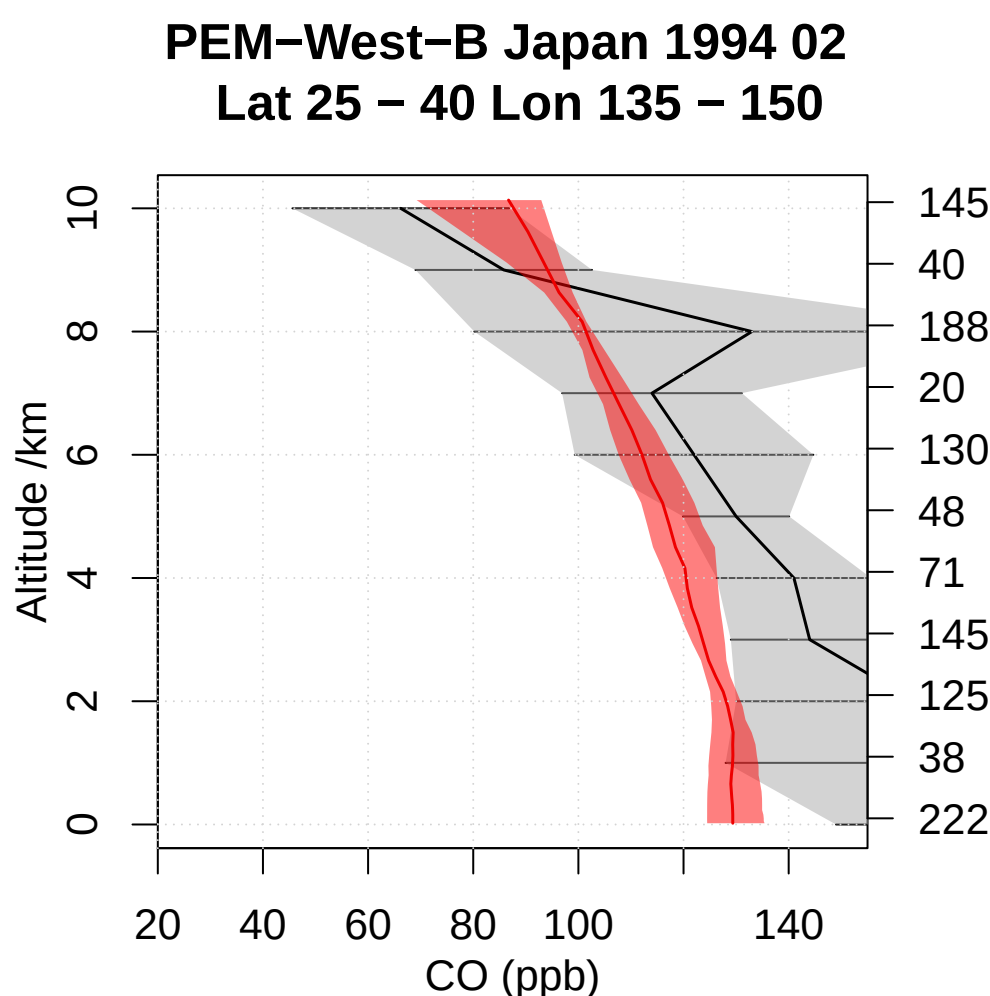
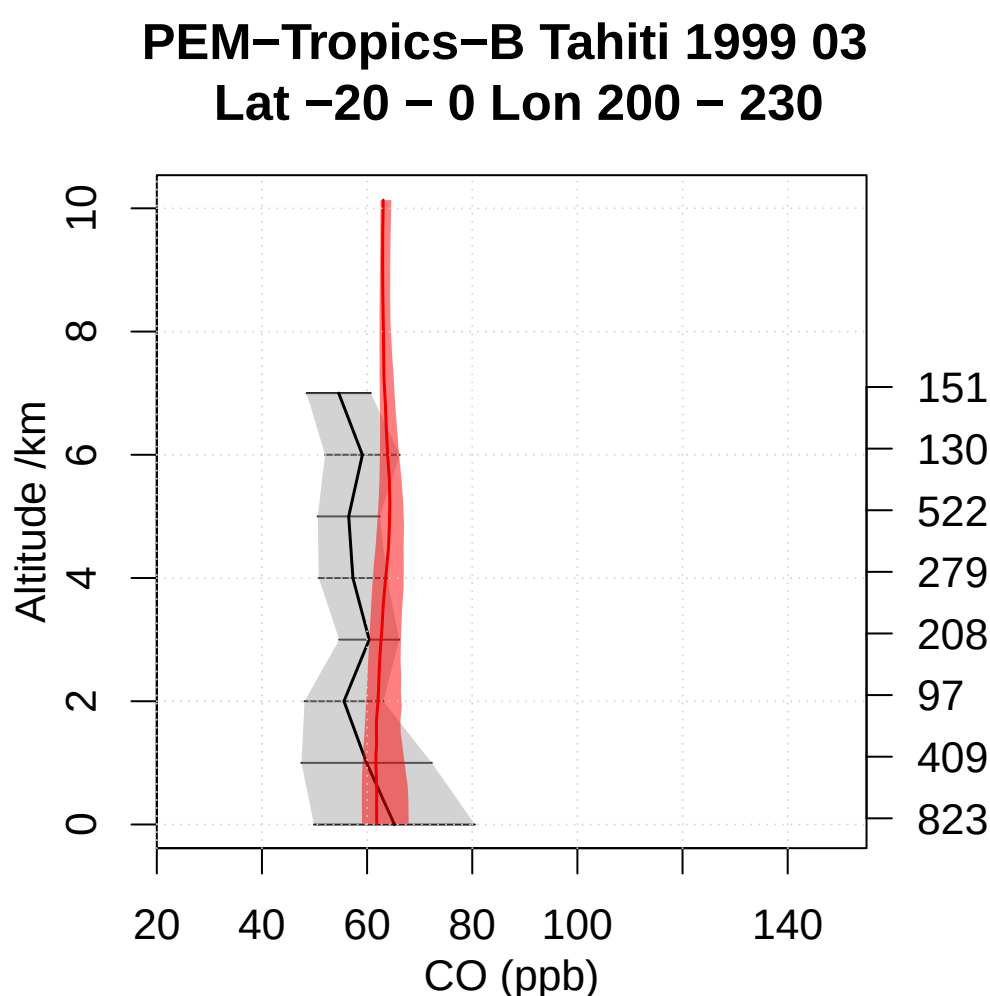
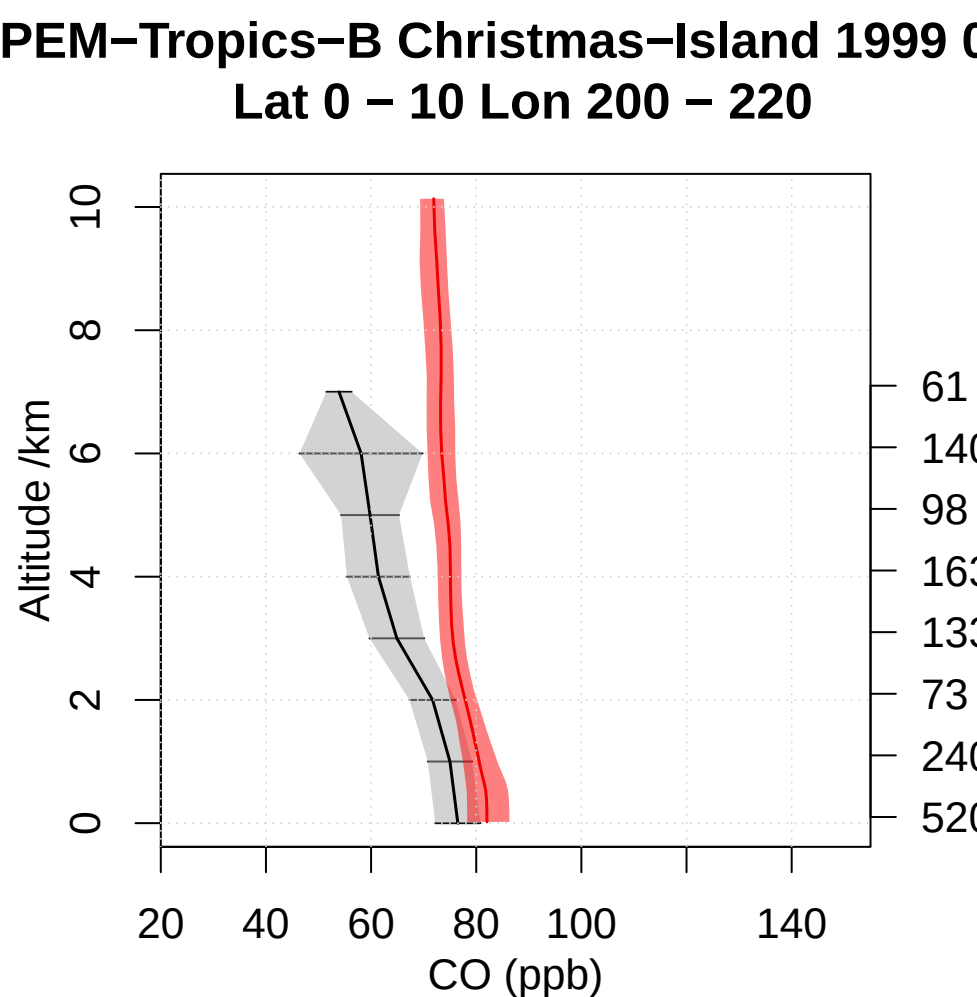
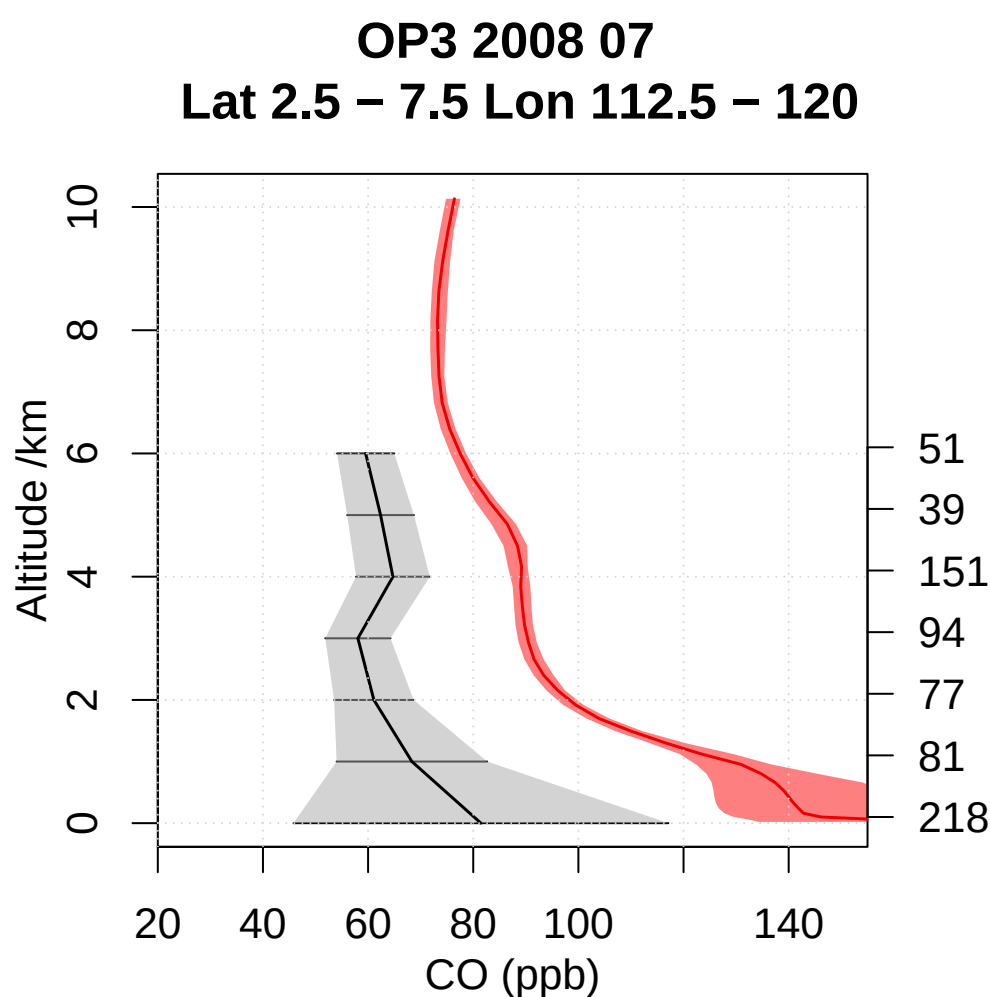
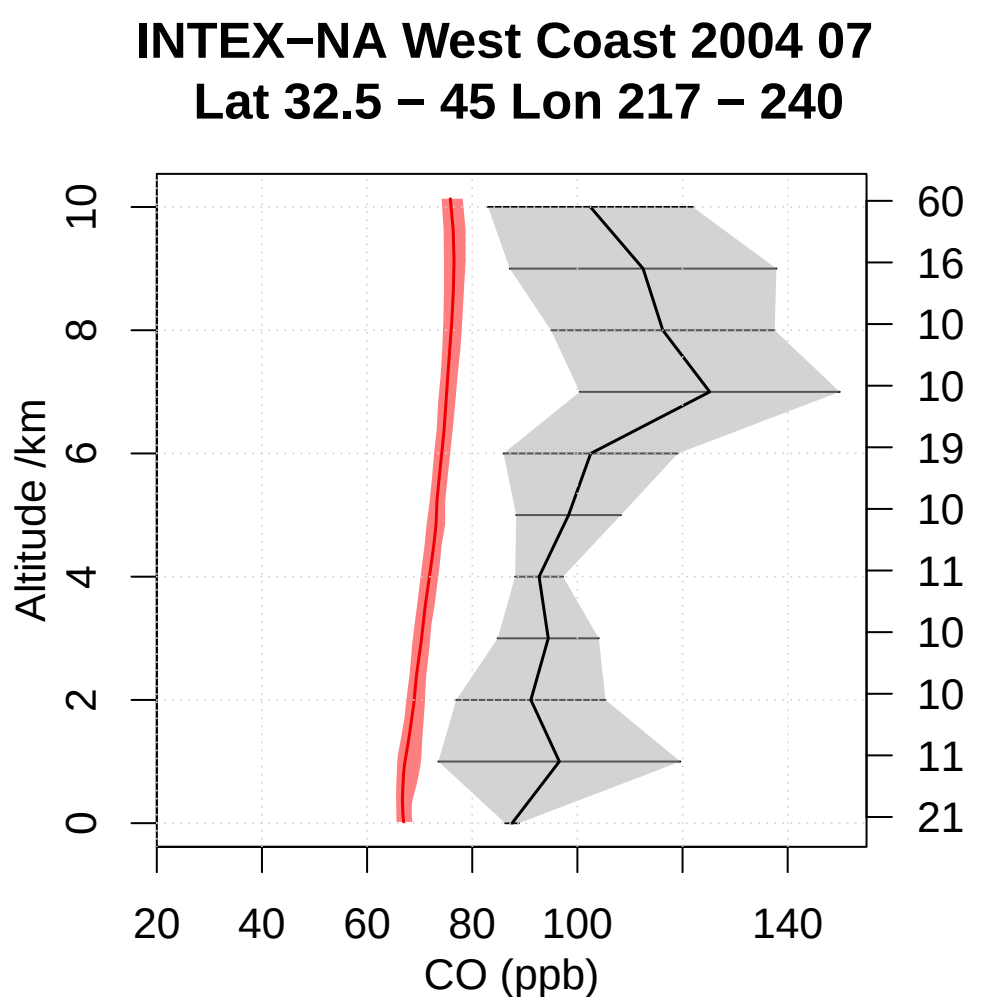
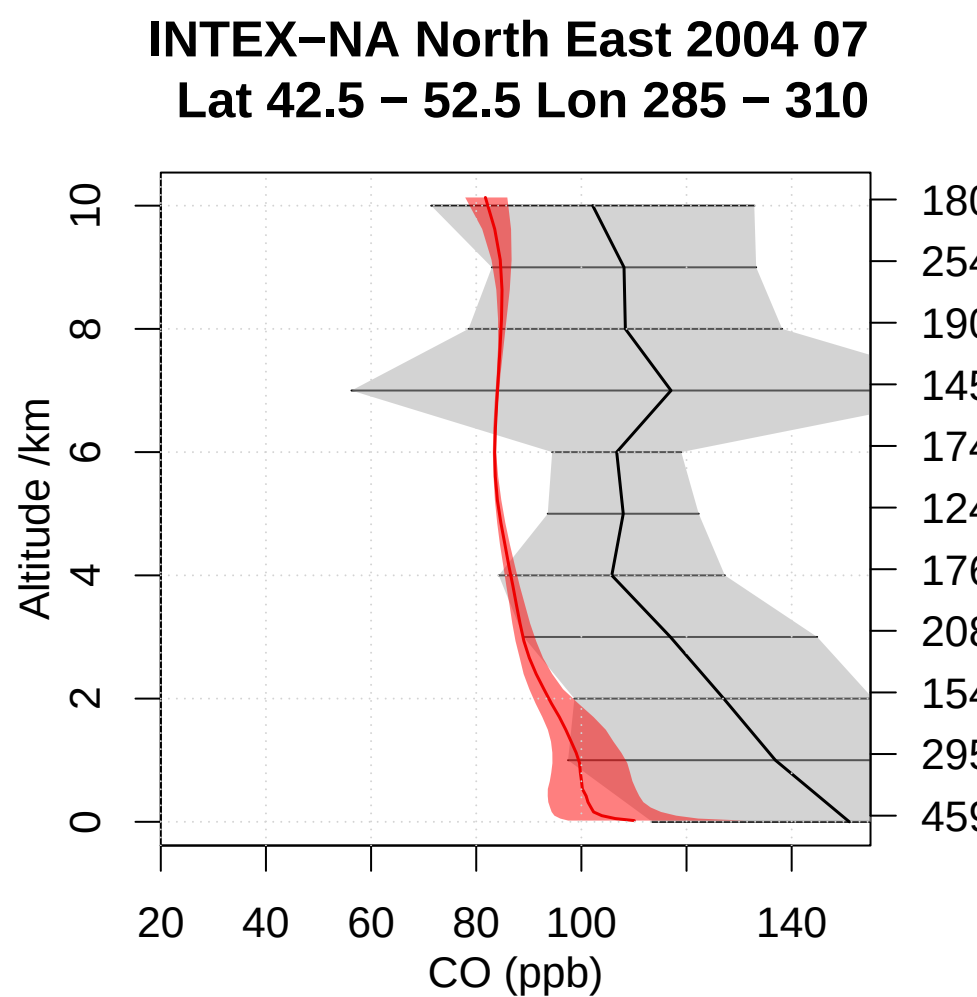
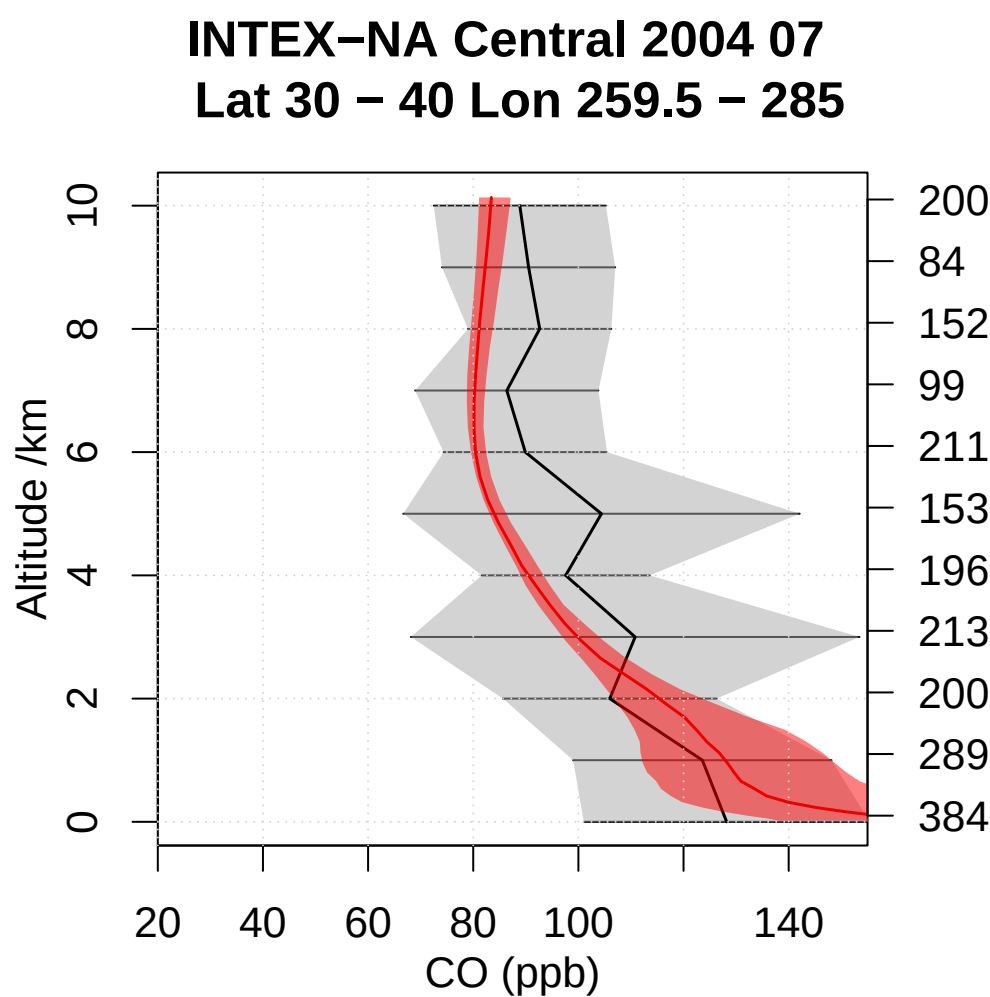
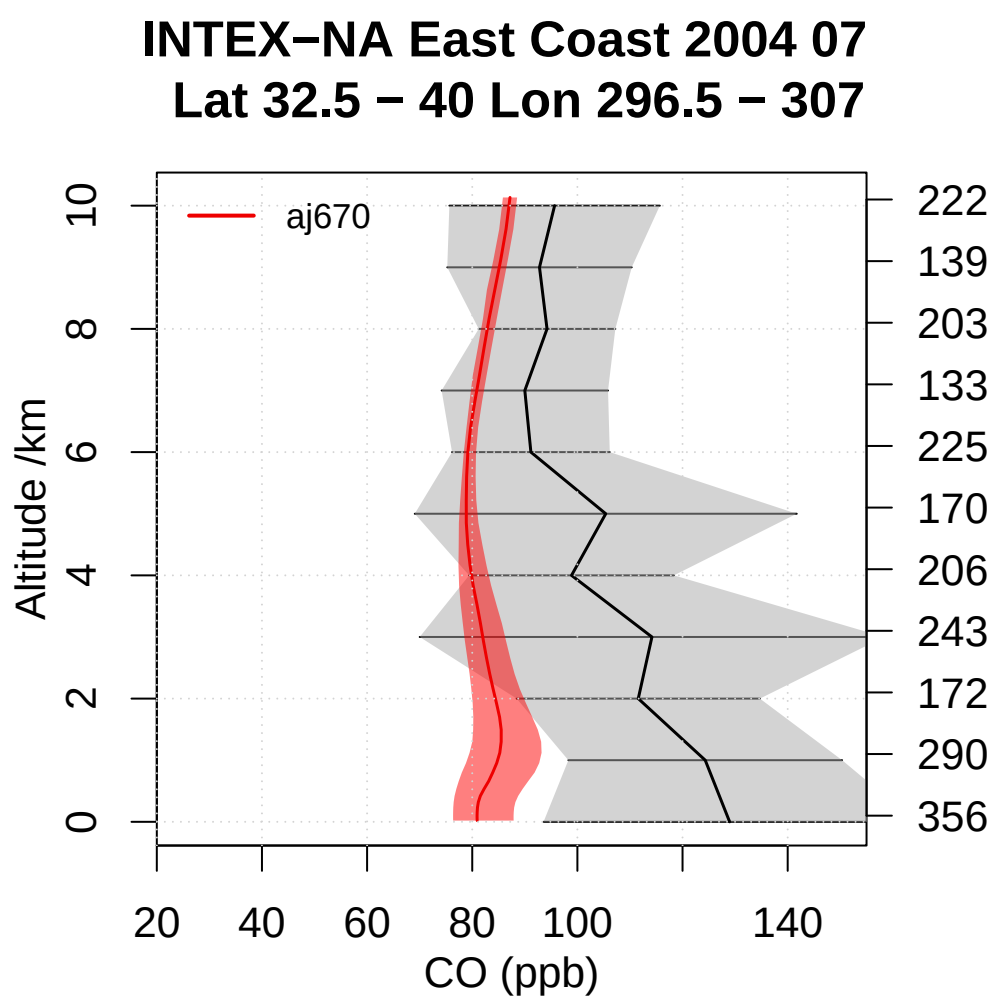
TRACE-A S-Africa 1992 09
Lat -25 – -5 Lon 15 – 35

