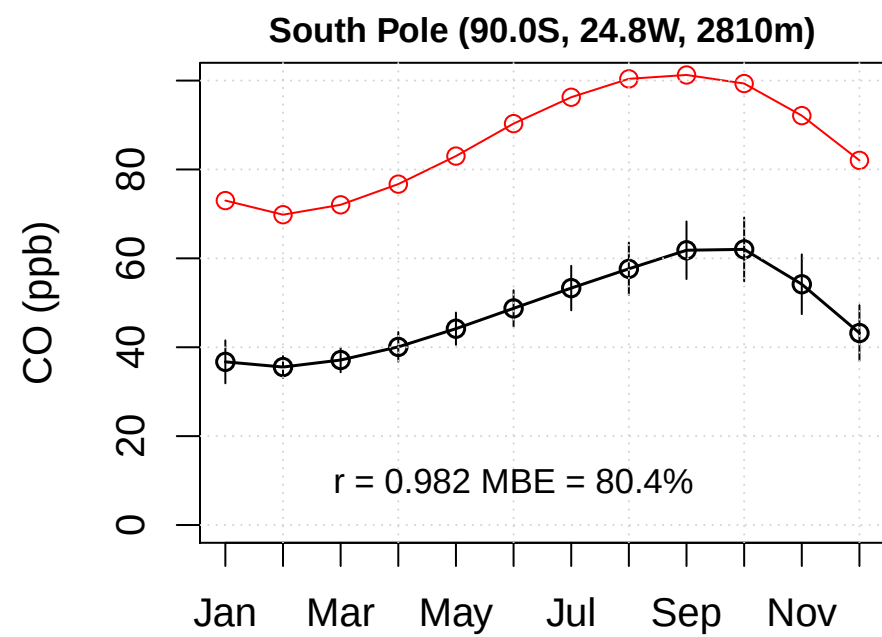
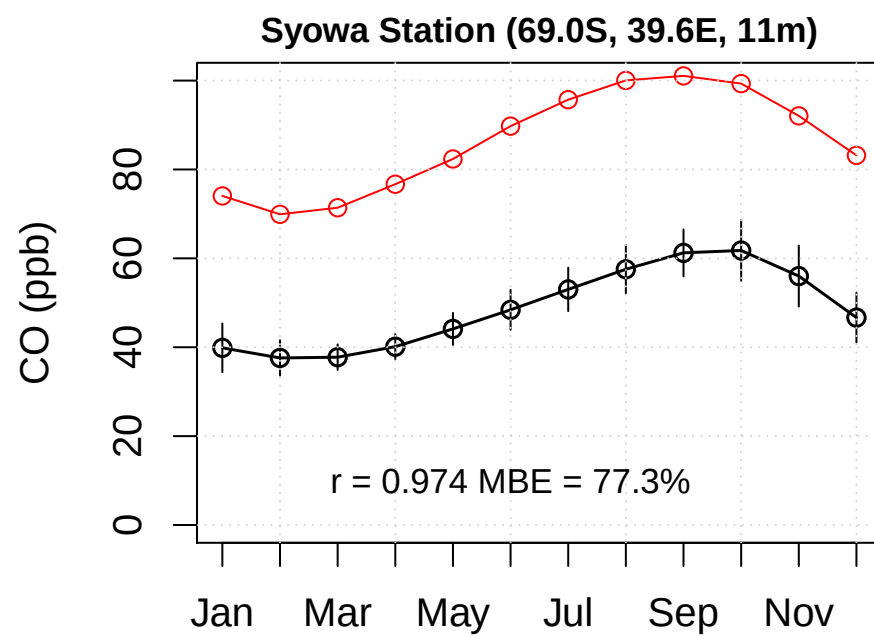
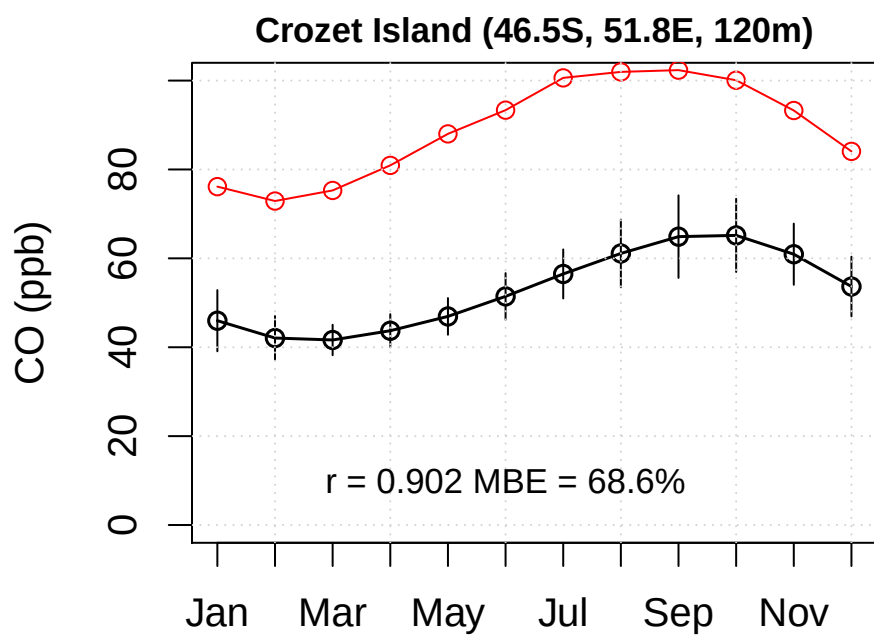
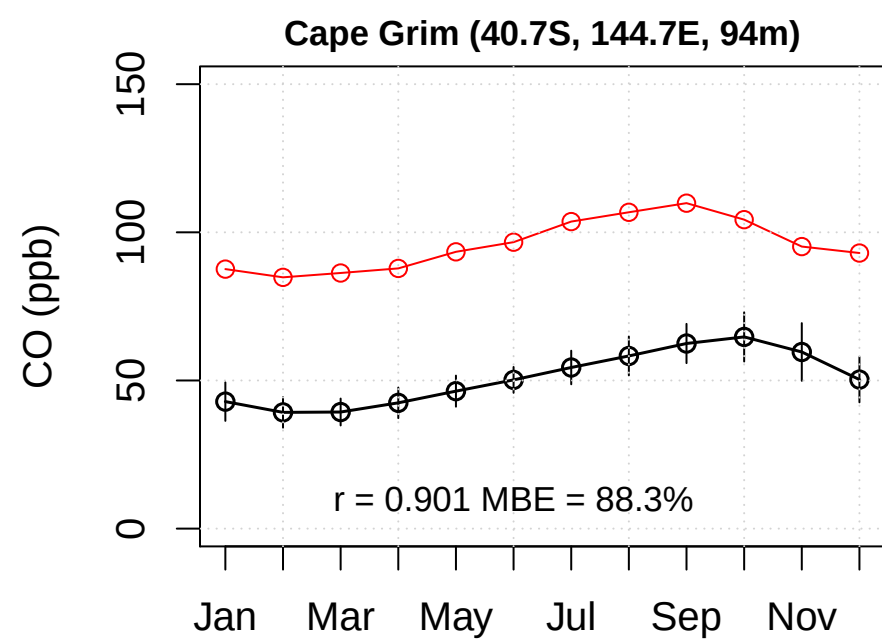
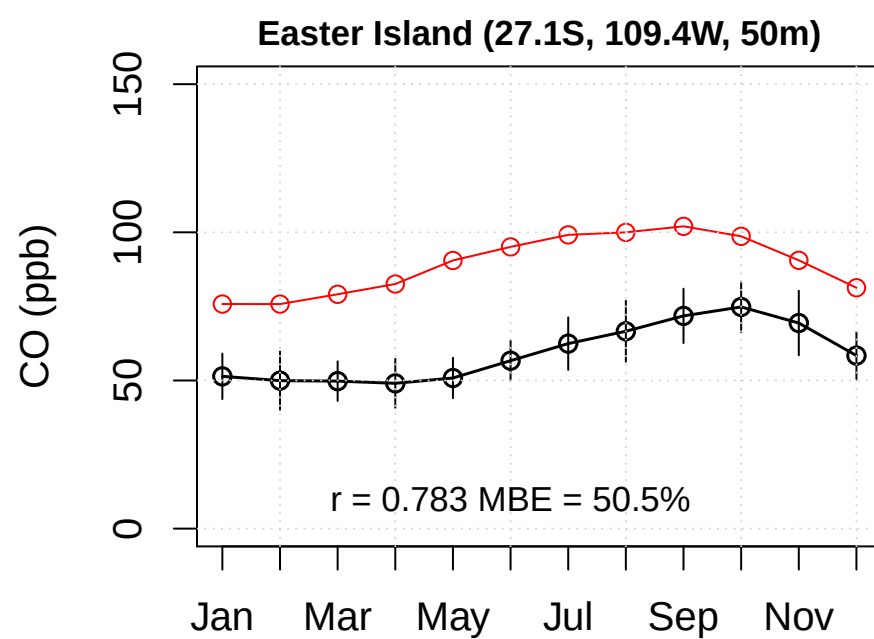
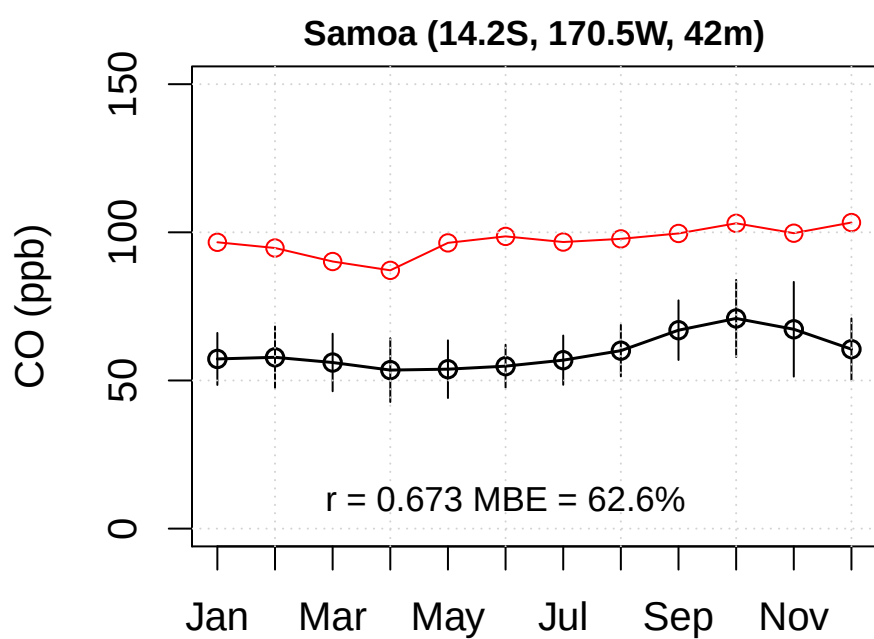
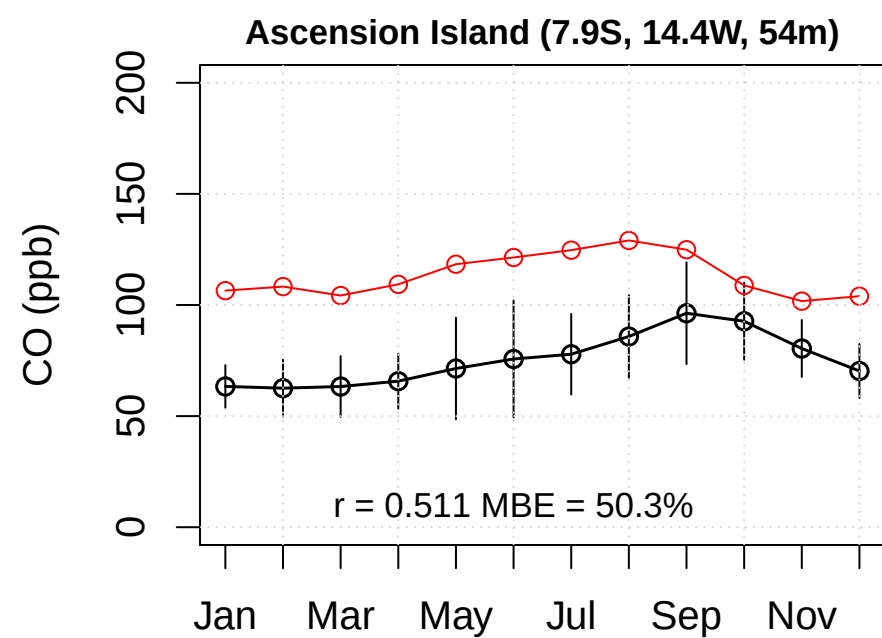
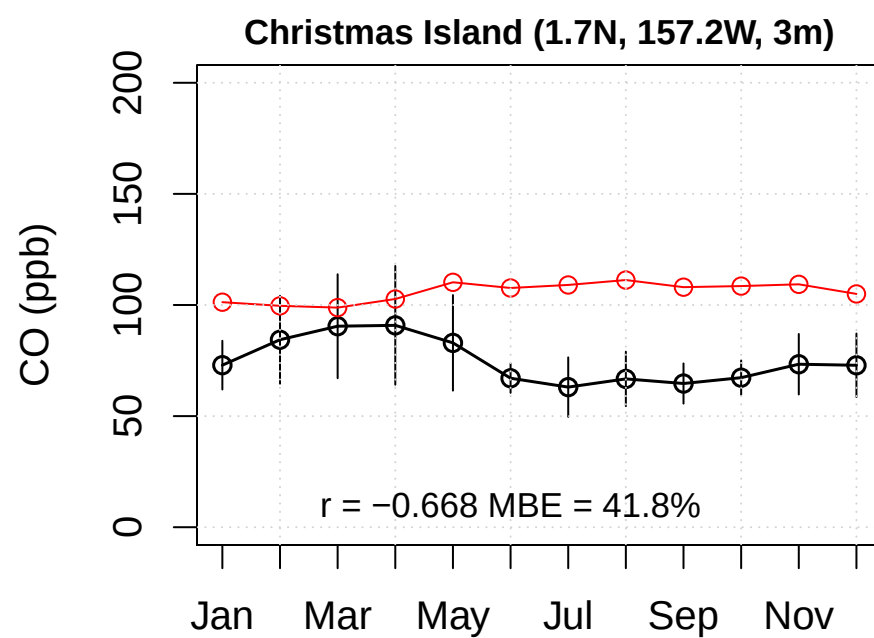
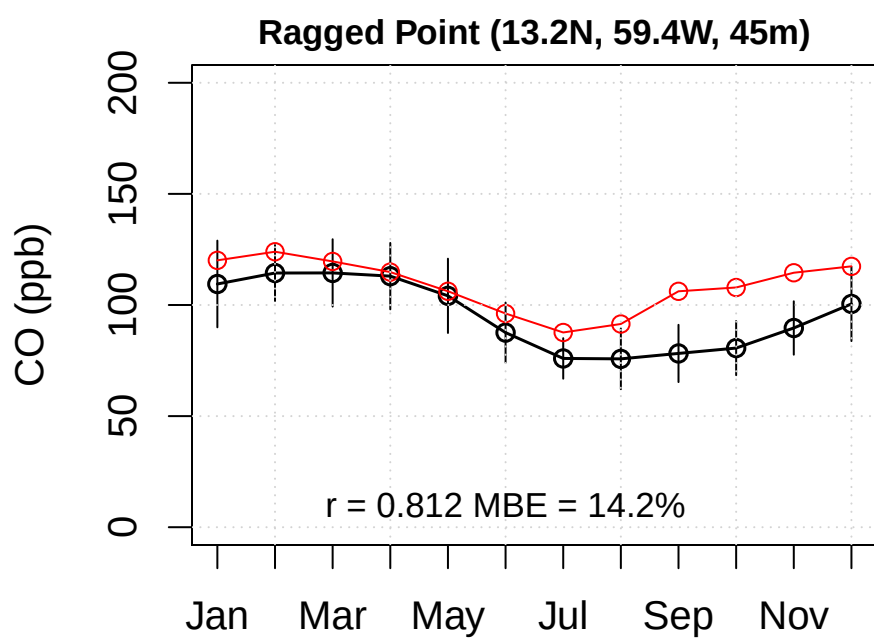
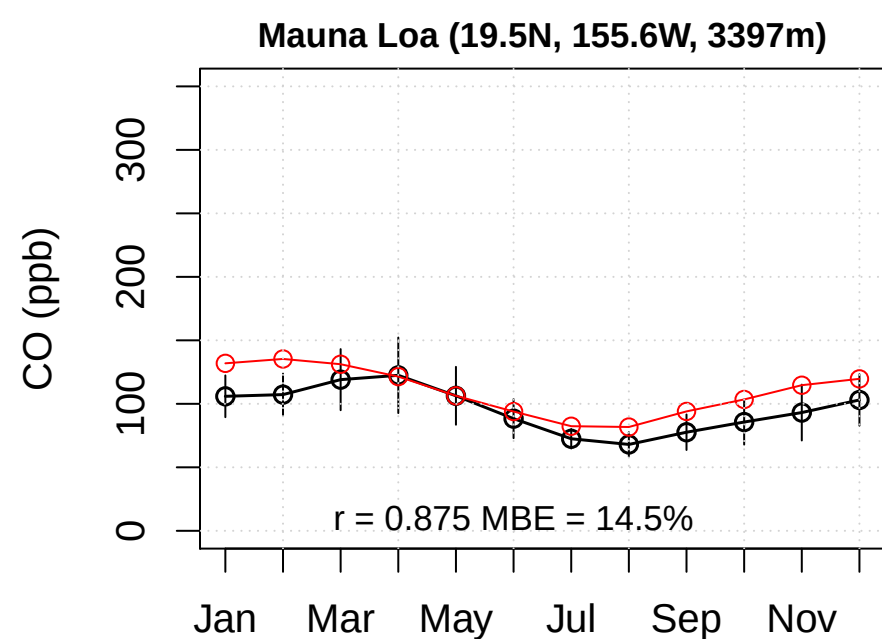
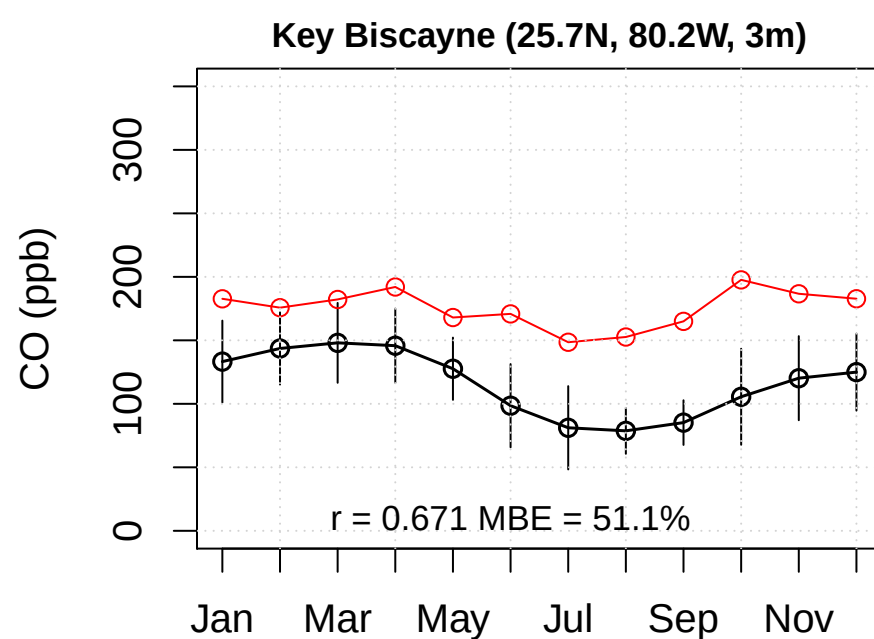
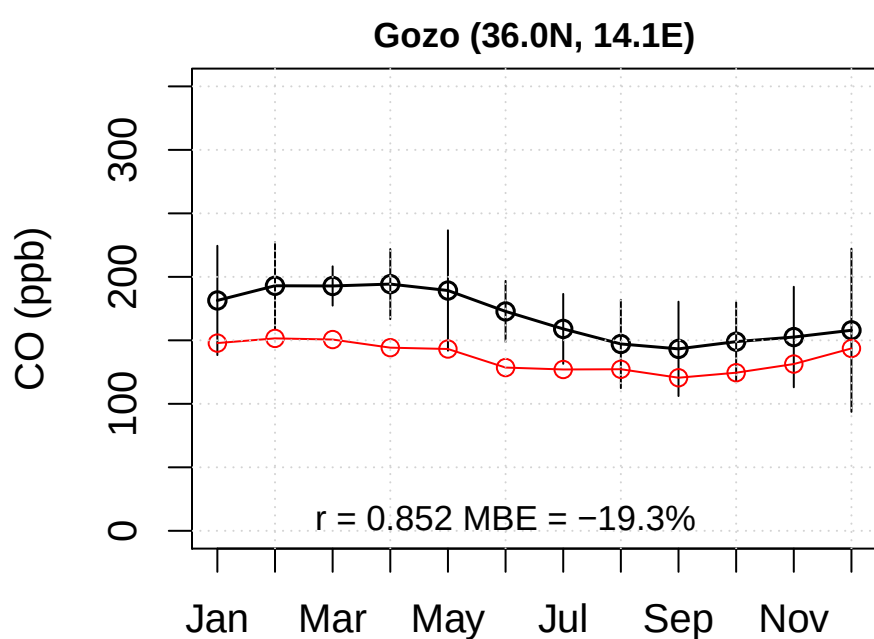
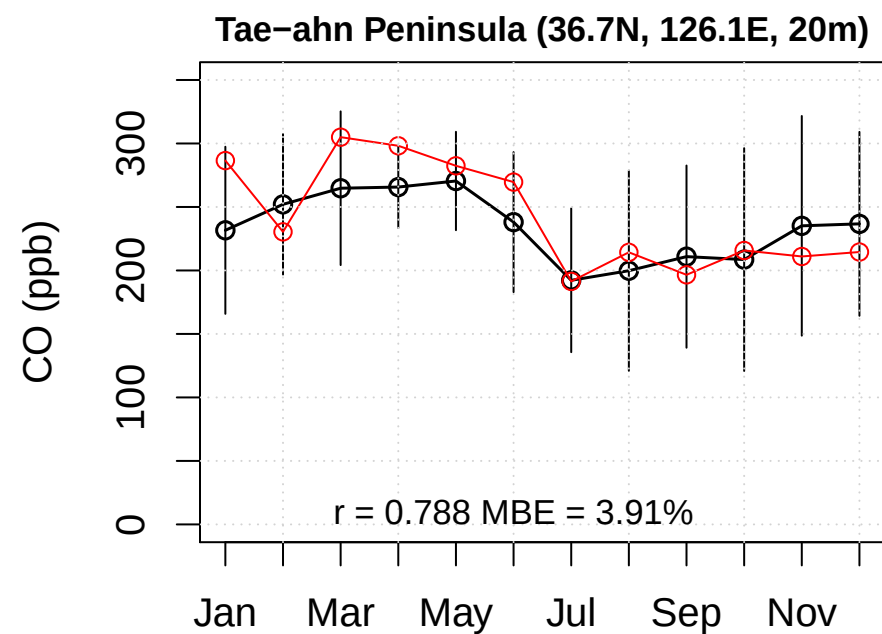