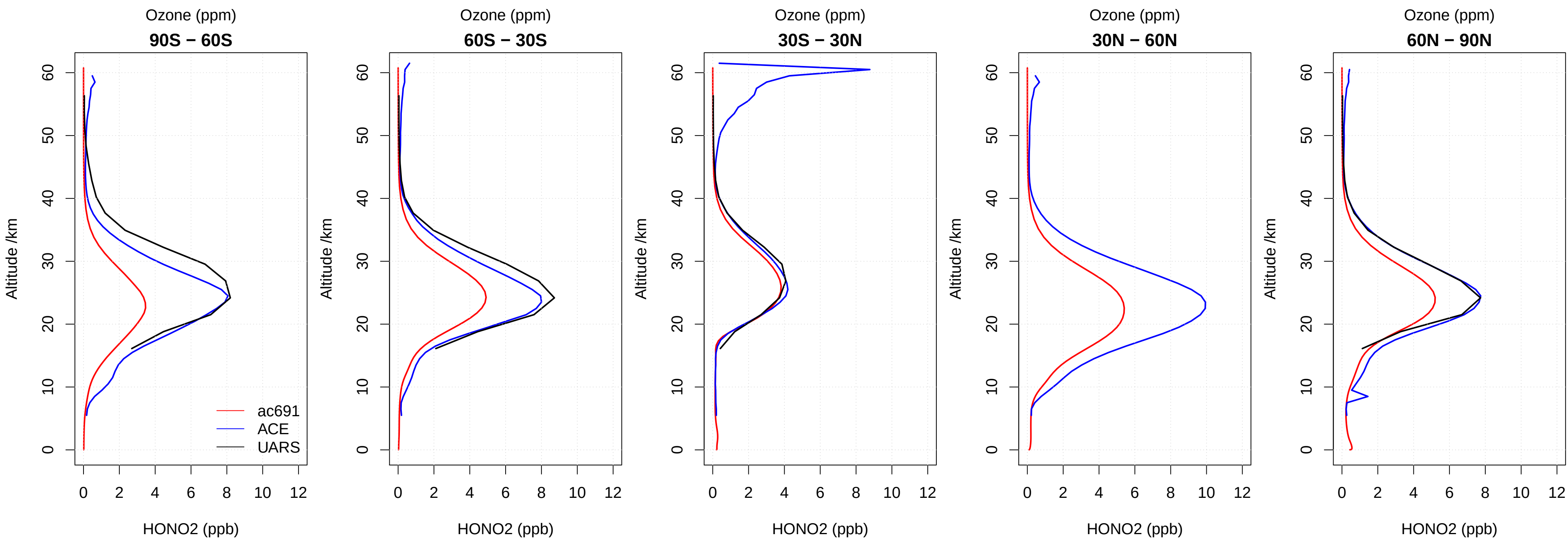
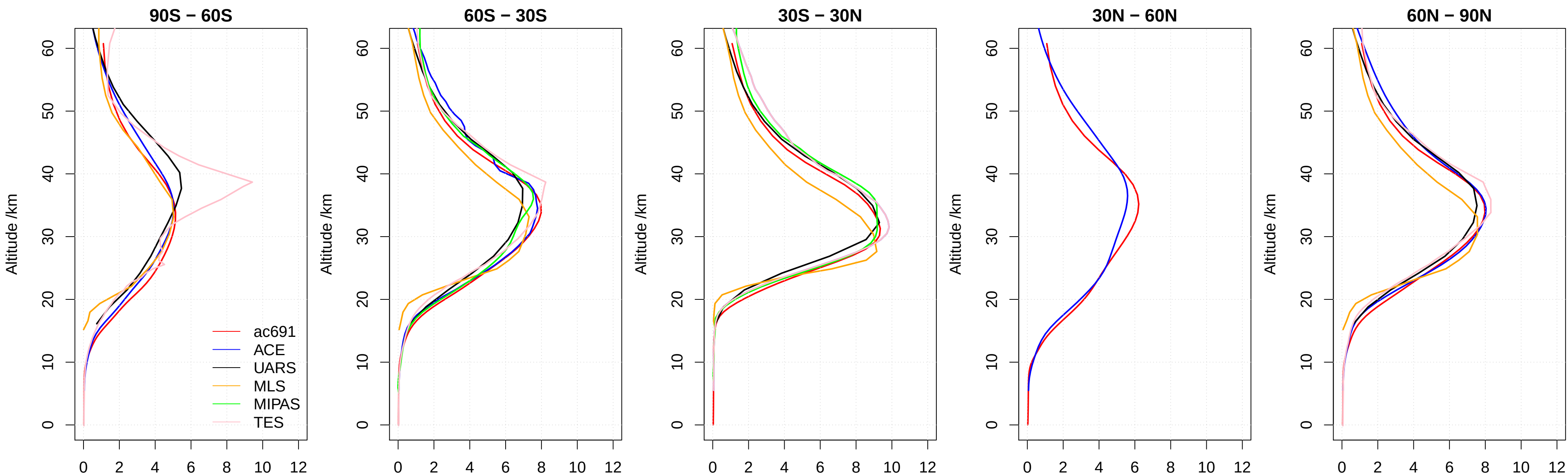


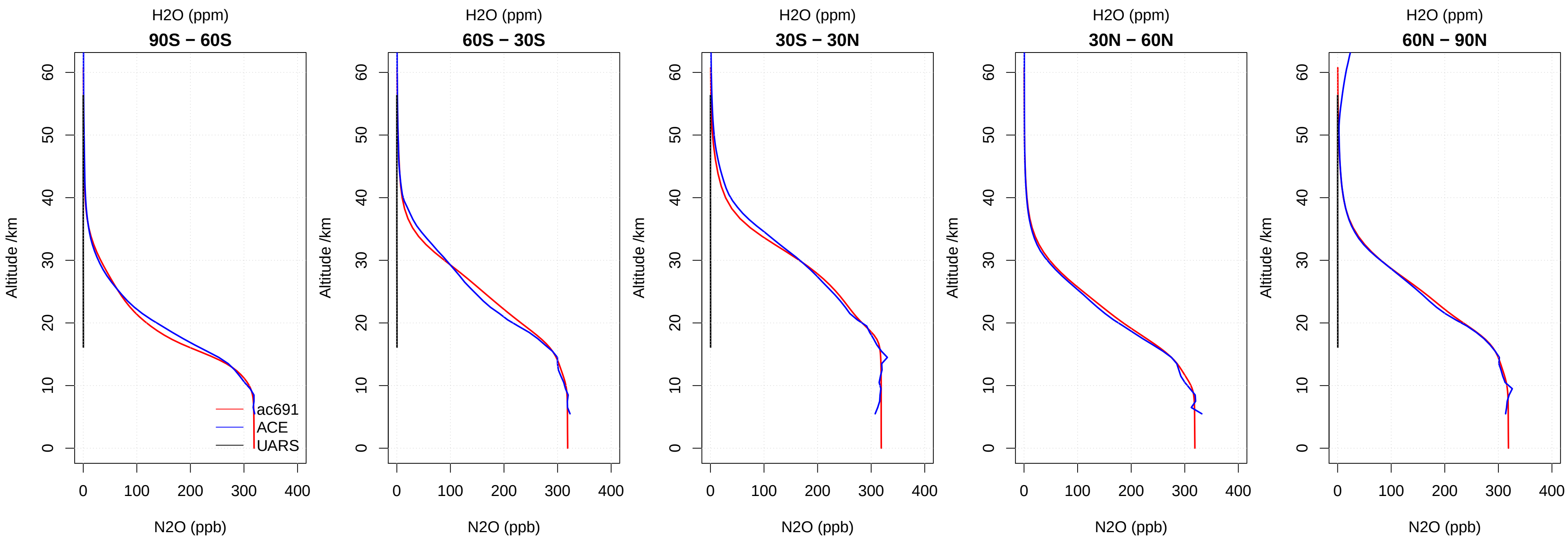
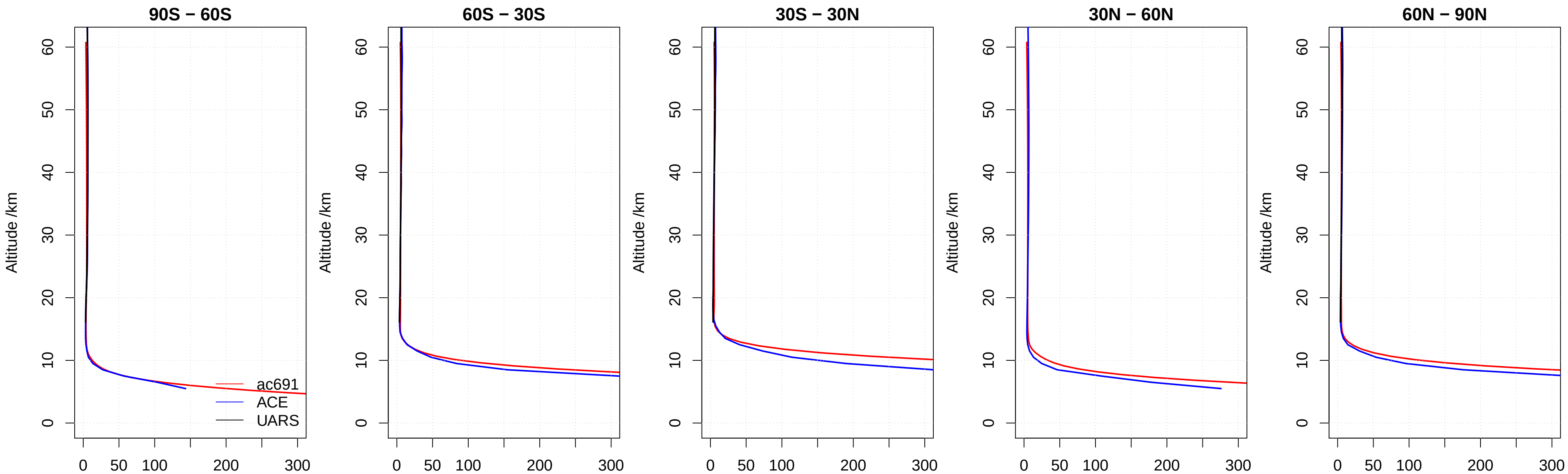
TRACE-A W-Africa Coast 1992 09
Lat -25 – -5 Lon 0 – 10

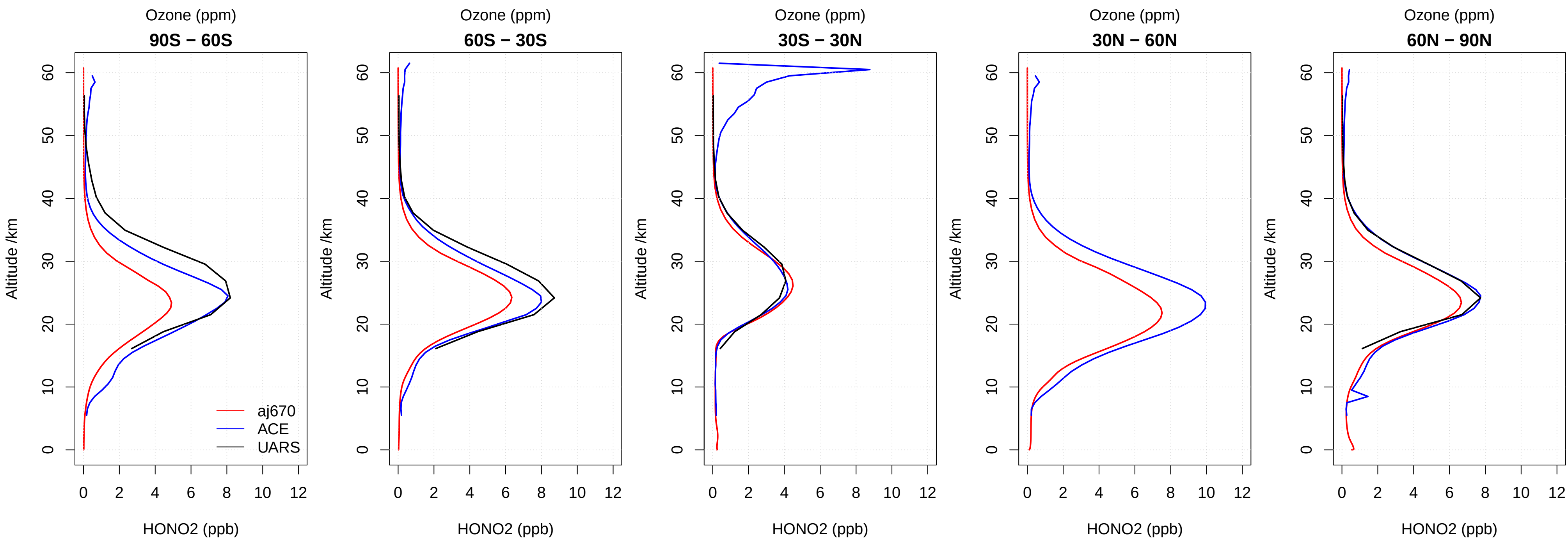
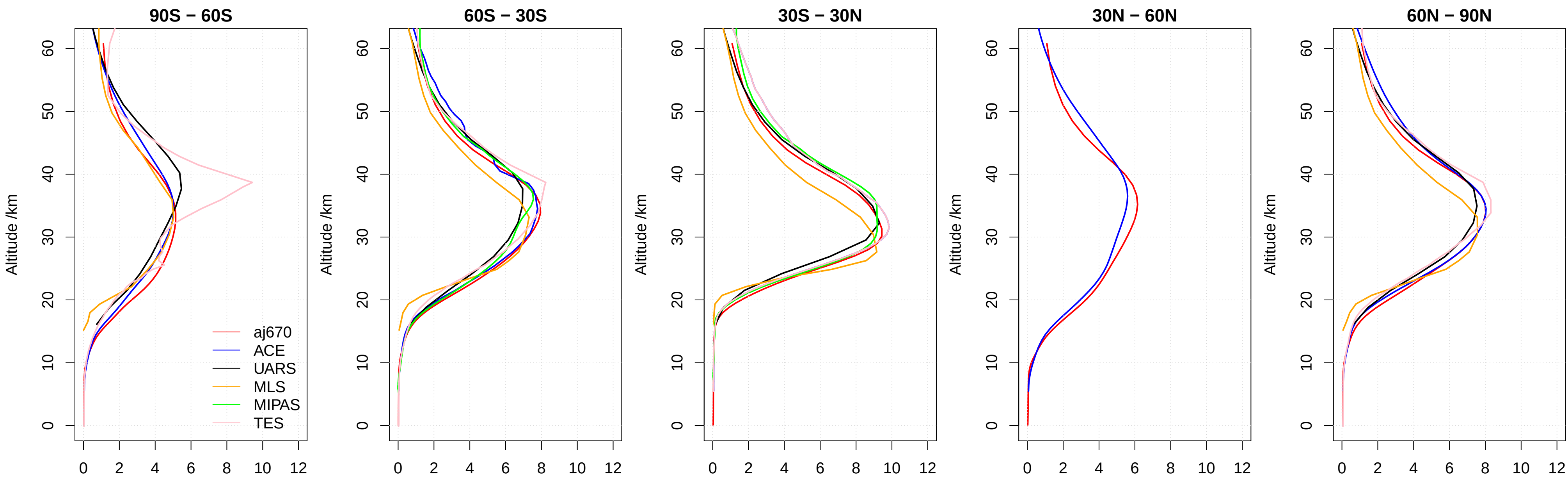


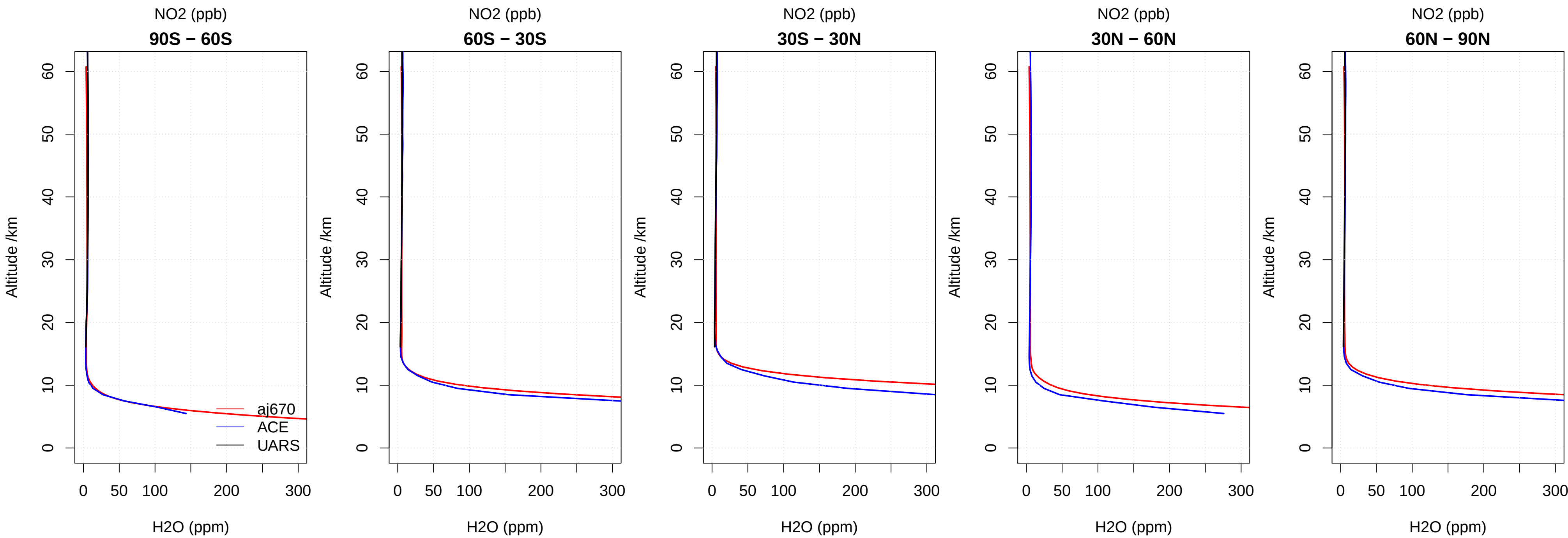
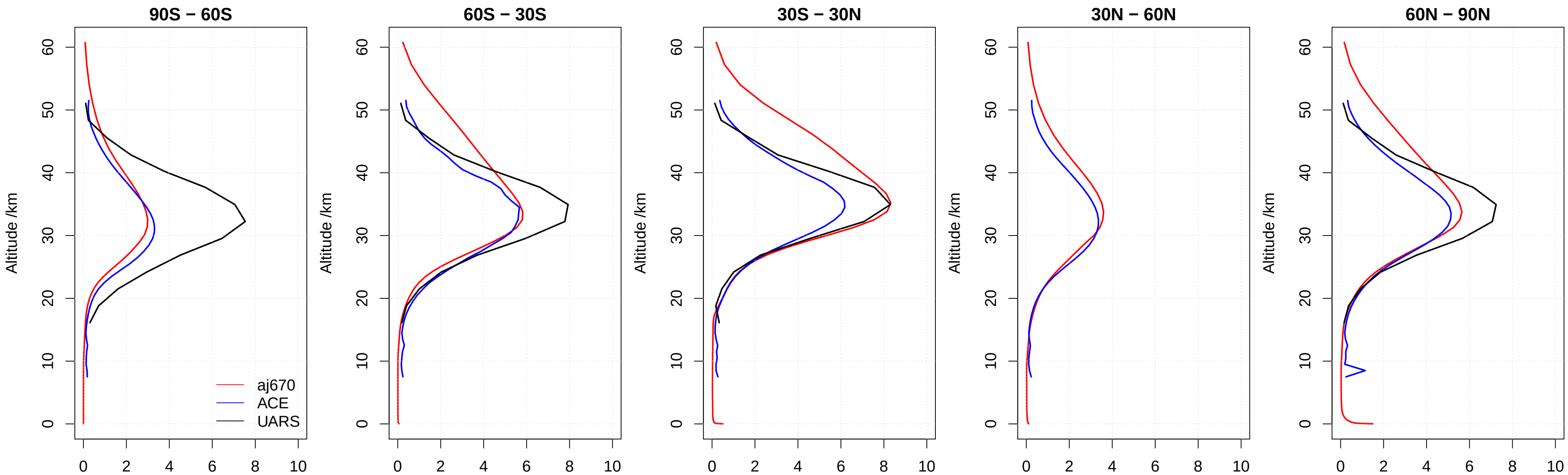
Emmons CO comparison