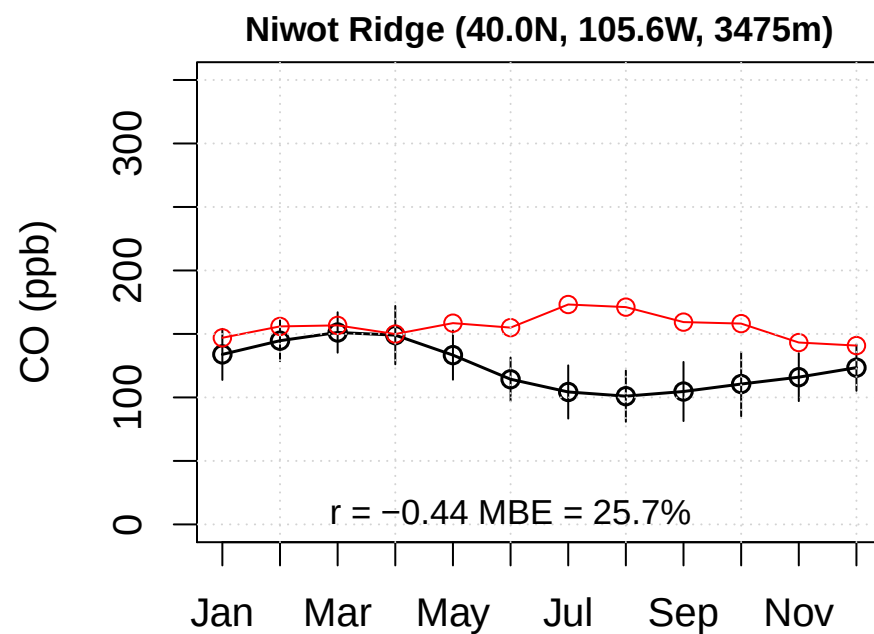
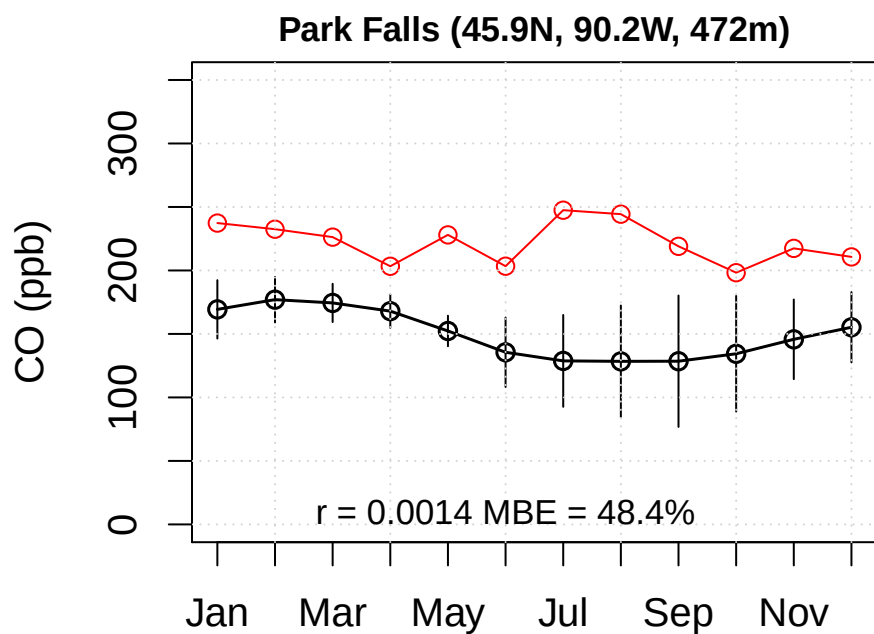
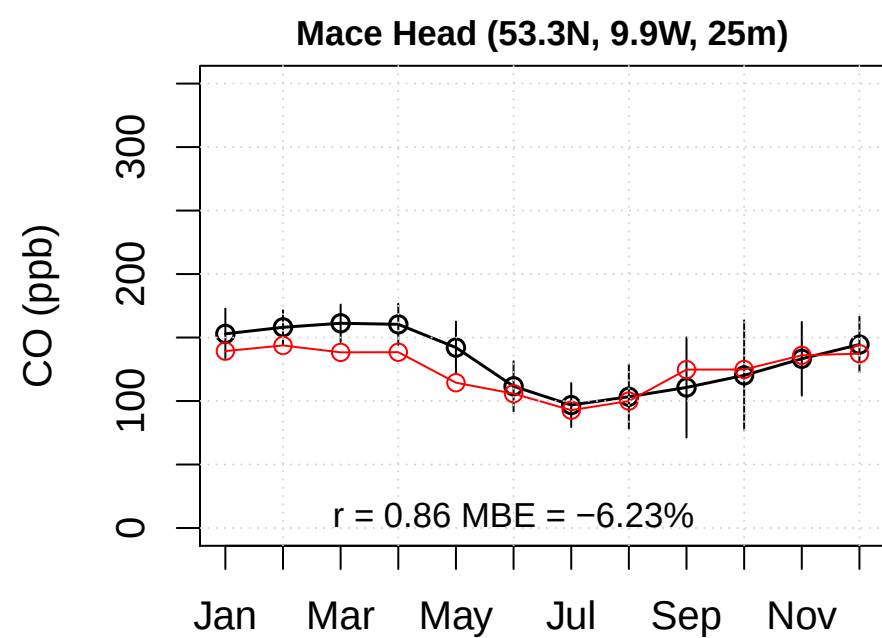
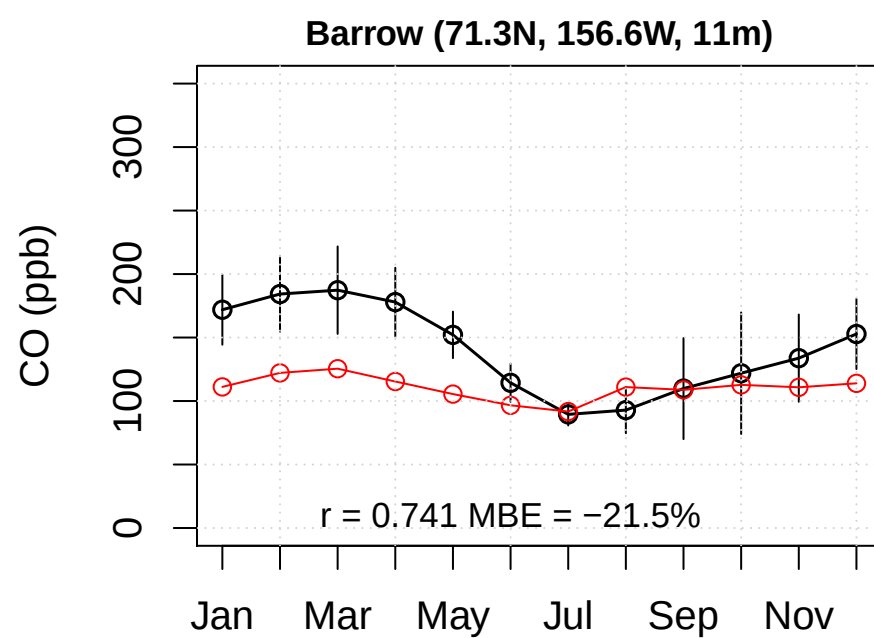
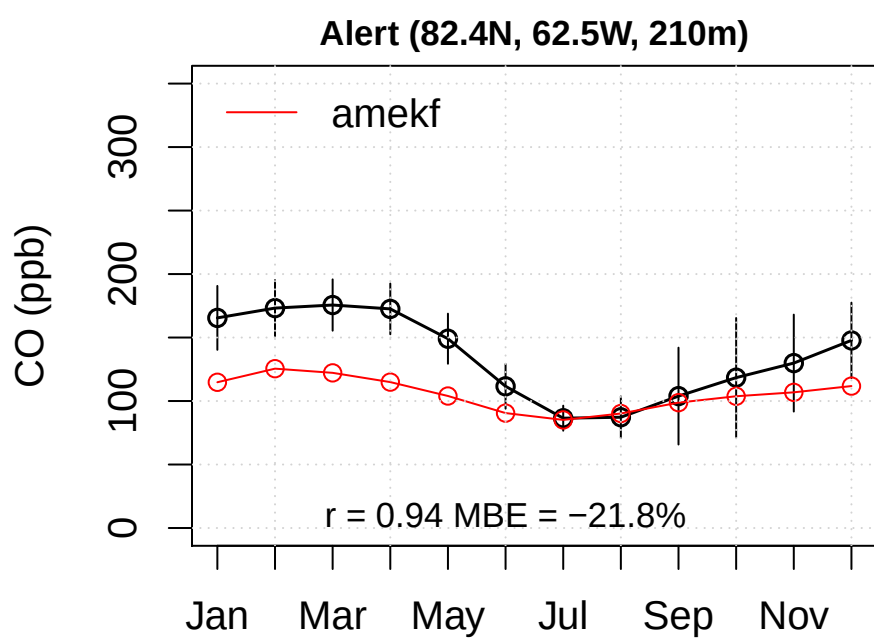
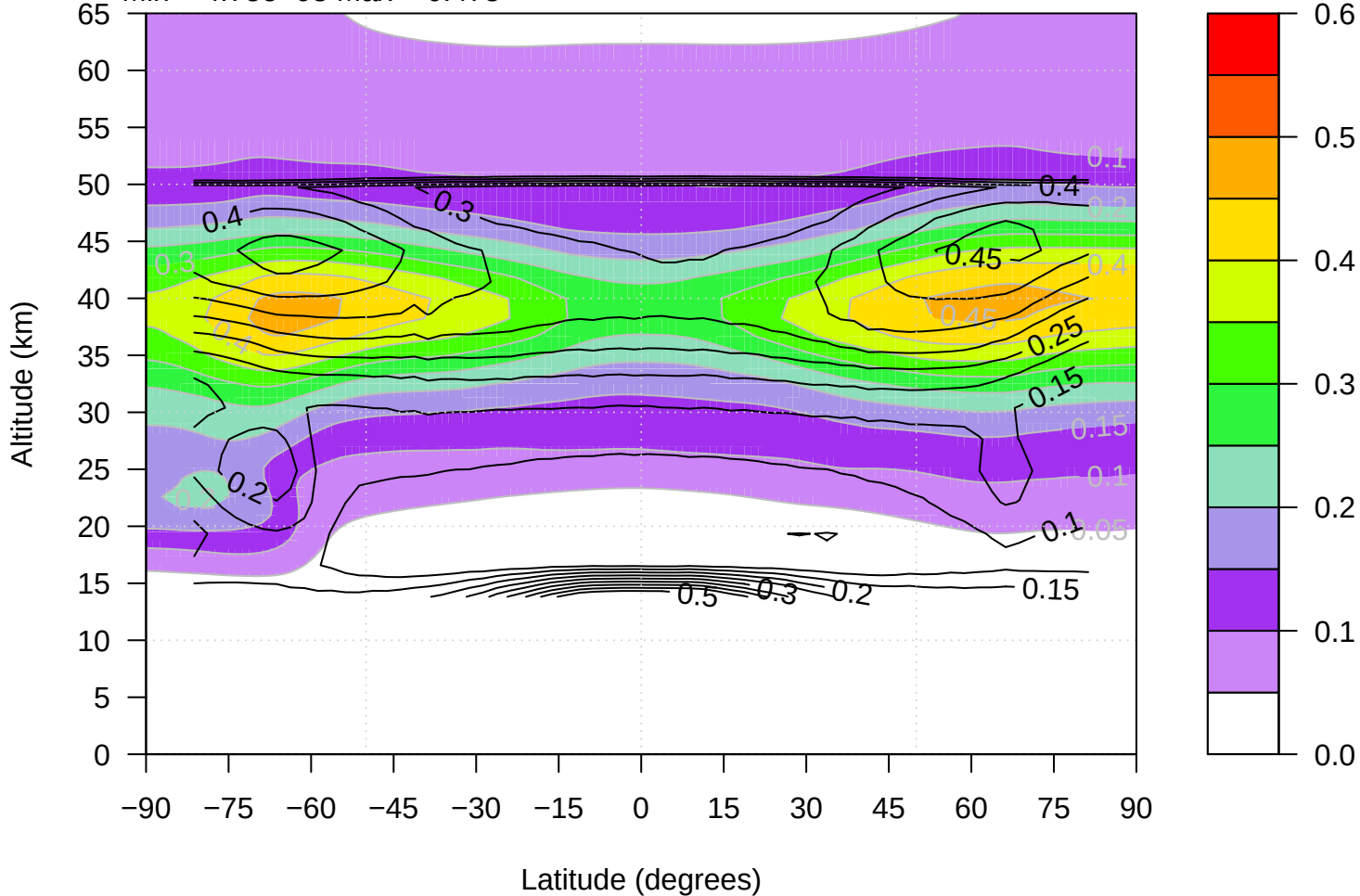




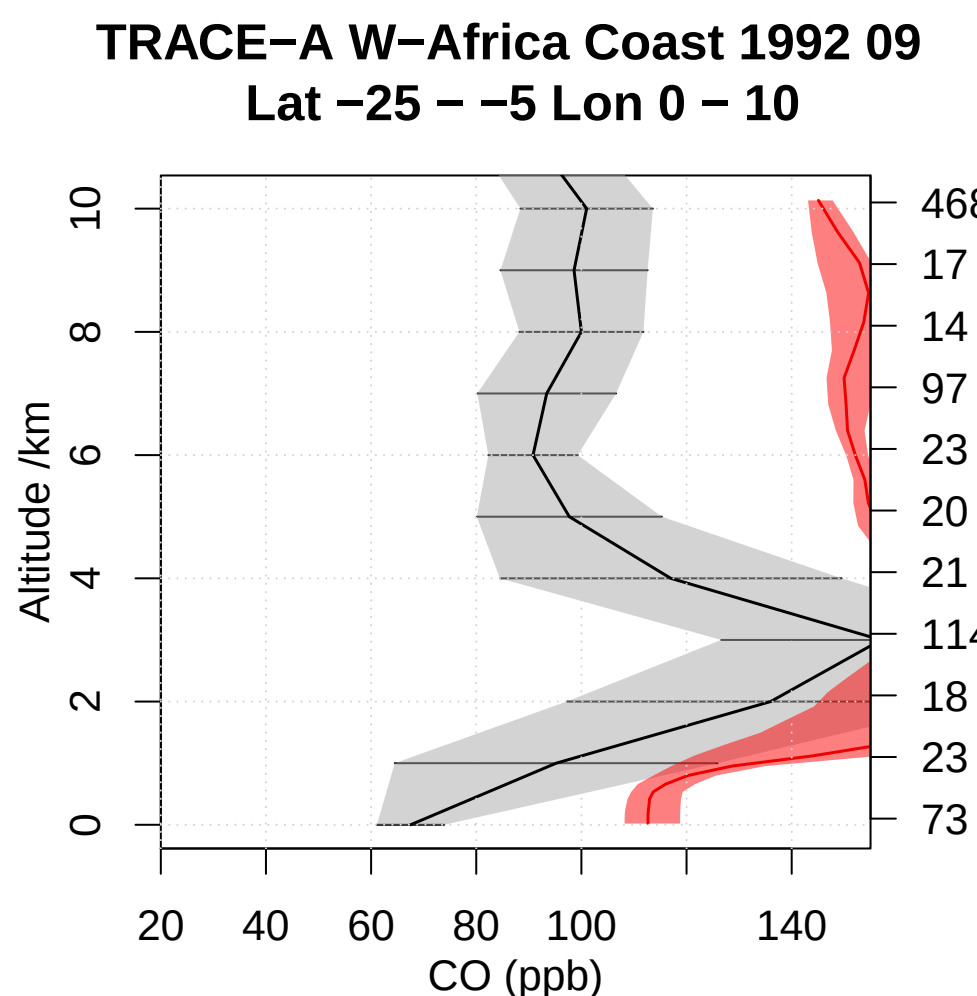