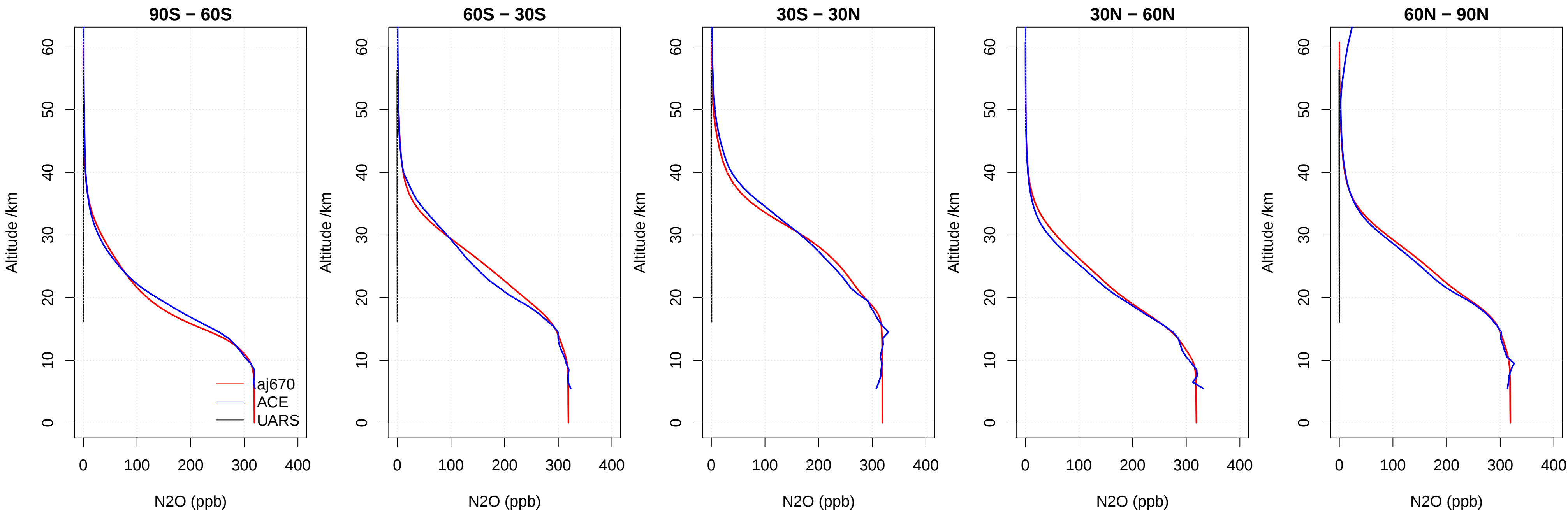






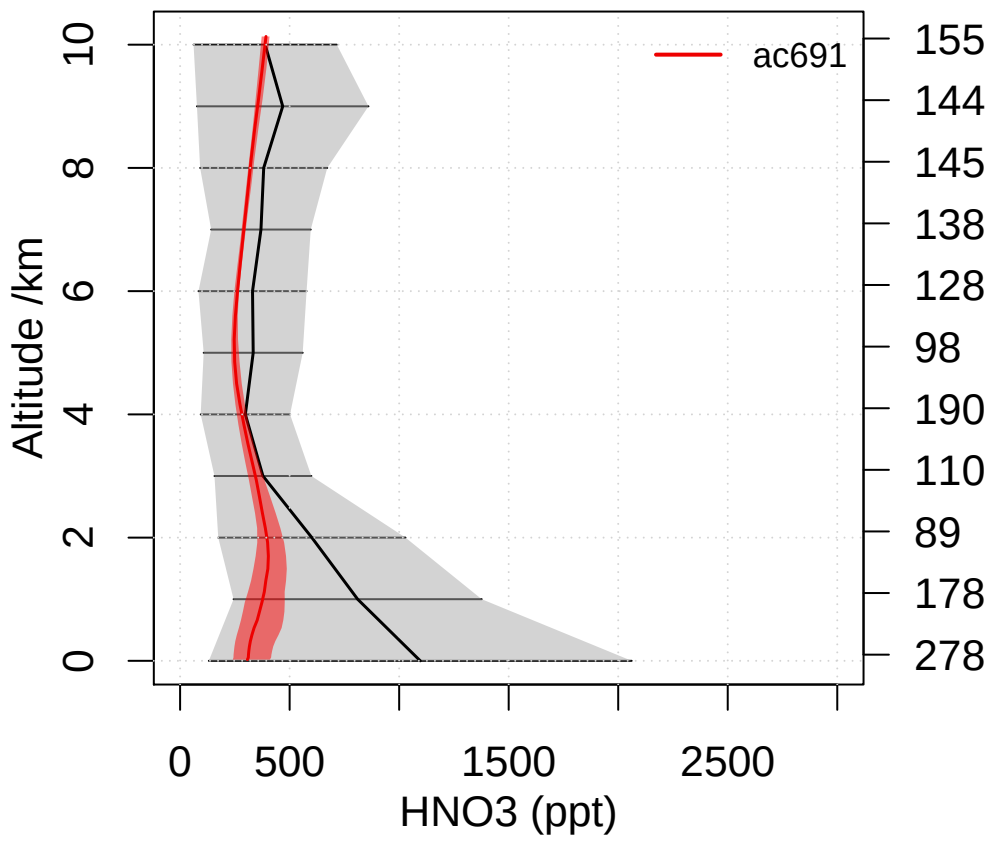




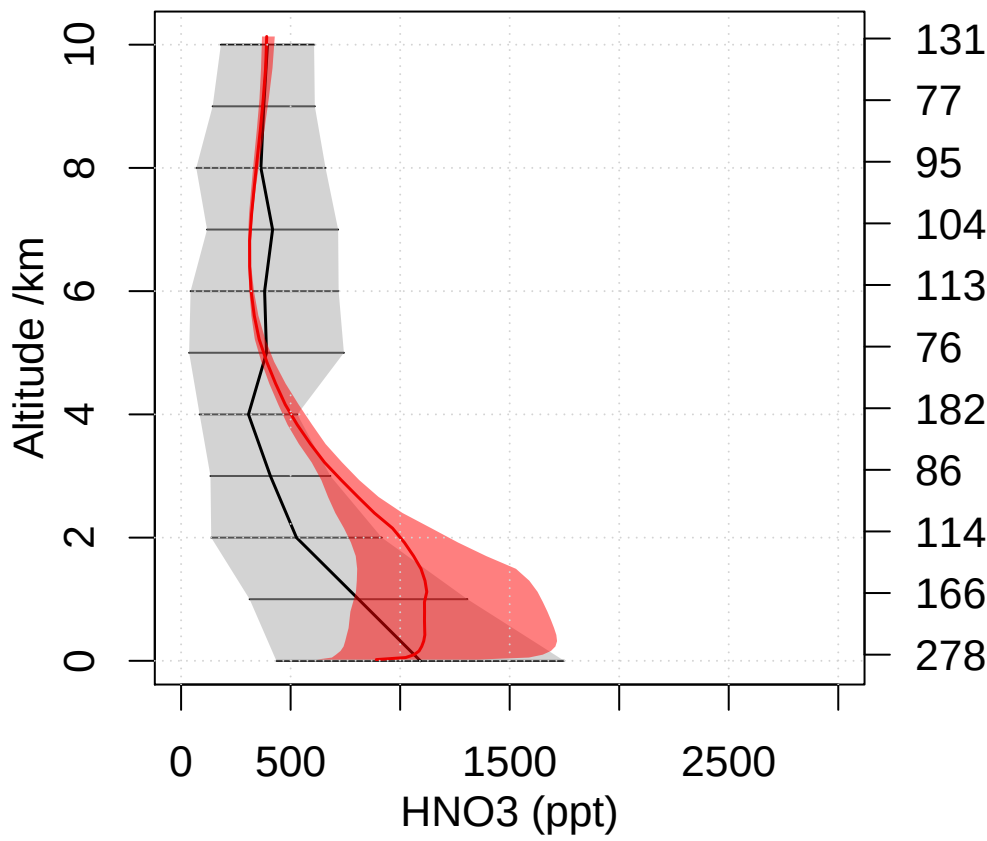


Emmons HNO3 comparison

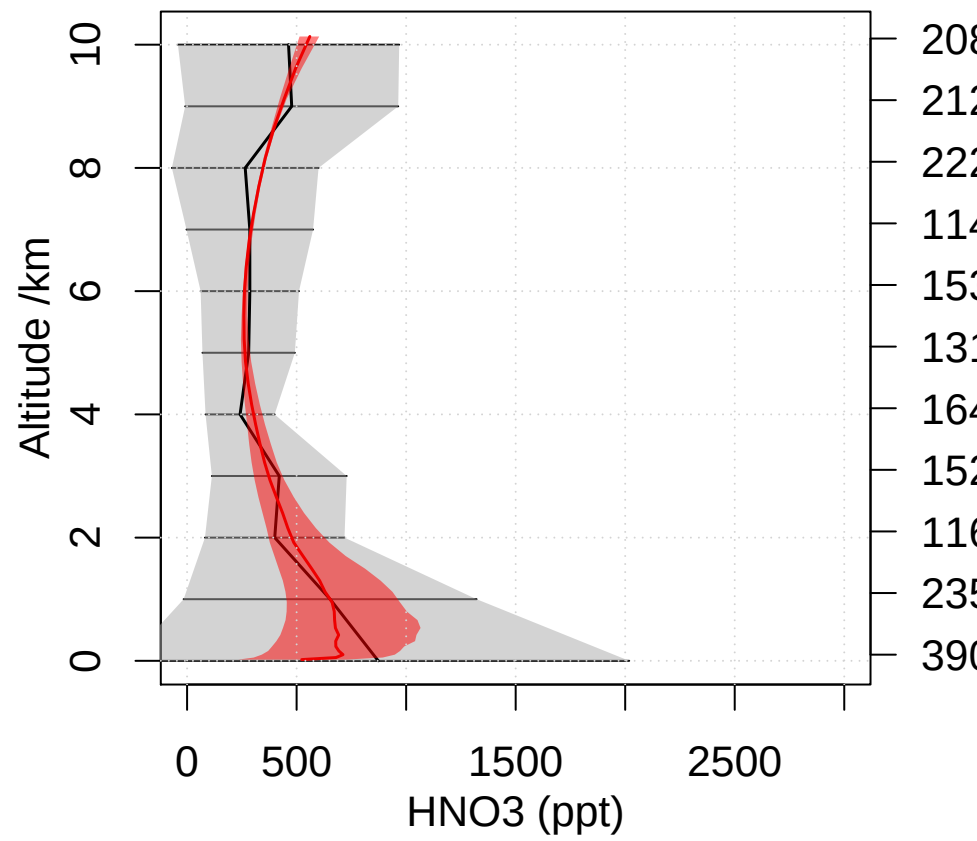
INTEX-NA East Coast 2004 07
Lat 32.5 – 40 Lon 296.5 – 307



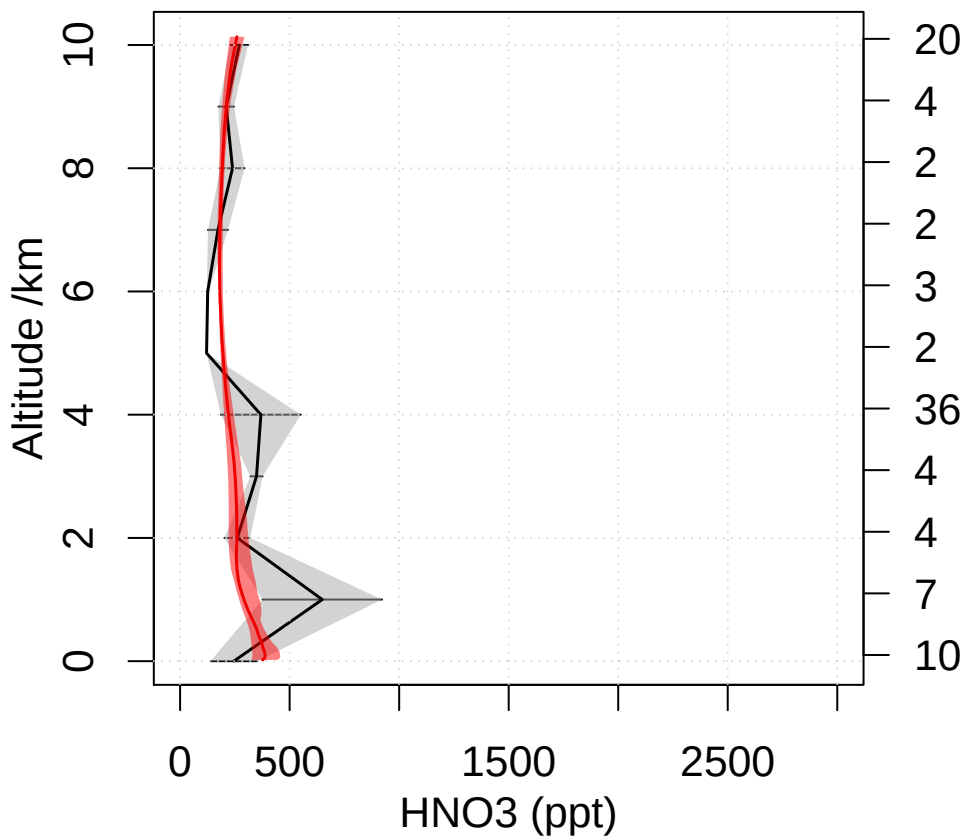
INTEX-NA Central 2004 07
Lat 30 – 40 Lon 259.5 – 285



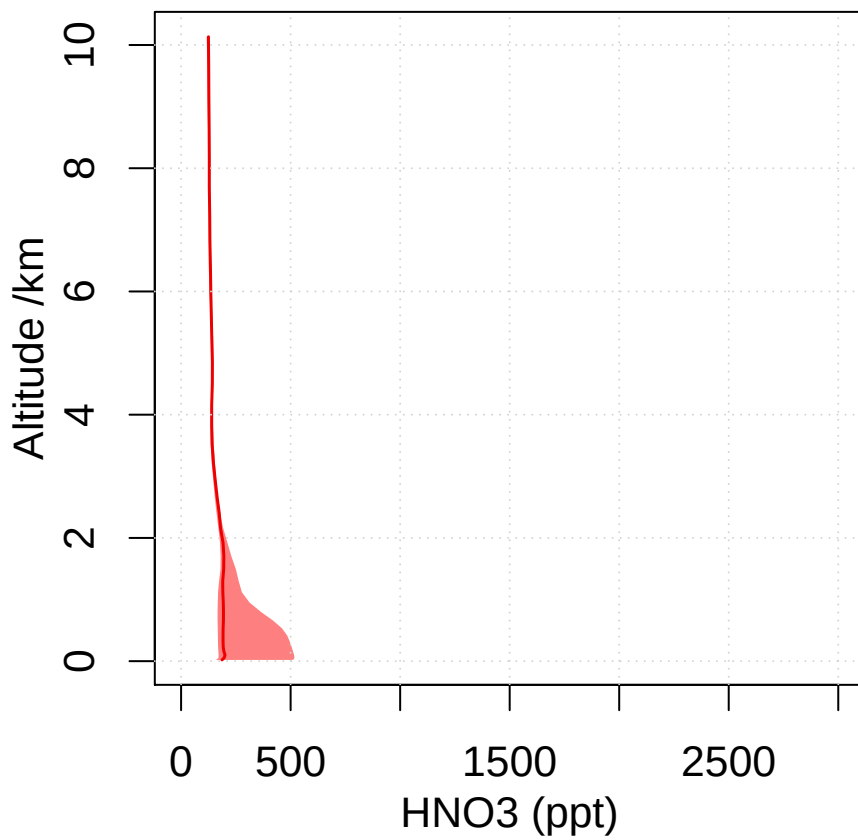
INTEX-NA North East 2004 07
Lat 42.5 – 52.5 Lon 285 – 310



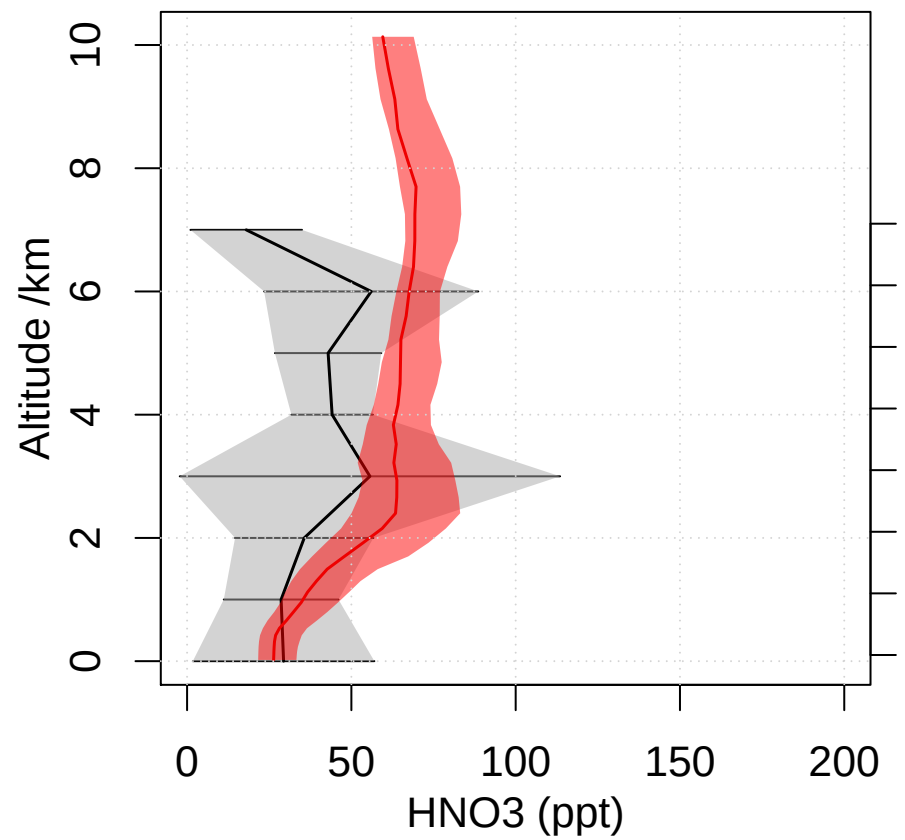
INTEX-NA West Coast 2004 07
Lat 32.5 – 45 Lon 217 – 240



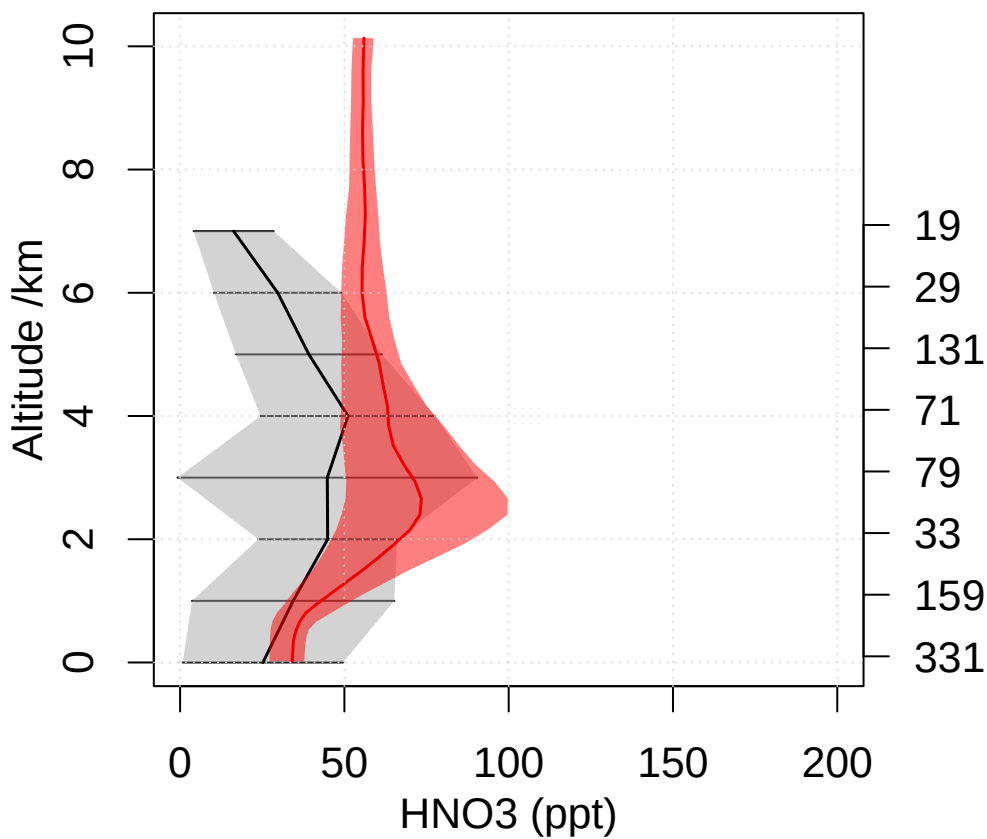
OP3 2008 07
Lat 2.5 – 7.5 Lon 112.5 – 120



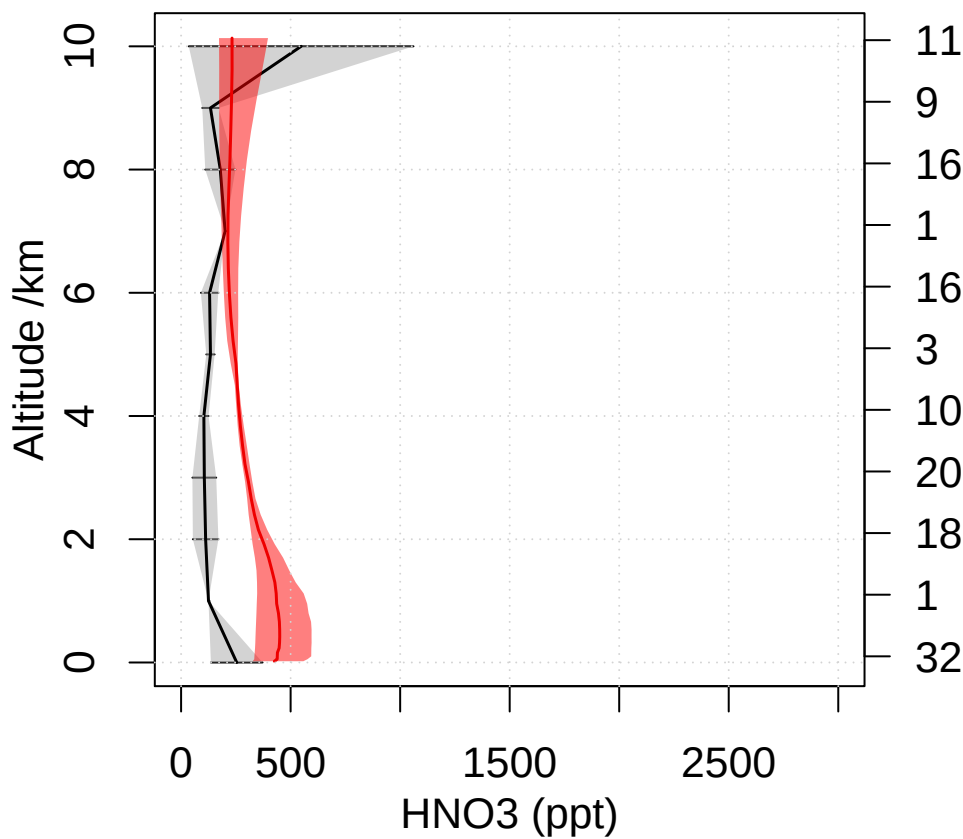
PEM-Tropics-B Christmas-Island 1999 07
Lat 0 – 10 Lon 200 – 220



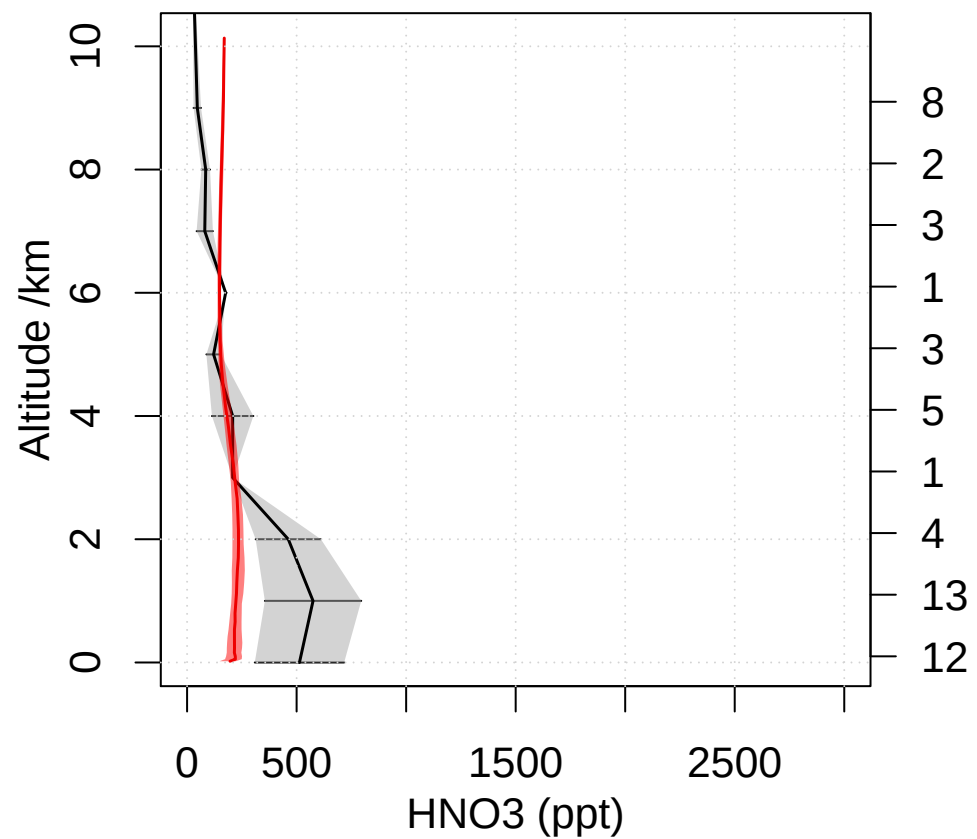
PEM-Tropics-B Tahiti 1999 03
Lat -20 – 0 Lon 200 – 230