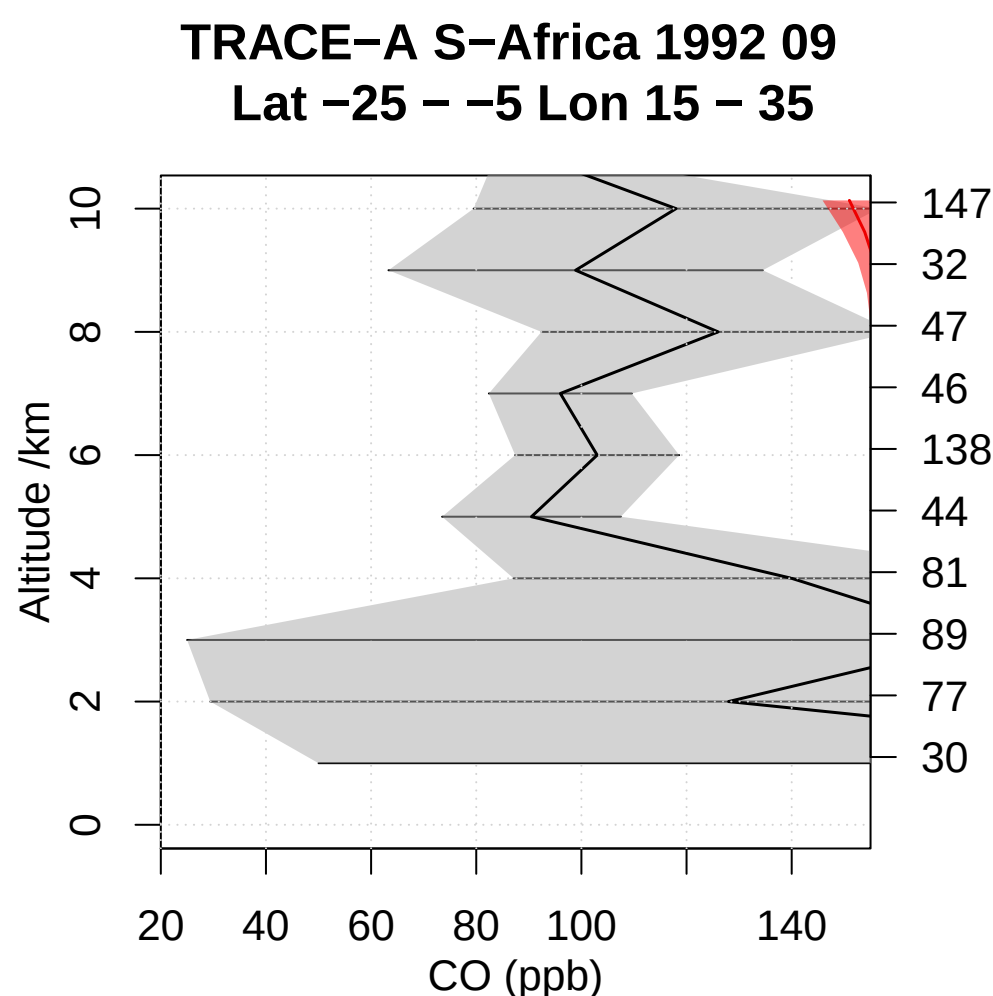
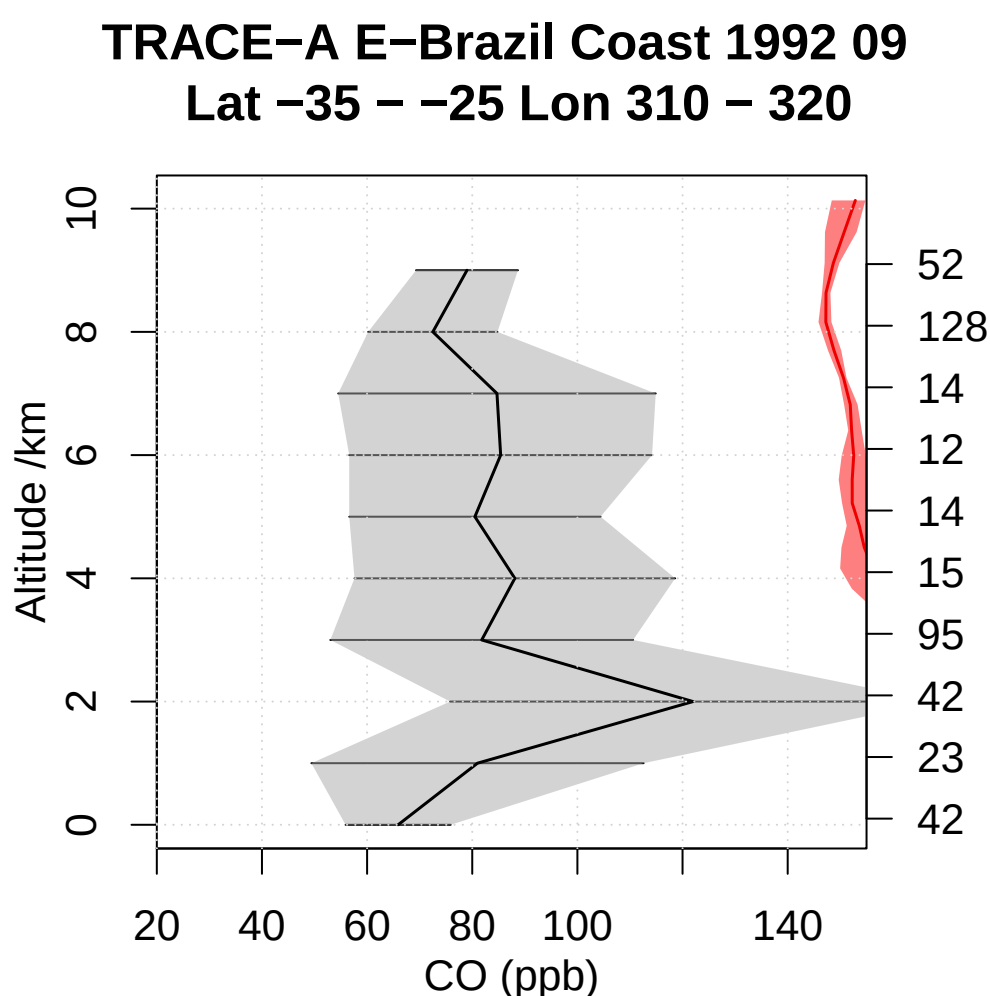
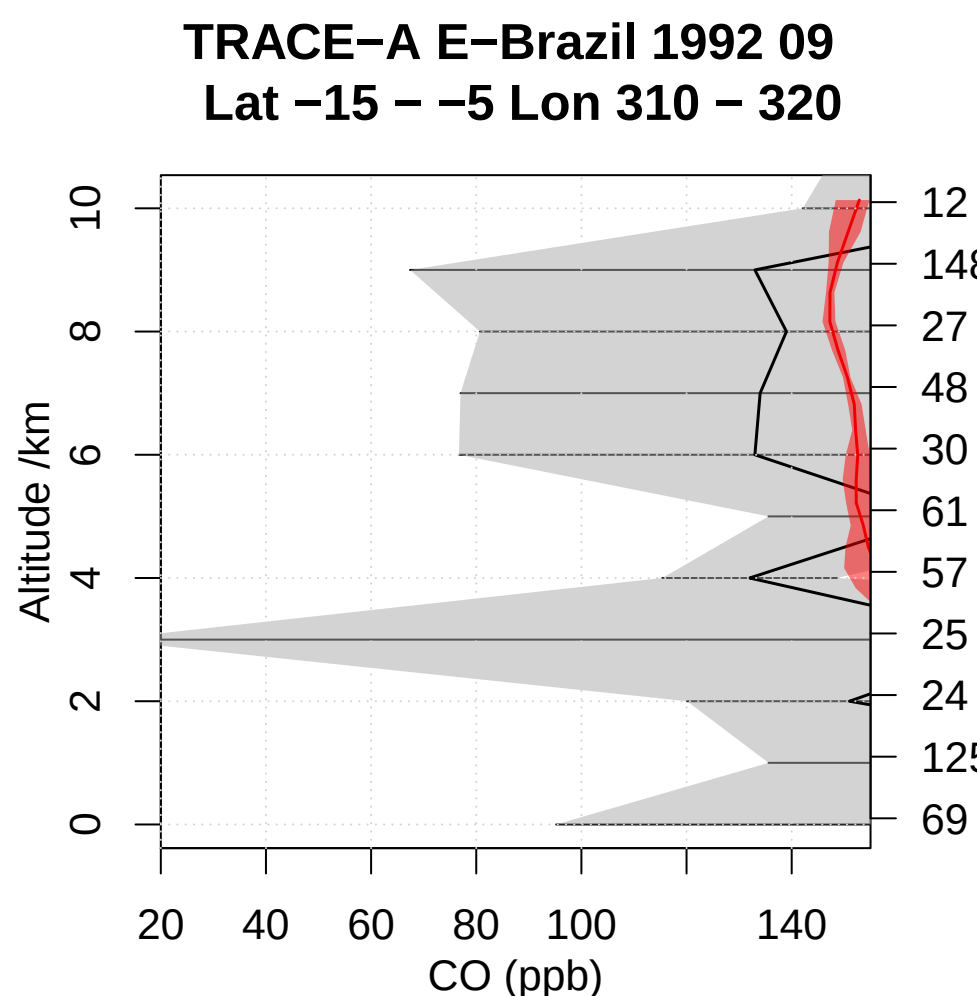
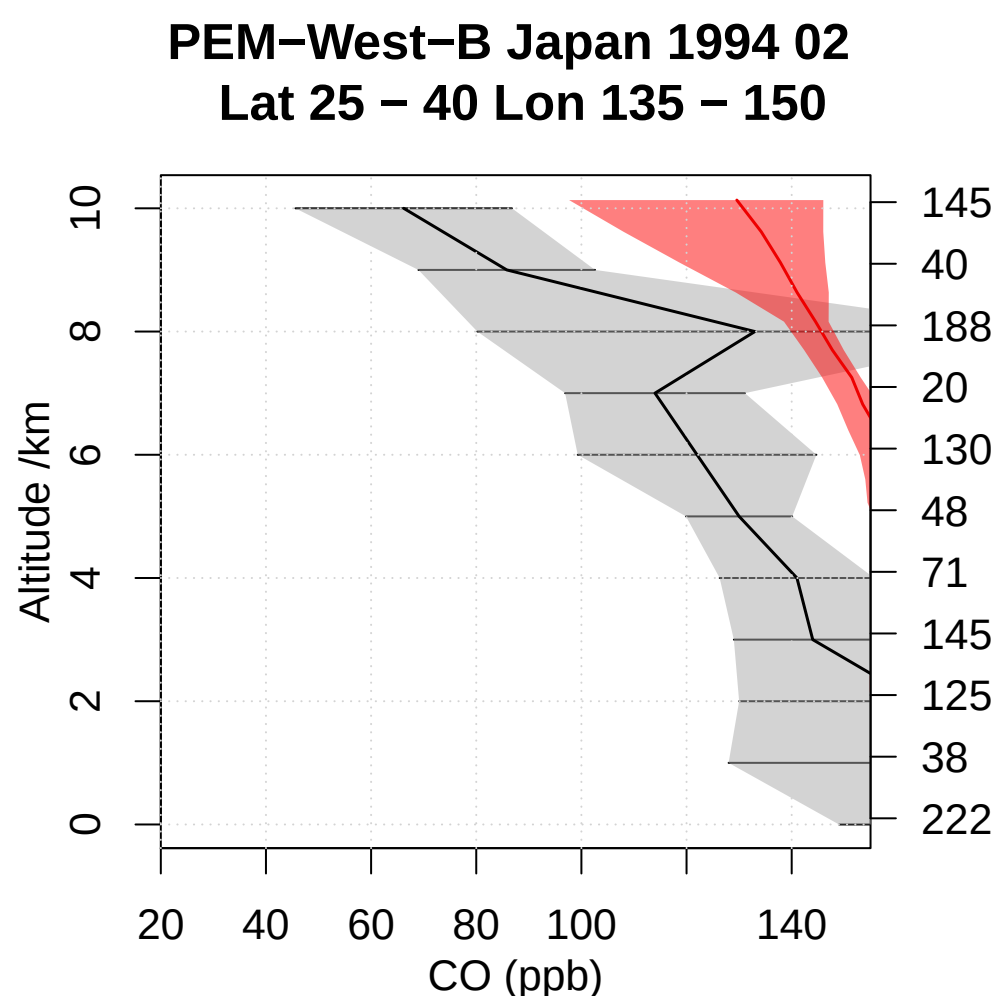
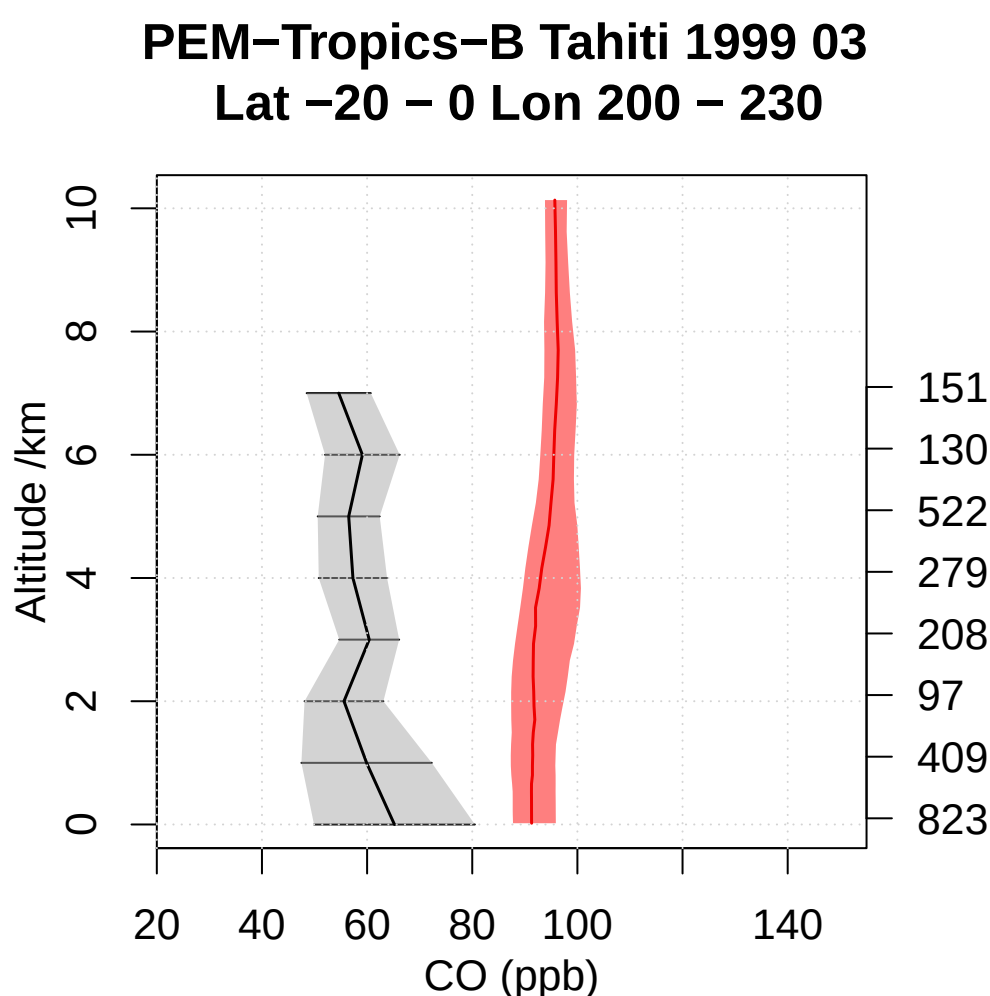
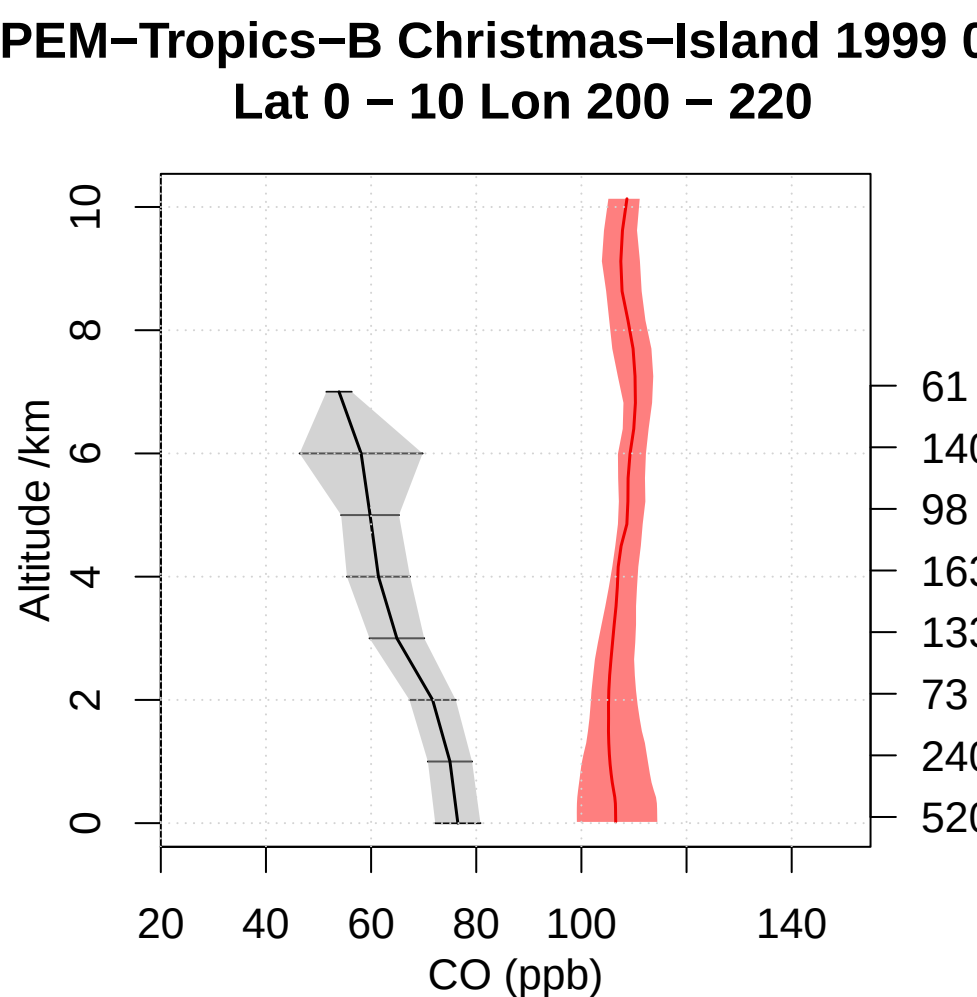
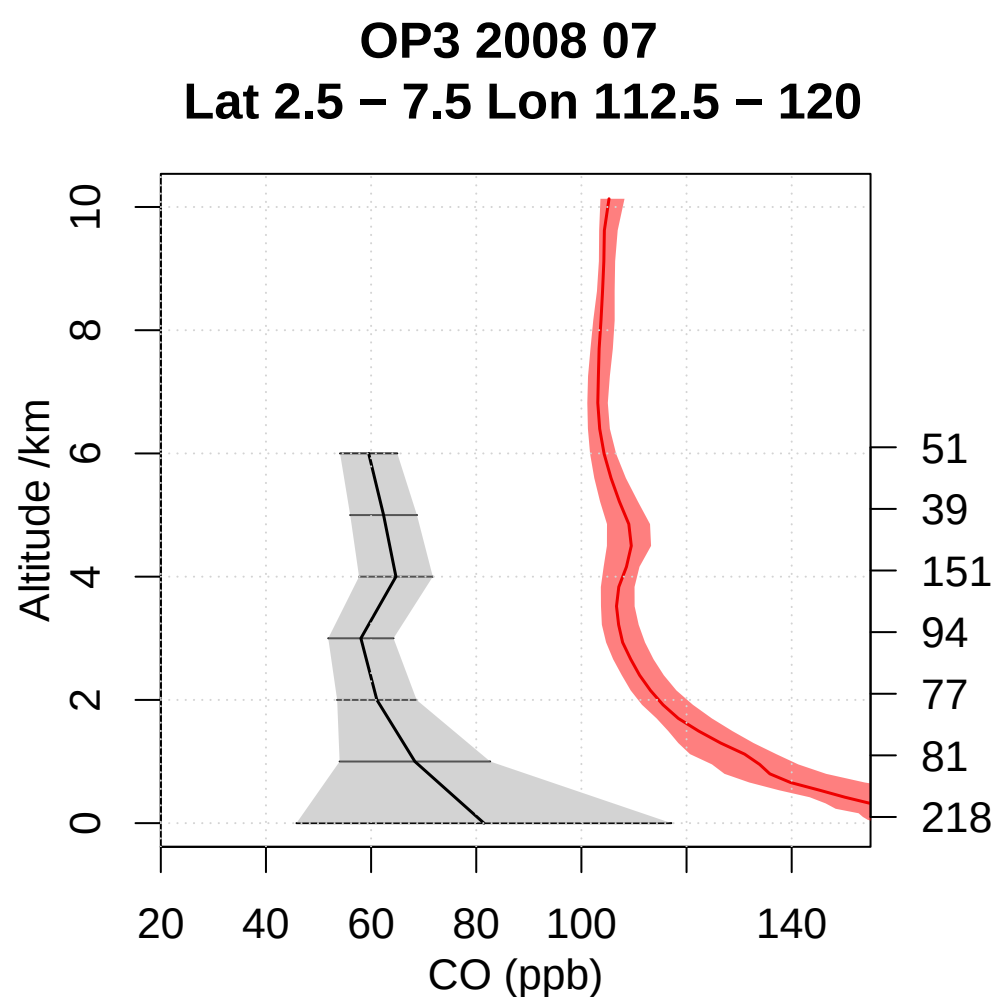
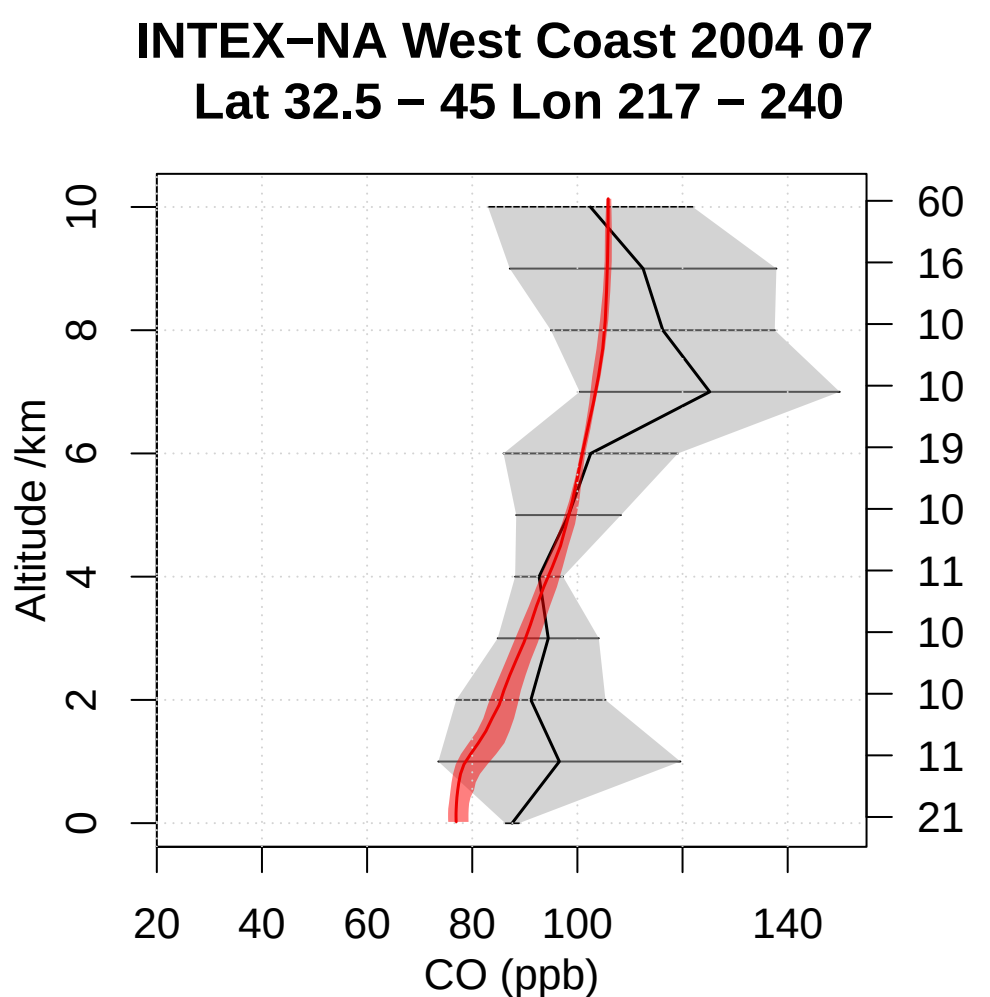
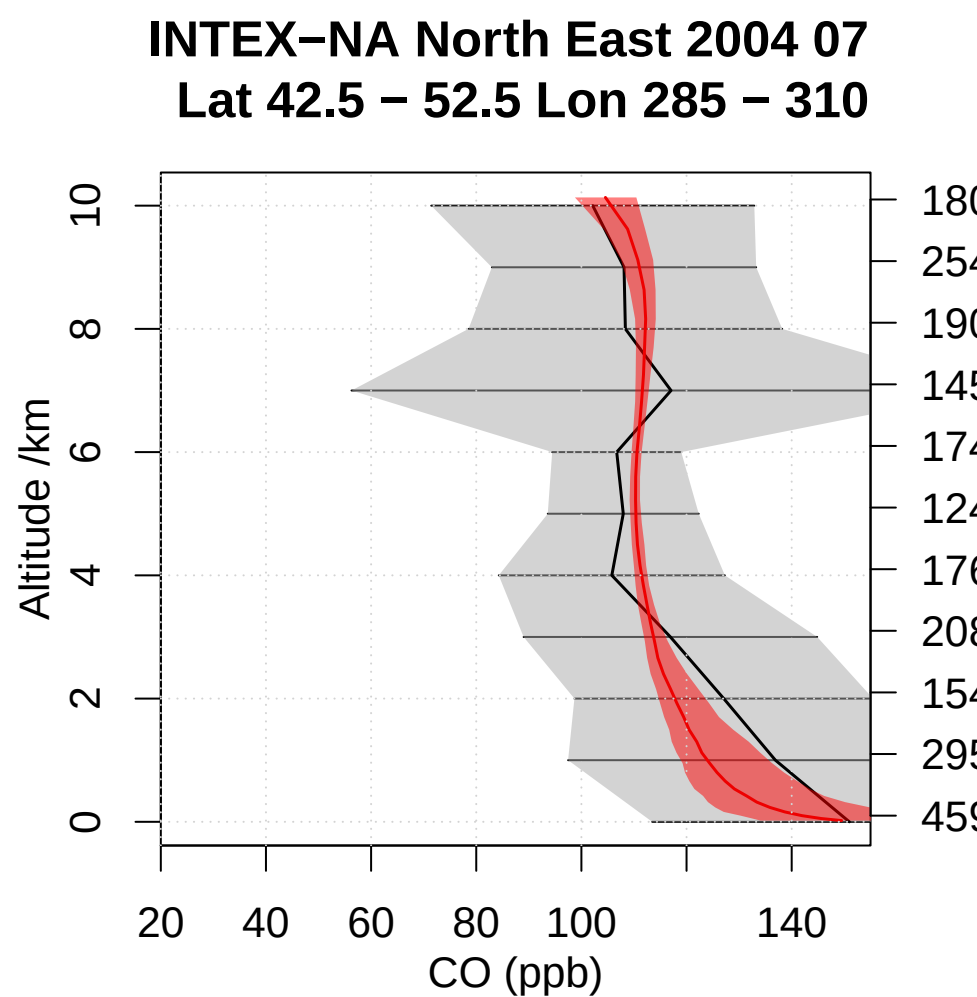
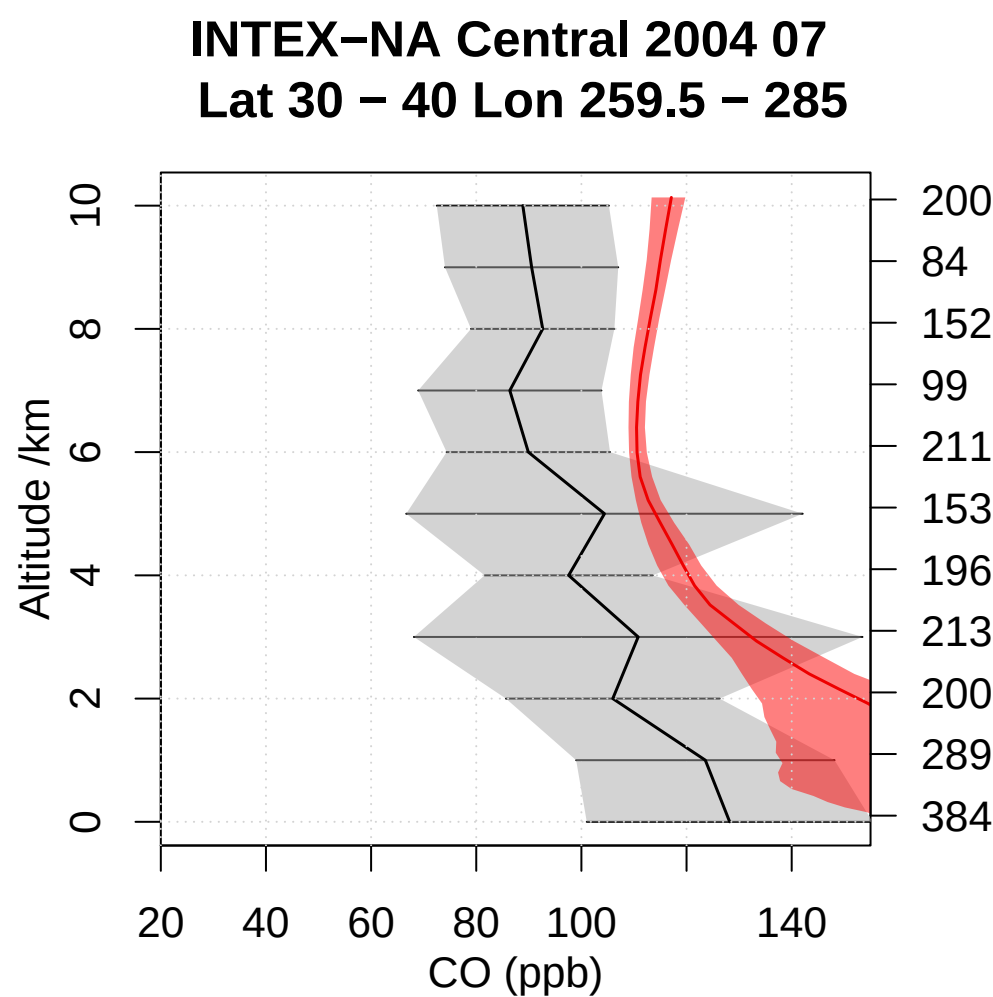
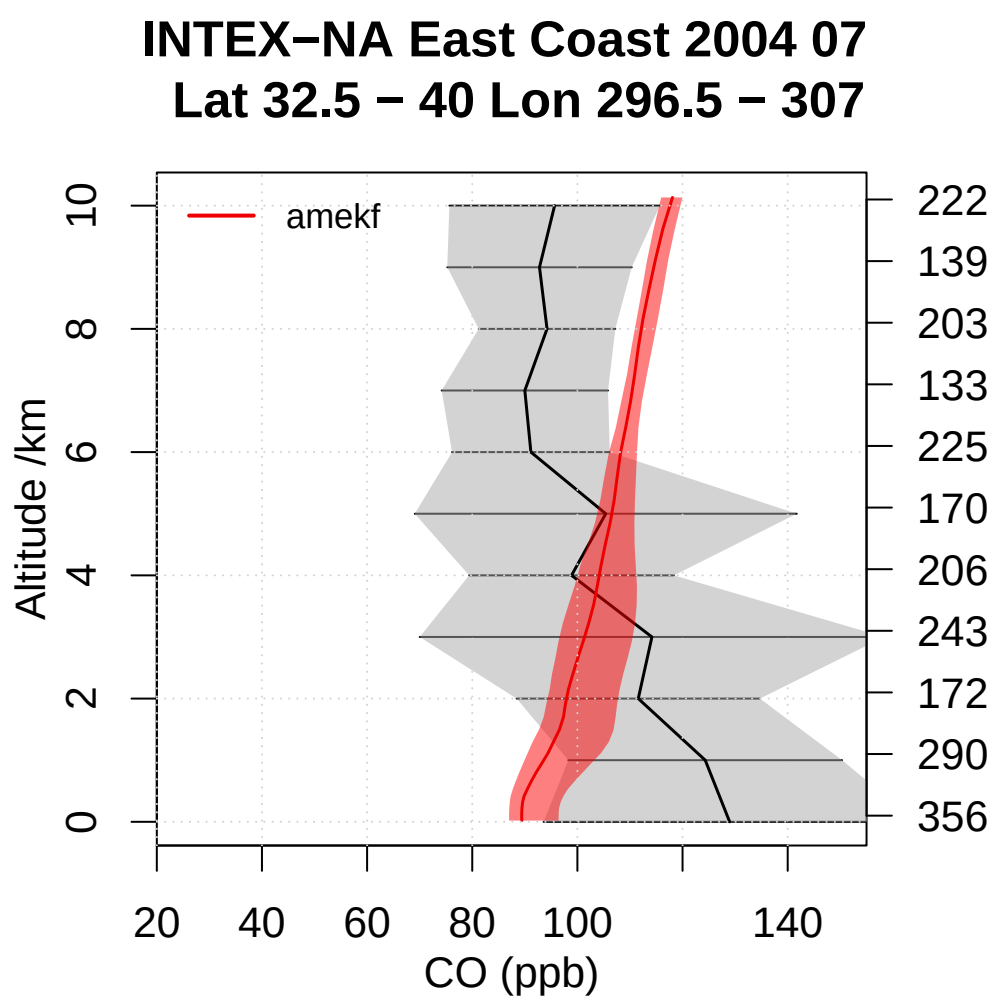
MLS – UKCA amekf CIO comparison

ppm

Min = 4.75e-08 Max = 0.473