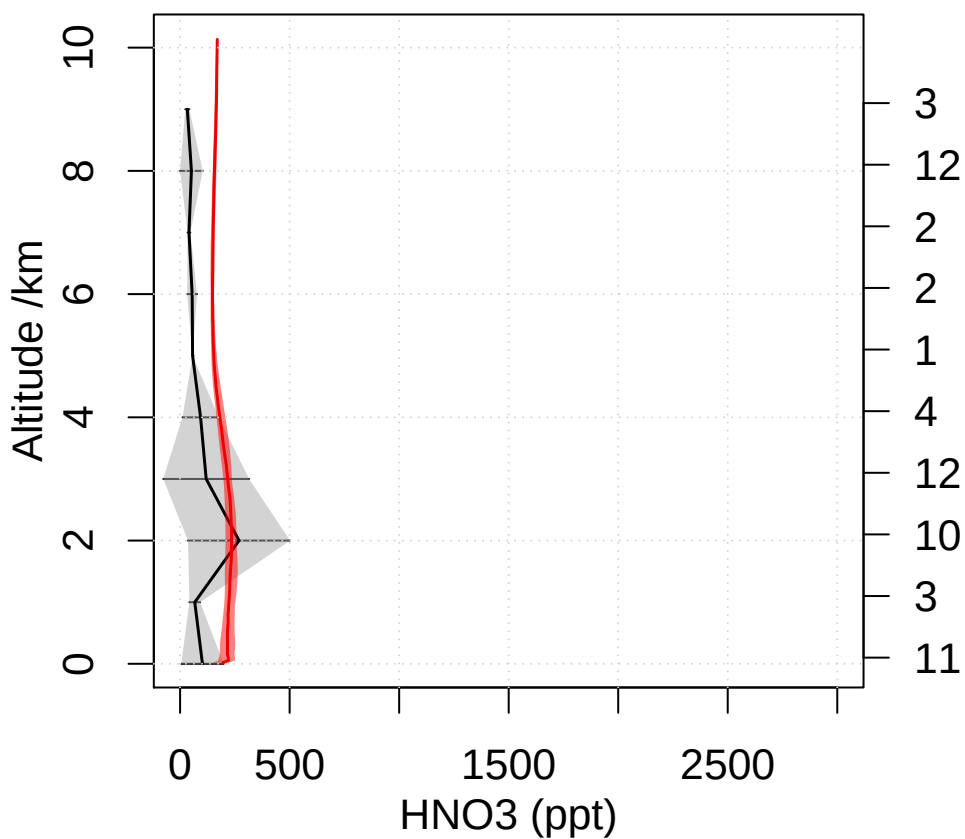
PEM-West-B Japan 1994 02
Lat 25 – 40 Lon 135 – 150



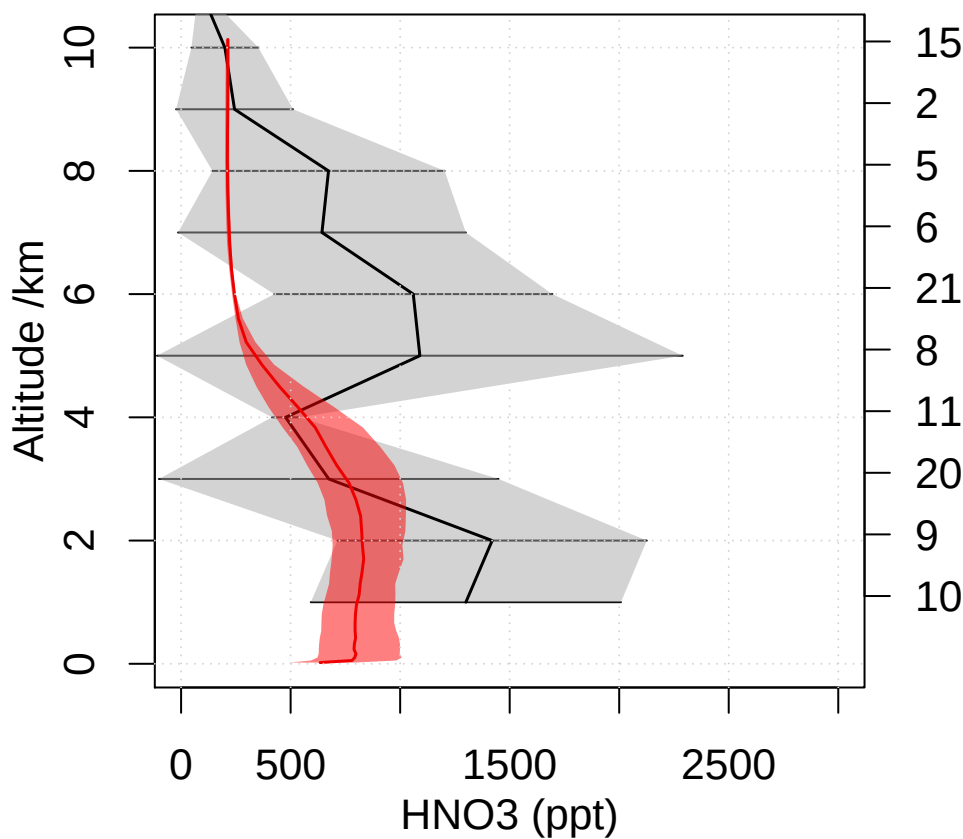
TRACE-A E-Brazil 1992 09
Lat -15 – -5 Lon 310 – 320



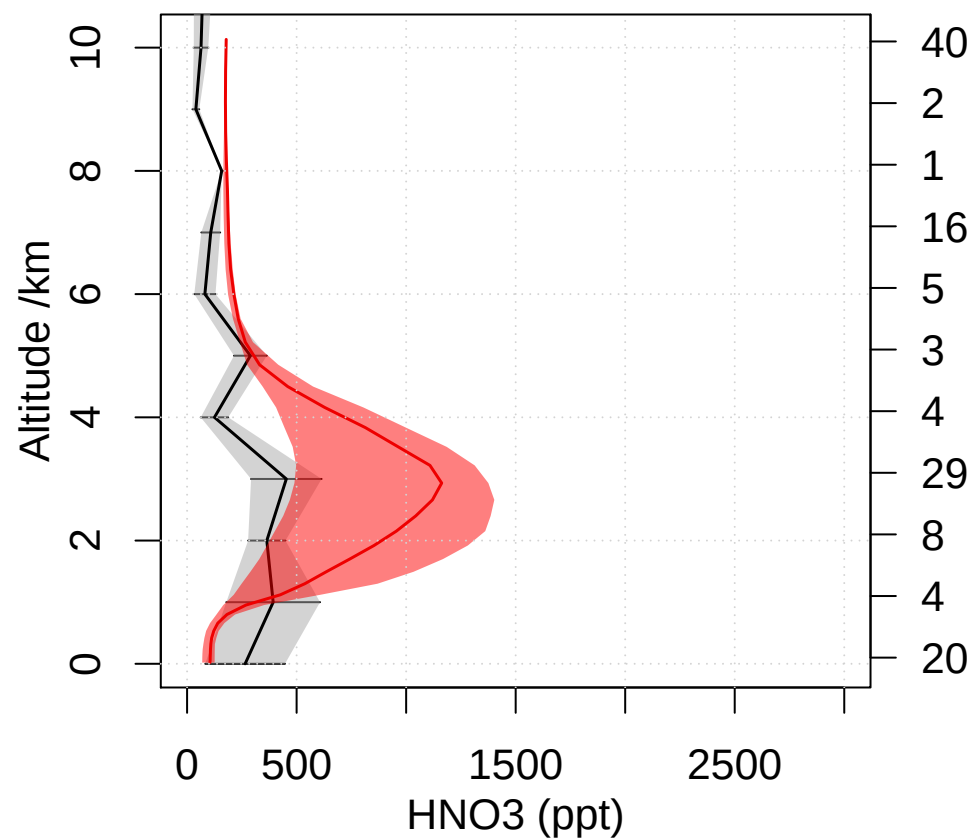
TRACE-A E-Brazil Coast 1992 09
Lat -35 – -25 Lon 310 – 320



TRACE-A S-Africa 1992 09
Lat -25 – -5 Lon 15 – 35

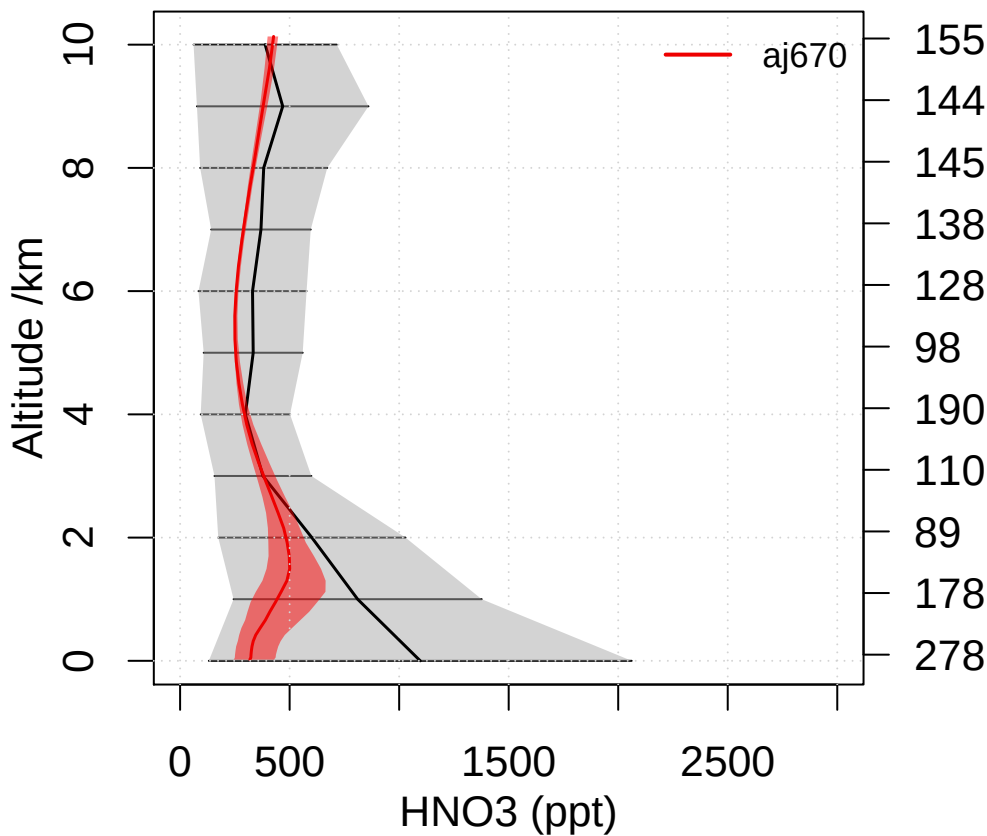


TRACE-A W-Africa Coast 1992 09
Lat -25 – -5 Lon 0 – 10

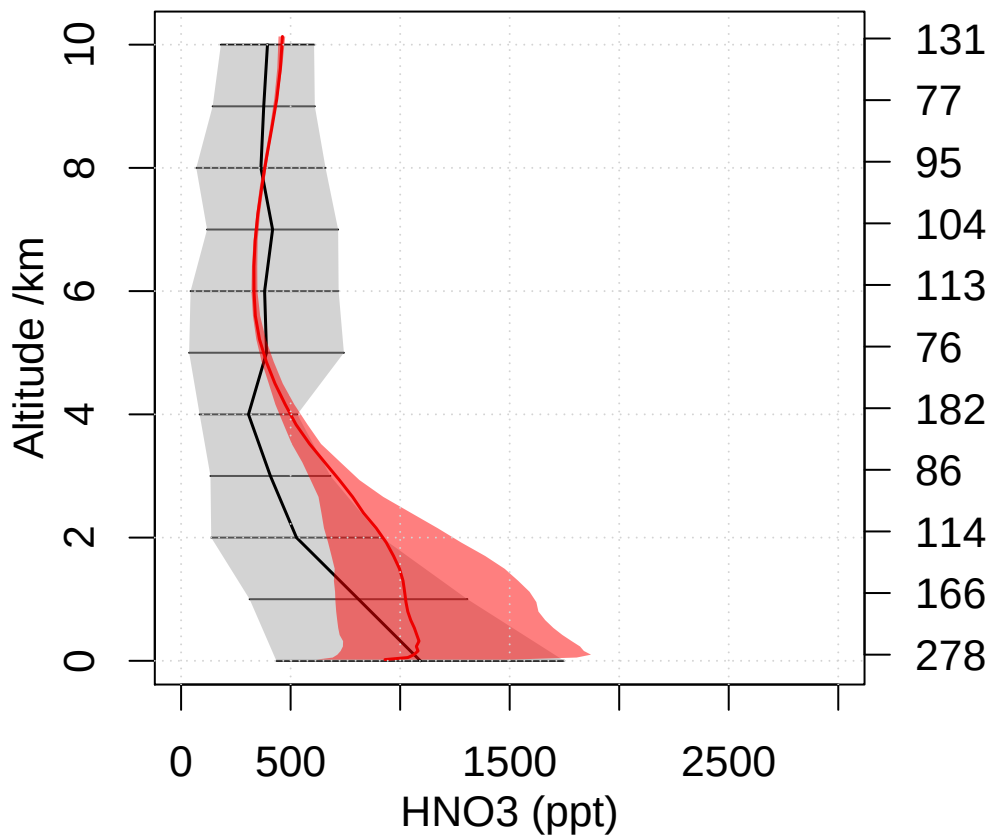


Emmons HNO3 comparison

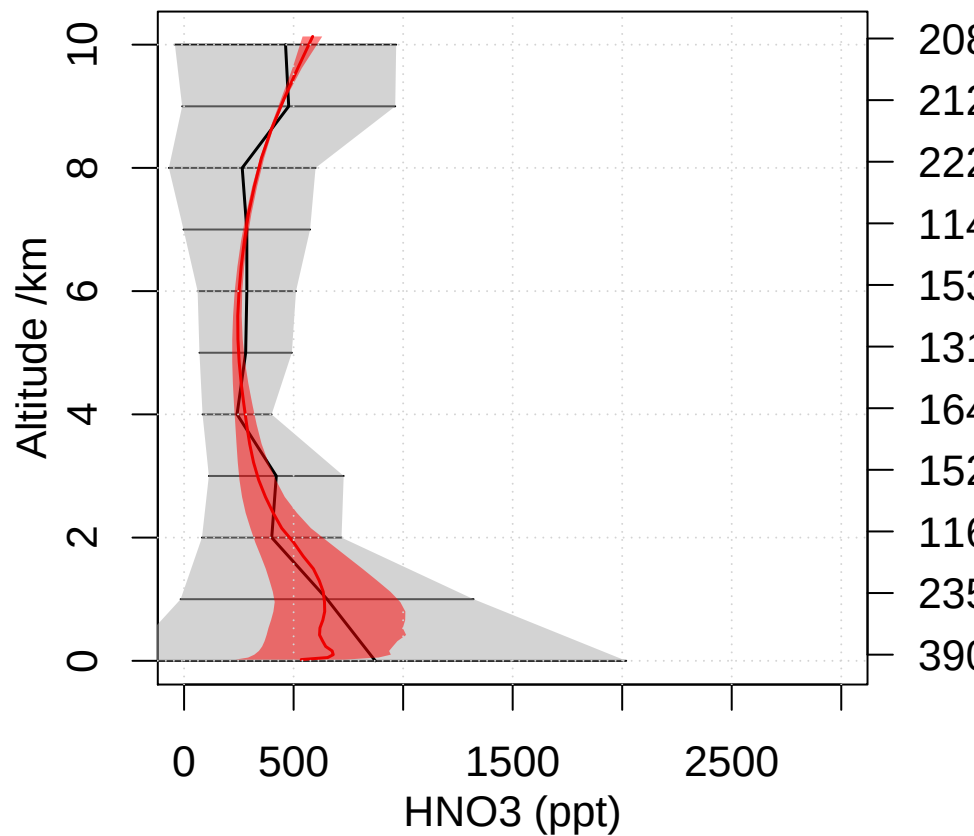
INTEX-NA East Coast 2004 07
Lat 32.5 – 40 Lon 296.5 – 307