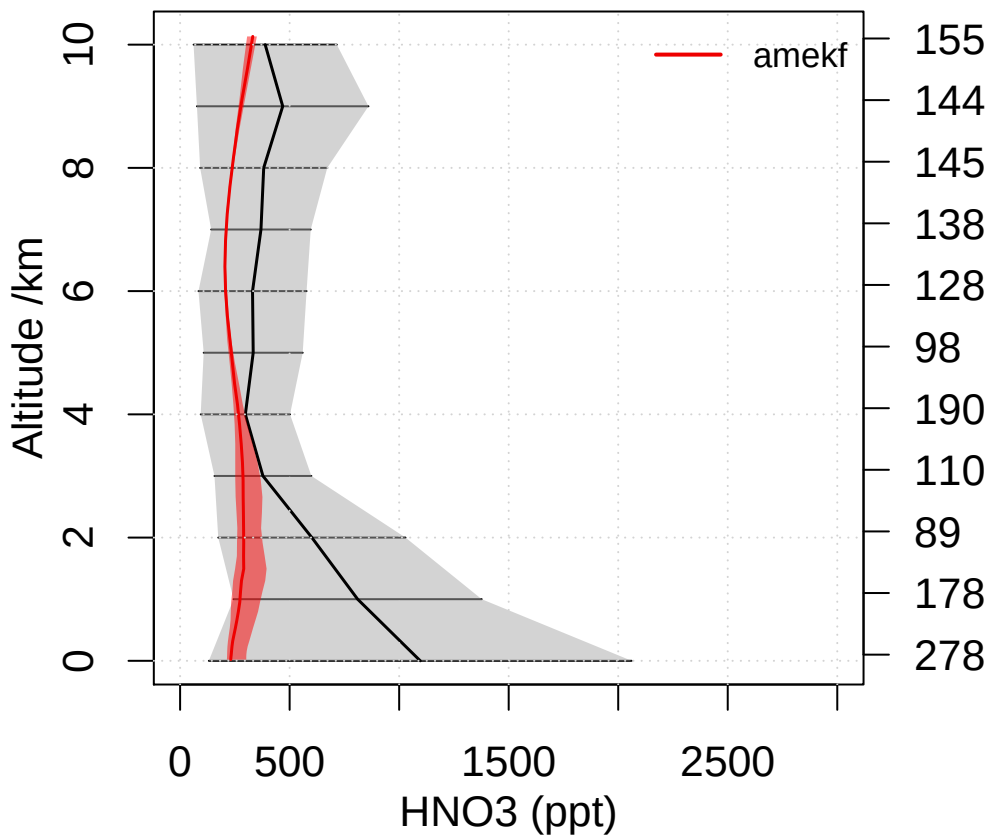


Emmons CO comparison

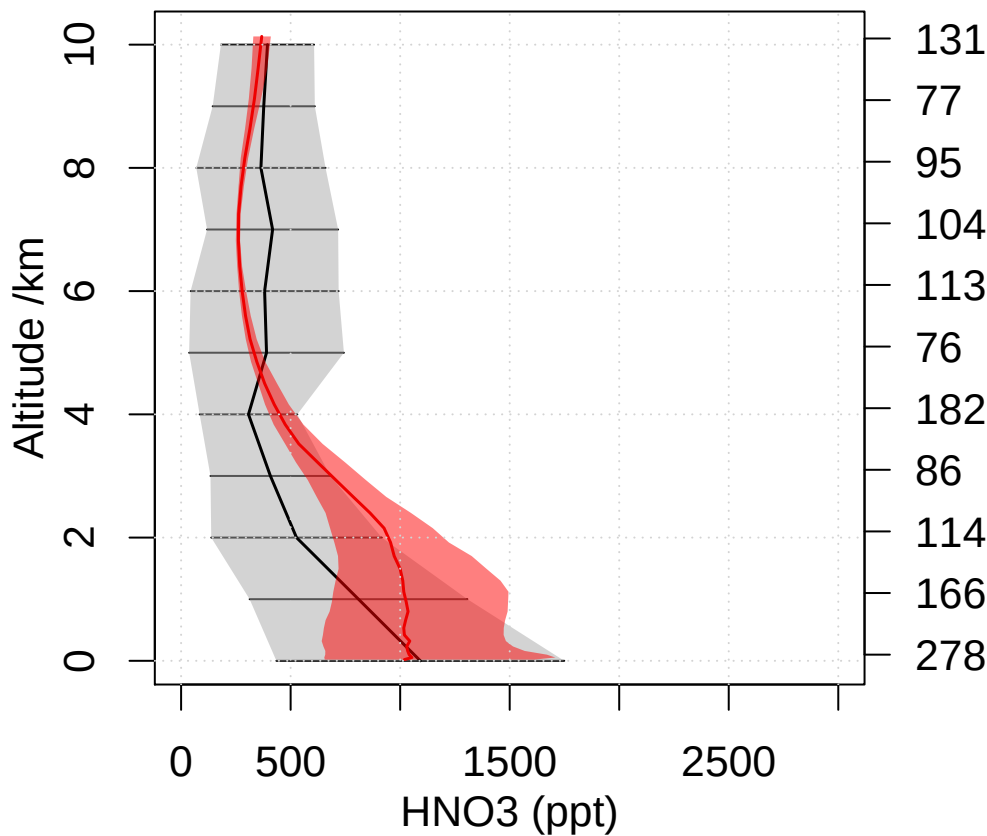


Emmons HNO3 comparison

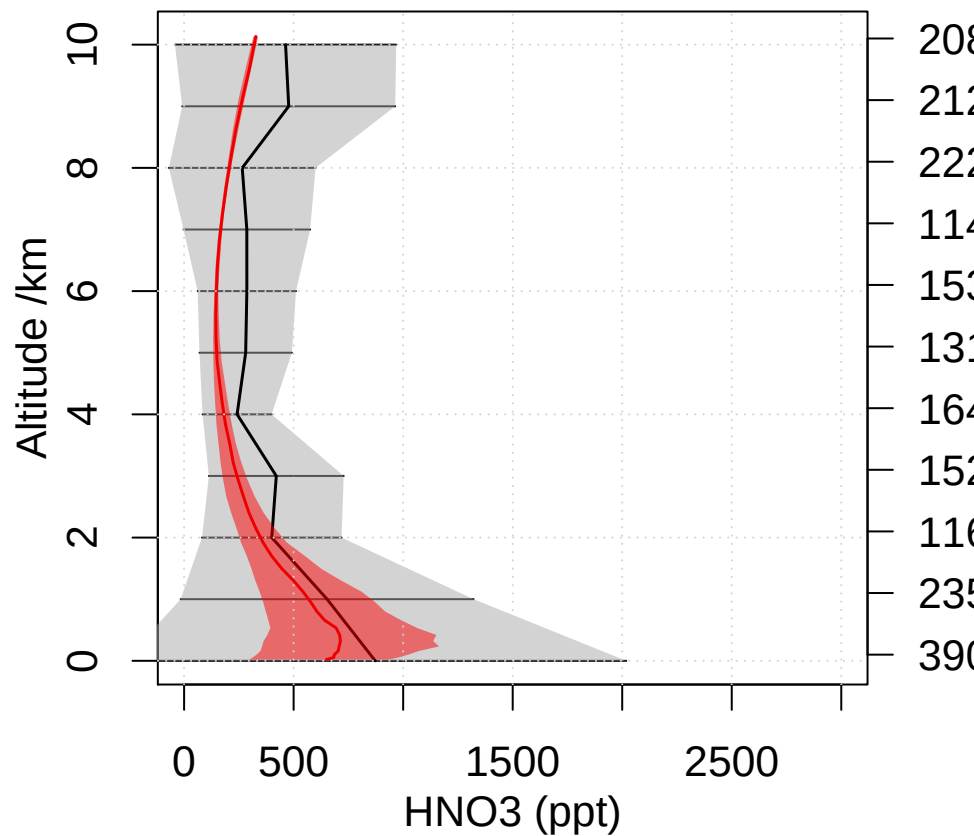
INTEX-NA East Coast 2004 07
Lat 32.5 – 40 Lon 296.5 – 307



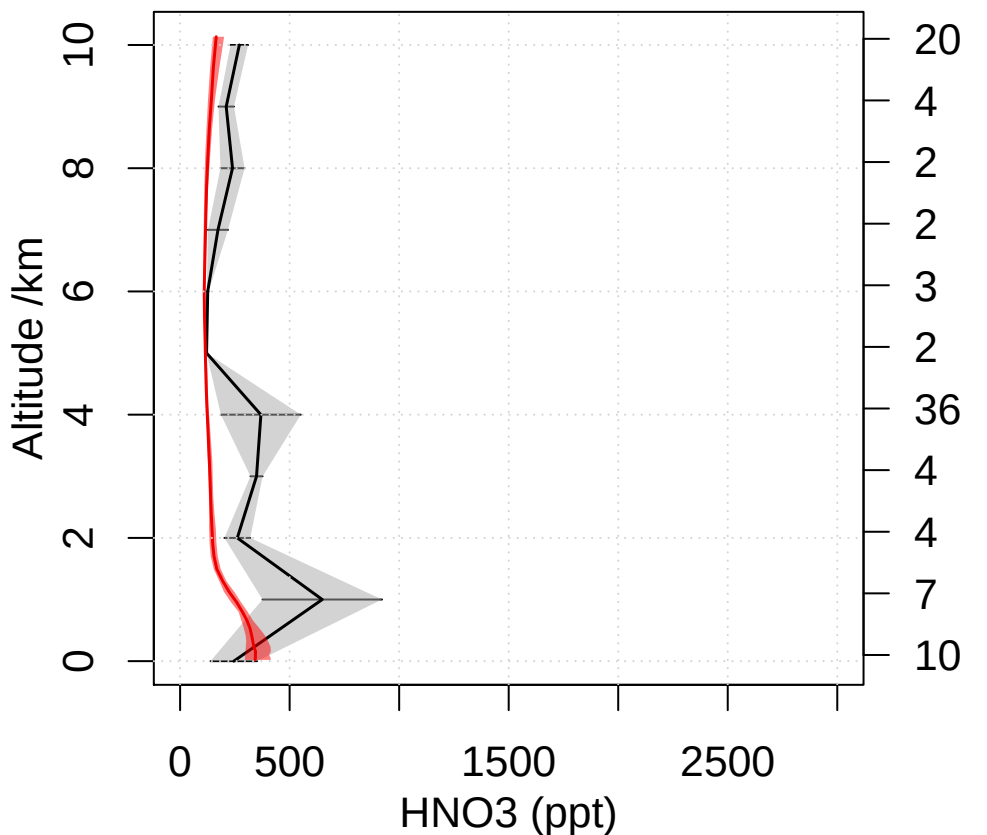
INTEX-NA Central 2004 07
Lat 30 – 40 Lon 259.5 – 285



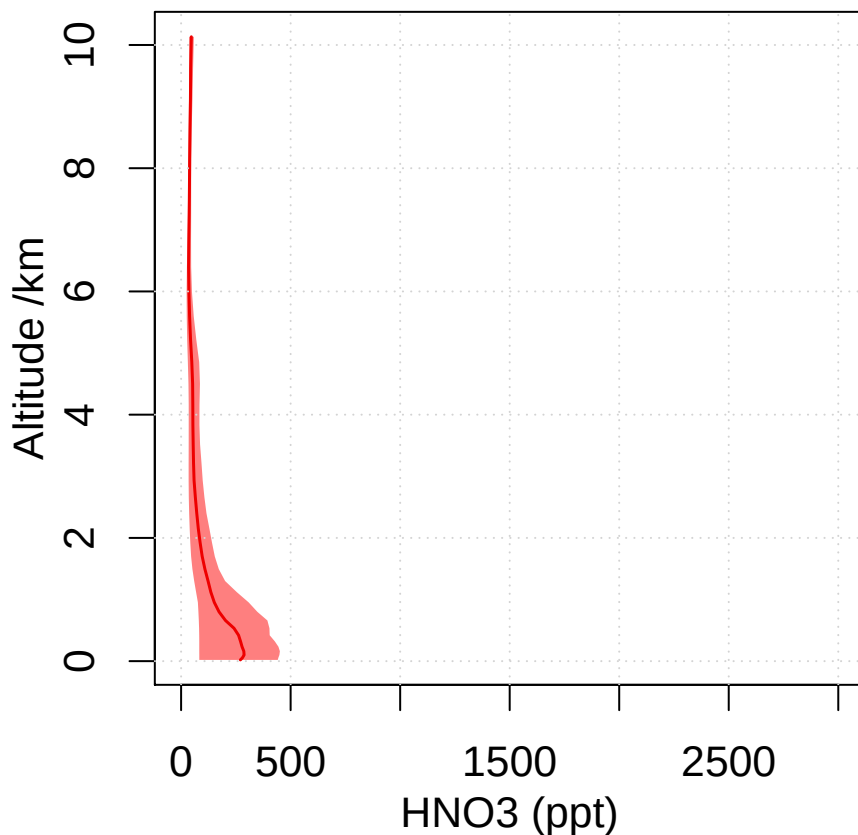
INTEX-NA North East 2004 07
Lat 42.5 – 52.5 Lon 285 – 310



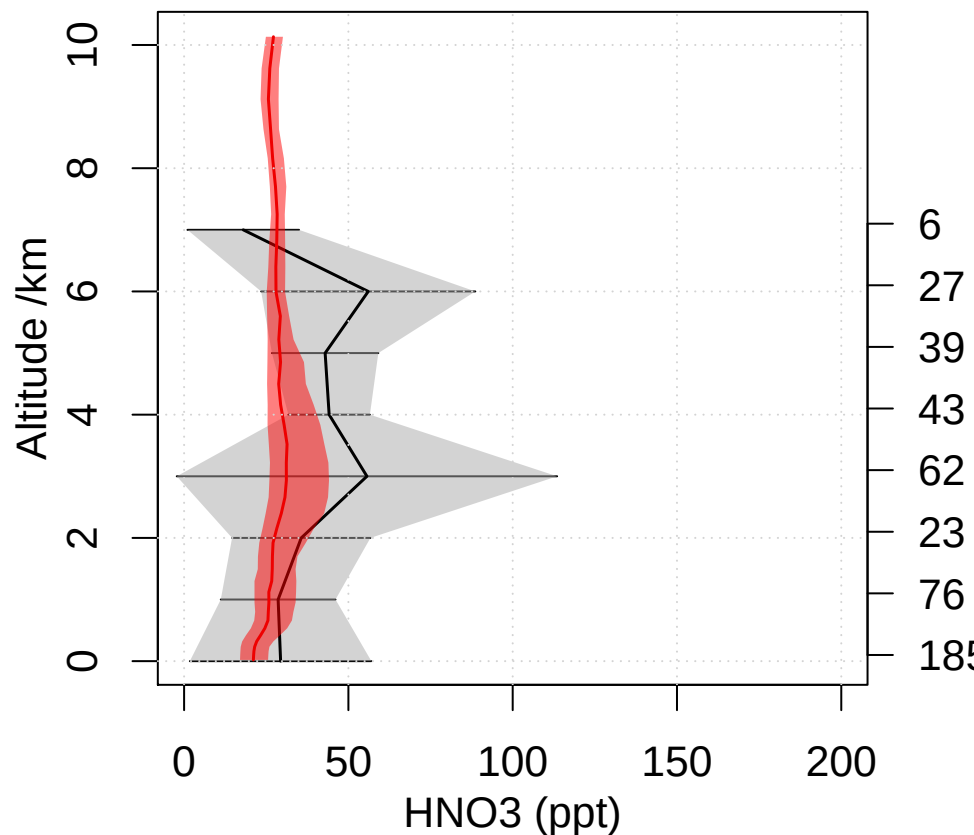
INTEX-NA West Coast 2004 07
Lat 32.5 – 45 Lon 217 – 240



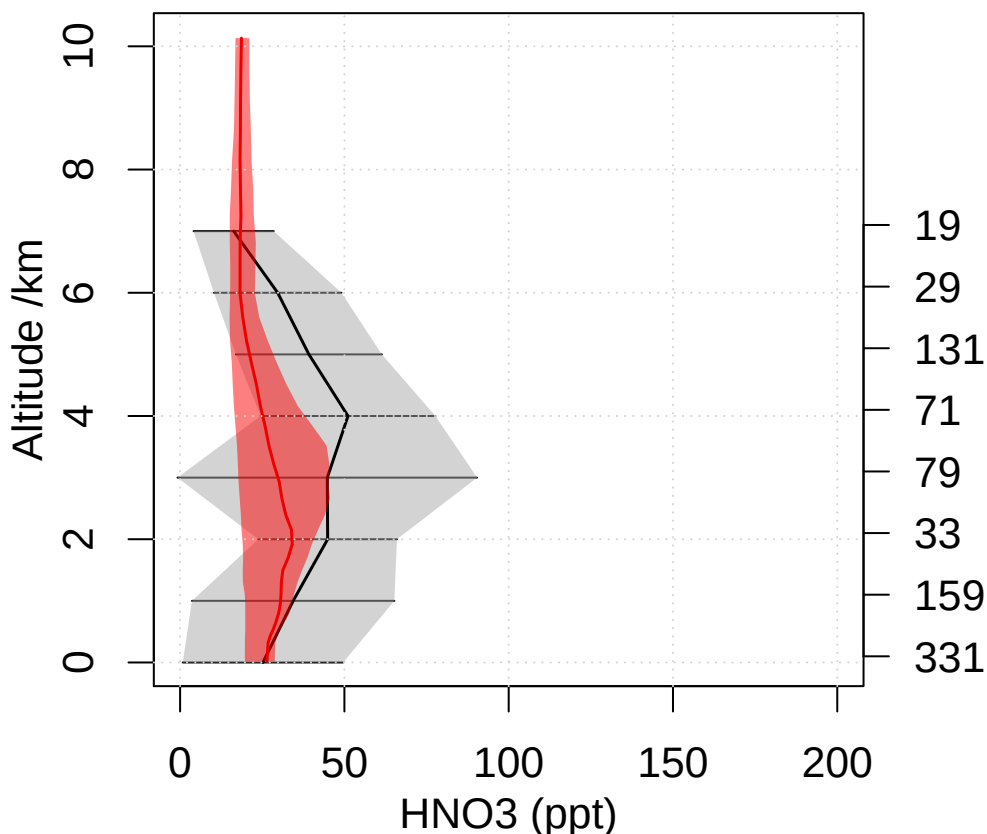