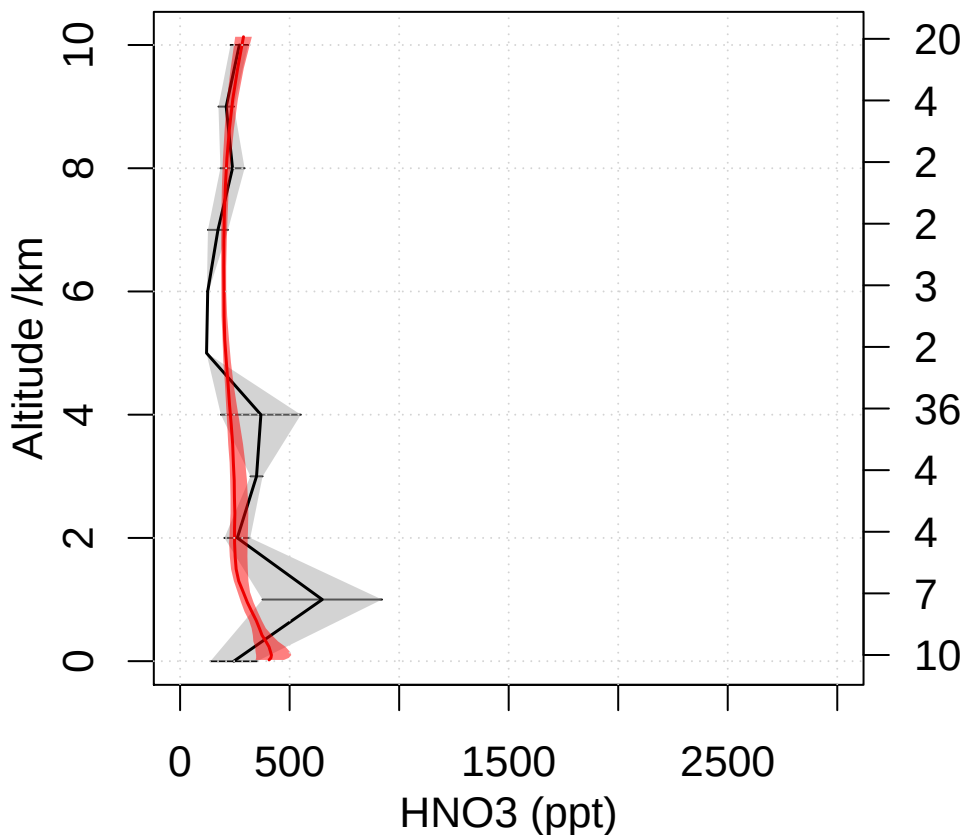
INTEX-NA Central 2004 07
Lat 30 – 40 Lon 259.5 – 285



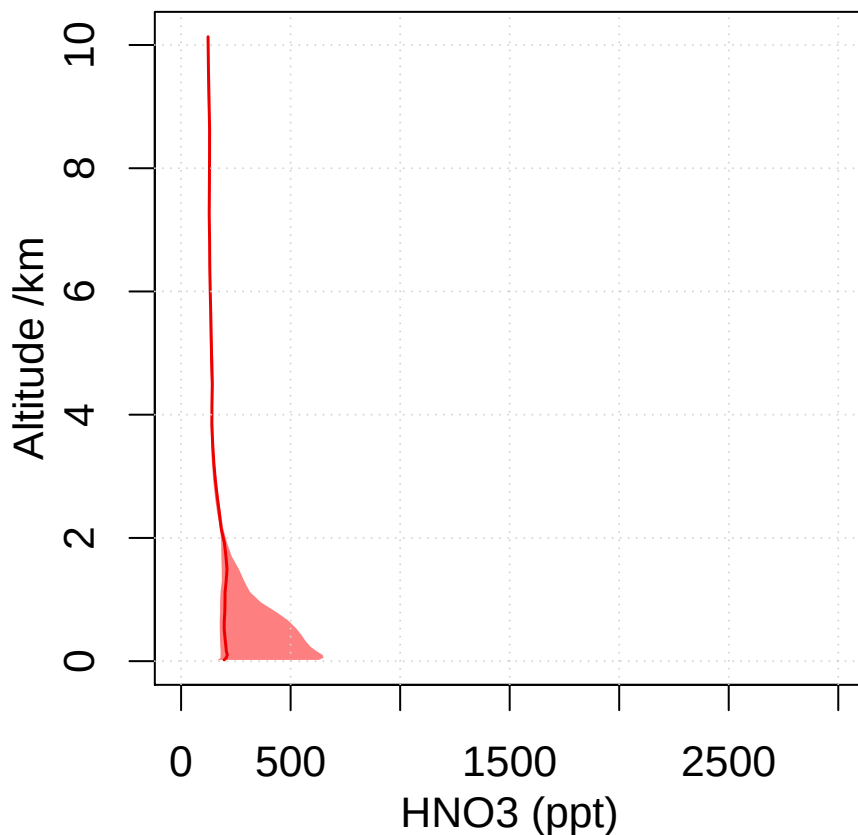
INTEX-NA North East 2004 07
Lat 42.5 – 52.5 Lon 285 – 310



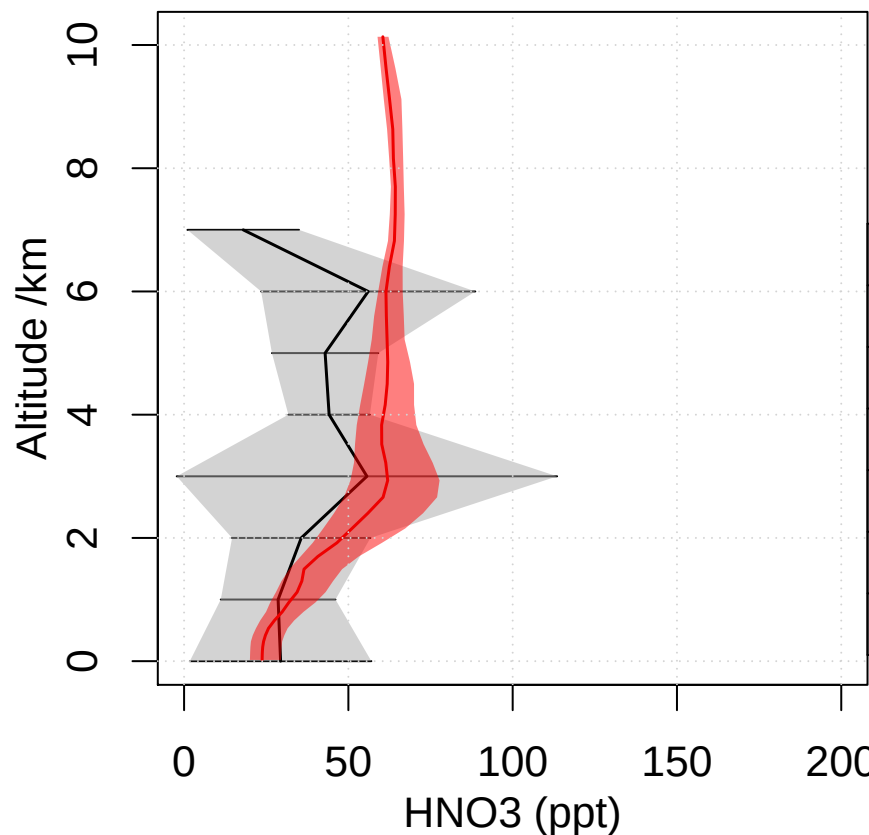
INTEX-NA West Coast 2004 07
Lat 32.5 – 45 Lon 217 – 240



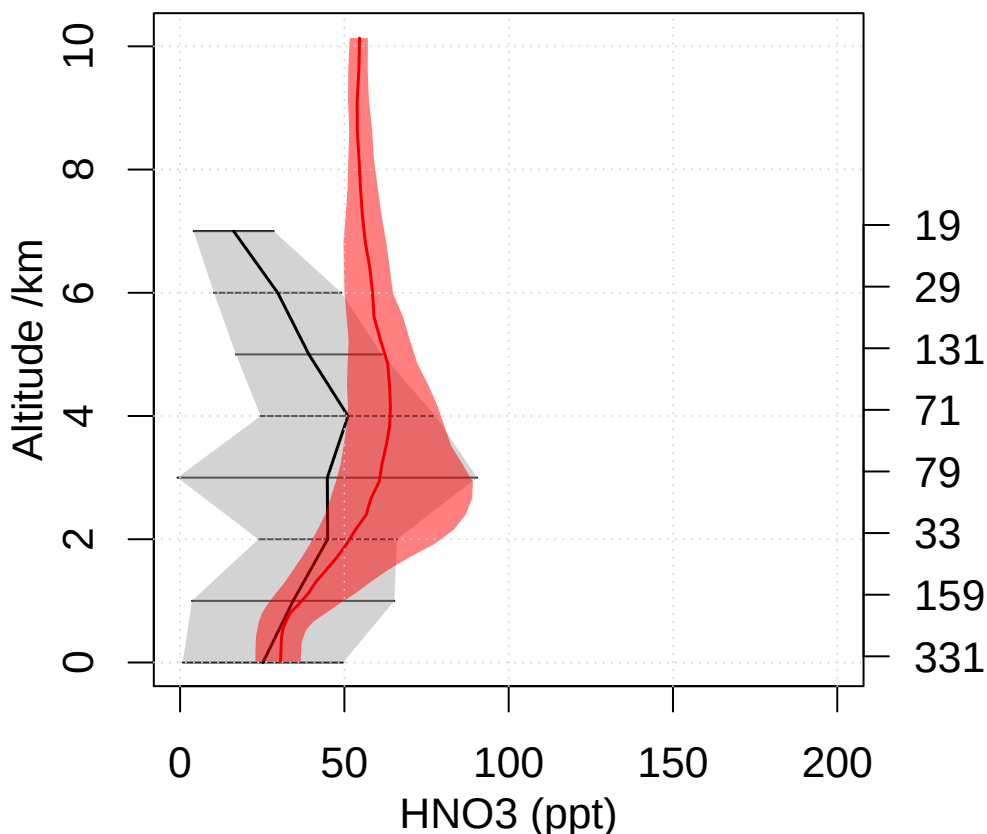
OP3 2008 07
Lat 2.5 – 7.5 Lon 112.5 – 120



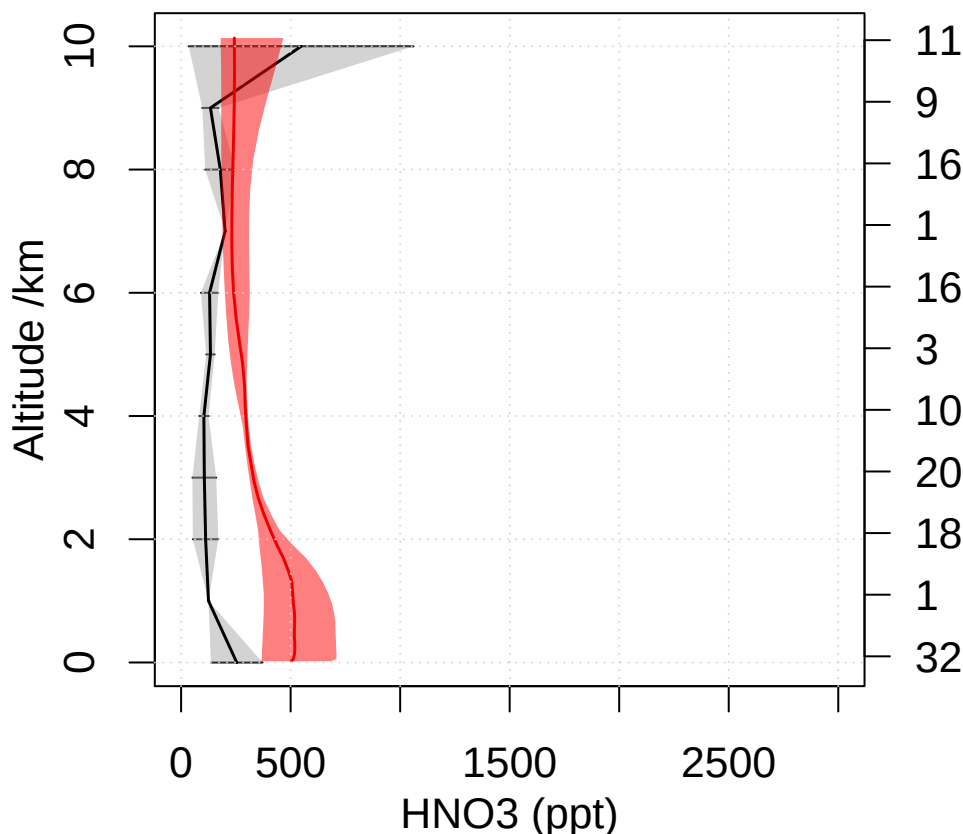
PEM-Tropics-B Christmas-Island 1999 07
Lat 0 – 10 Lon 200 – 220



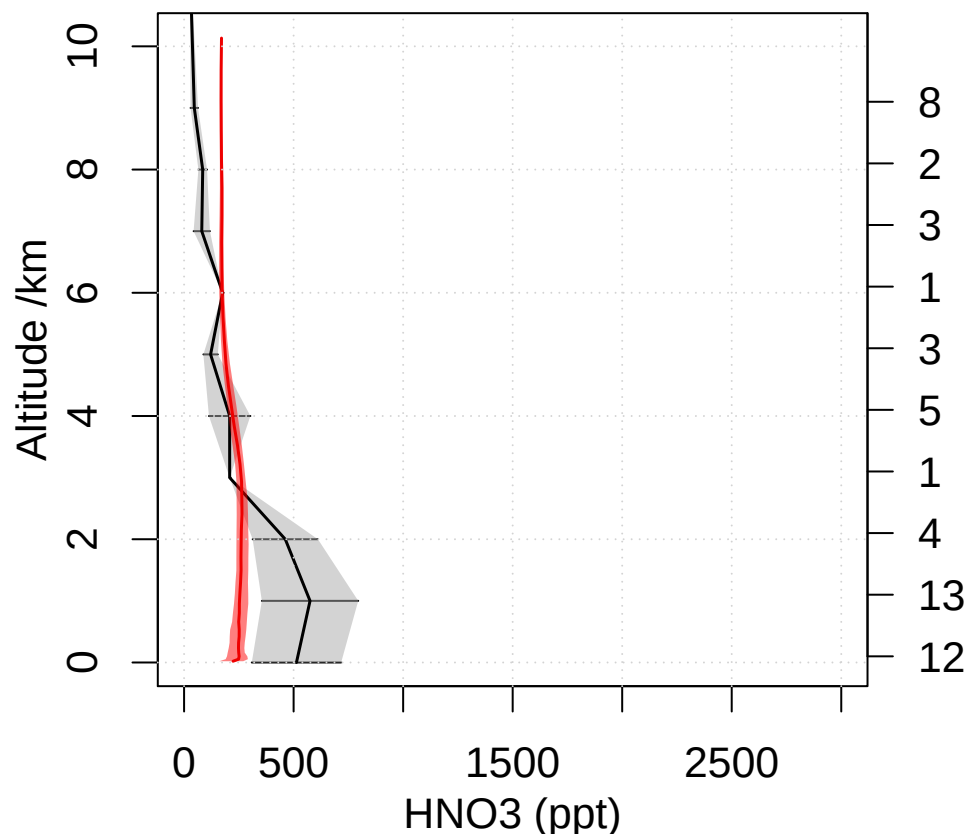
PEM-Tropics-B Tahiti 1999 03
Lat -20 – 0 Lon 200 – 230



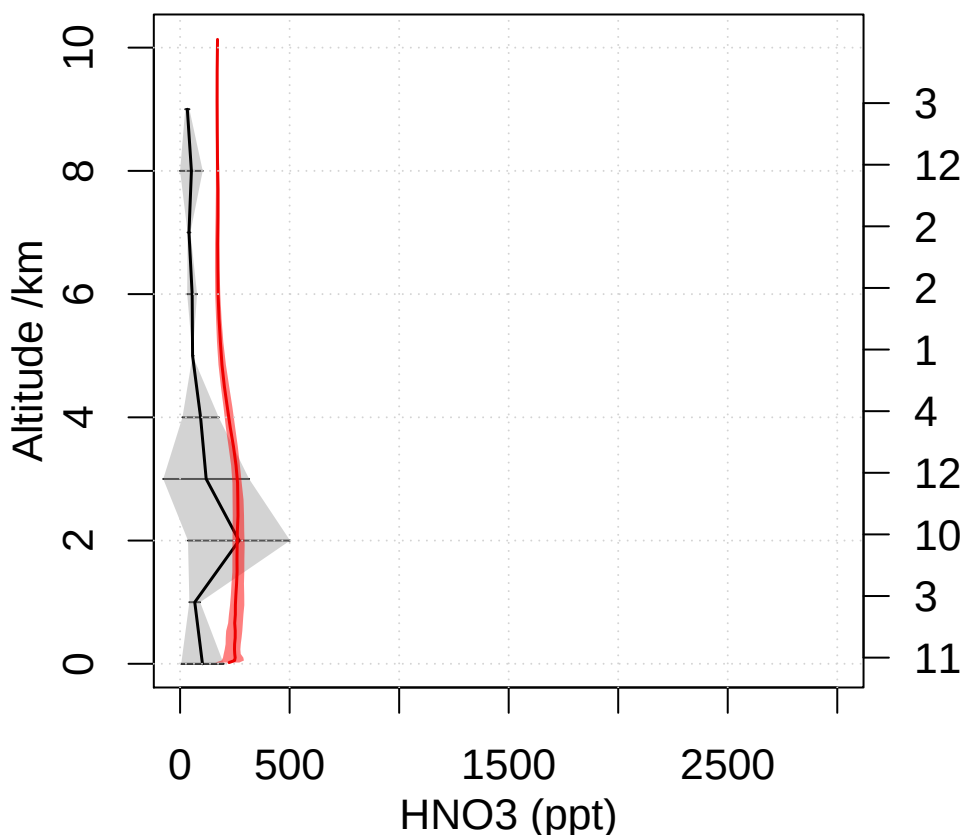
PEM-West-B Japan 1994 02
Lat 25 – 40 Lon 135 – 150



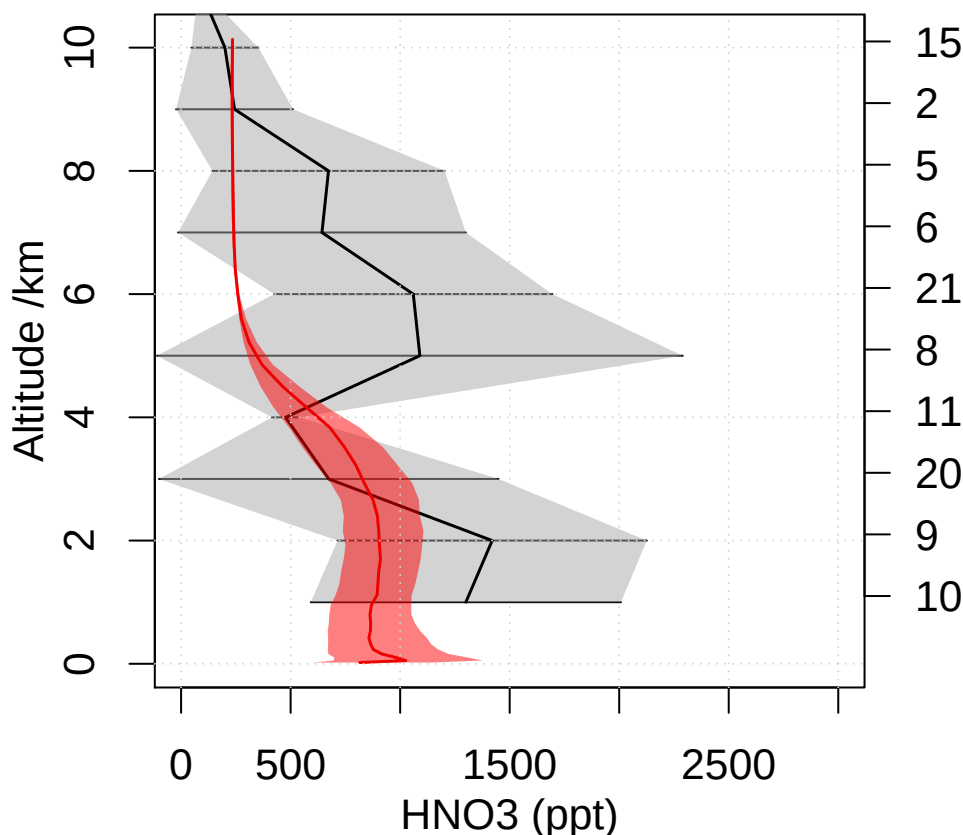
TRACE-A E-Brazil 1992 09
Lat -15 – -5 Lon 310 – 320



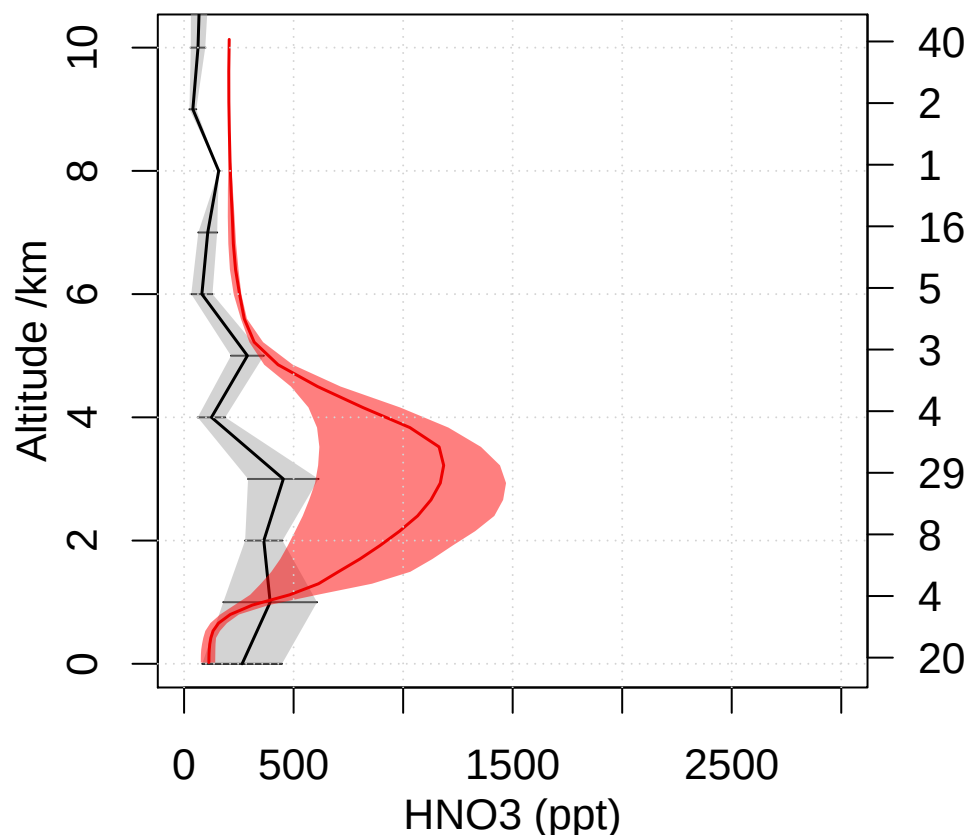
TRACE-A E-Brazil Coast 1992 09
Lat -35 – -25 Lon 310 – 320



TRACE-A S-Africa 1992 09
Lat -25 – -5 Lon 15 – 35

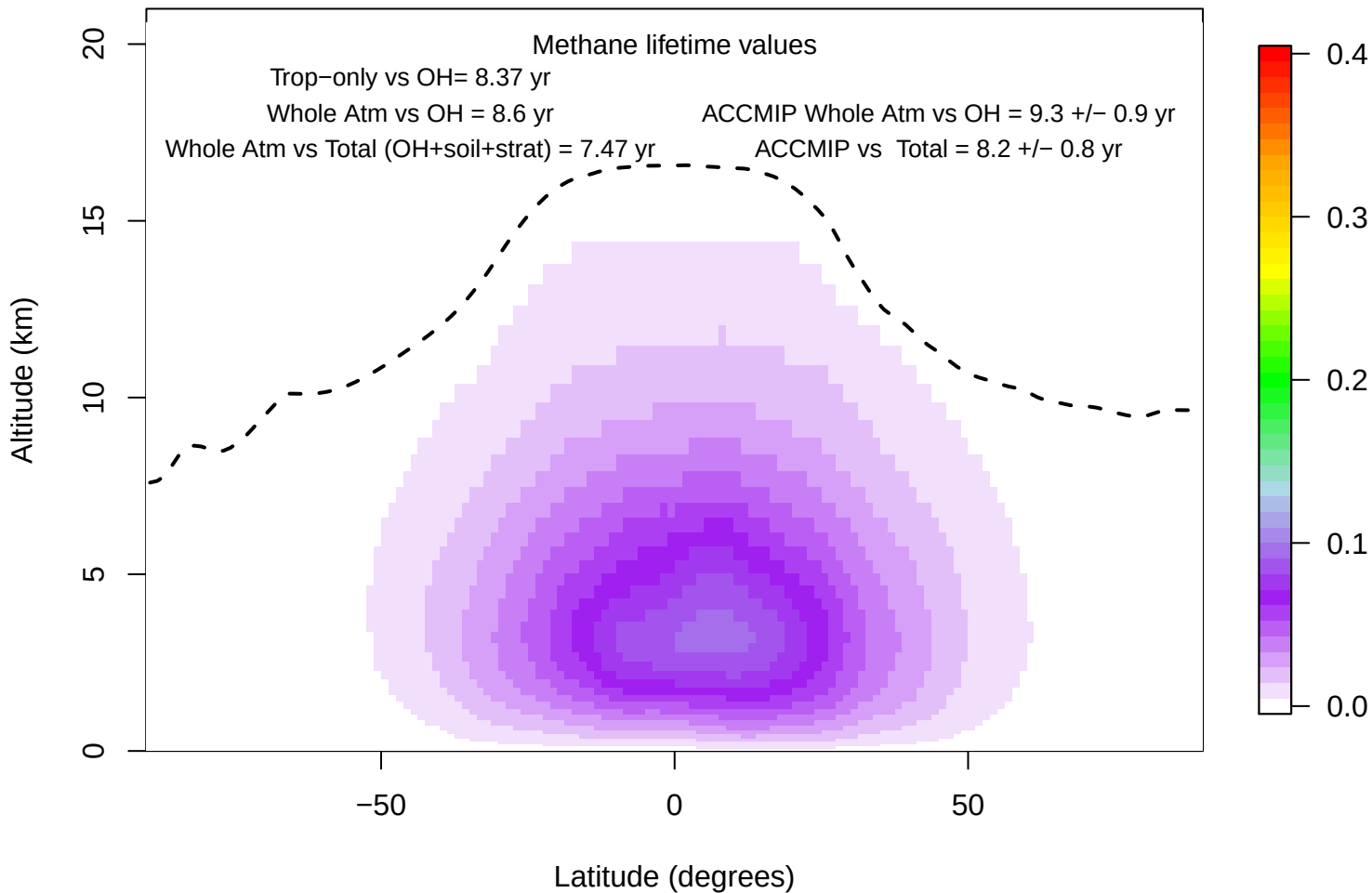


TRACE-A W-Africa Coast 1992 09
Lat -25 – -5 Lon 0 – 10



UKCA ac691

% CH₄ + OH flux (moles cm⁻³ s⁻¹)



UKCA aj670

% CH₄ + OH flux (moles cm⁻³ s⁻¹)