OP3 2008 07
Lat 2.5 – 7.5 Lon 112.5 – 120



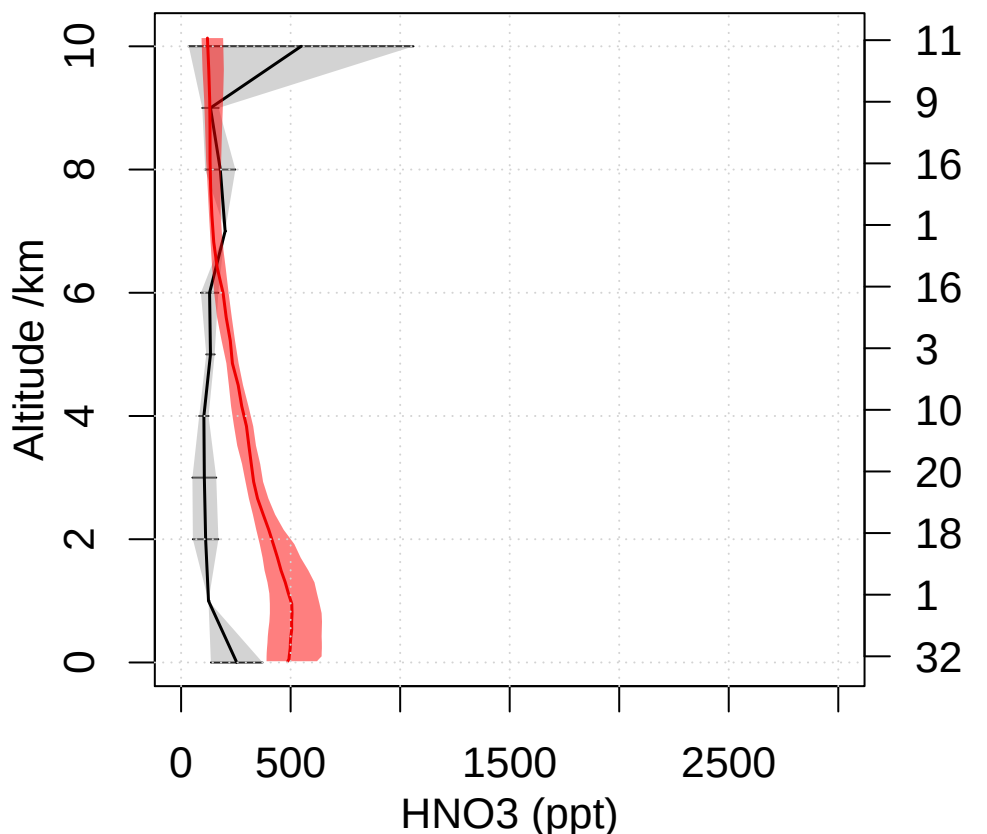
PEM-Tropics-B Christmas-Island 1999 07
Lat 0 – 10 Lon 200 – 220



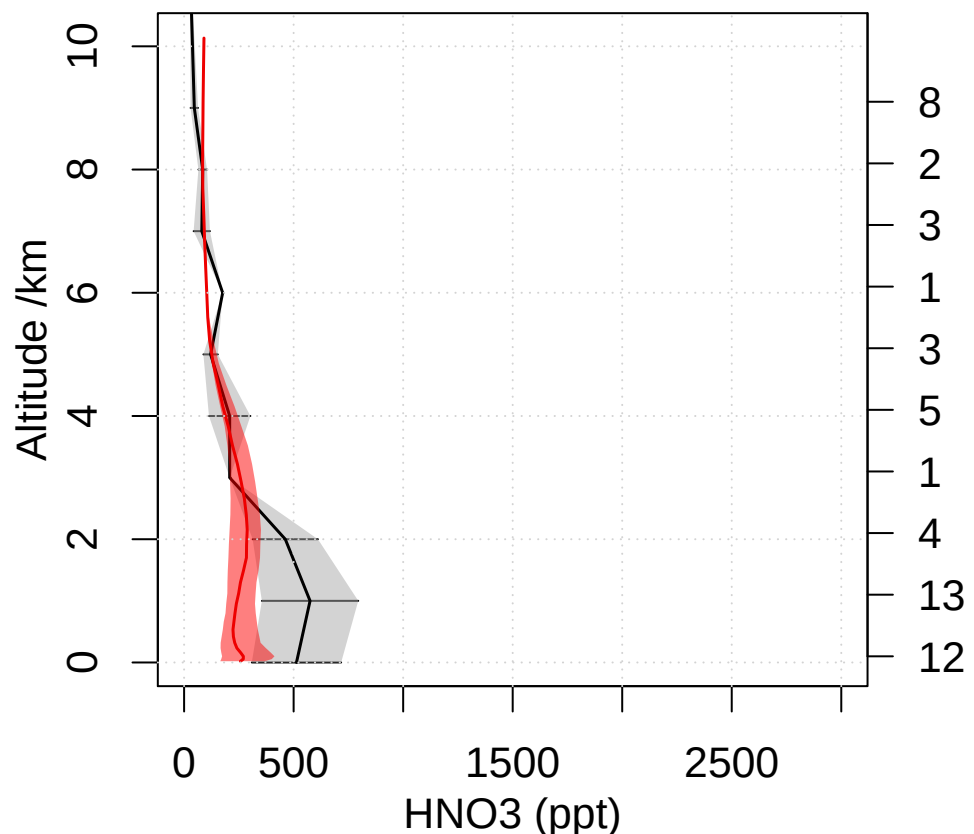
PEM-Tropics-B Tahiti 1999 03
Lat -20 – 0 Lon 200 – 230



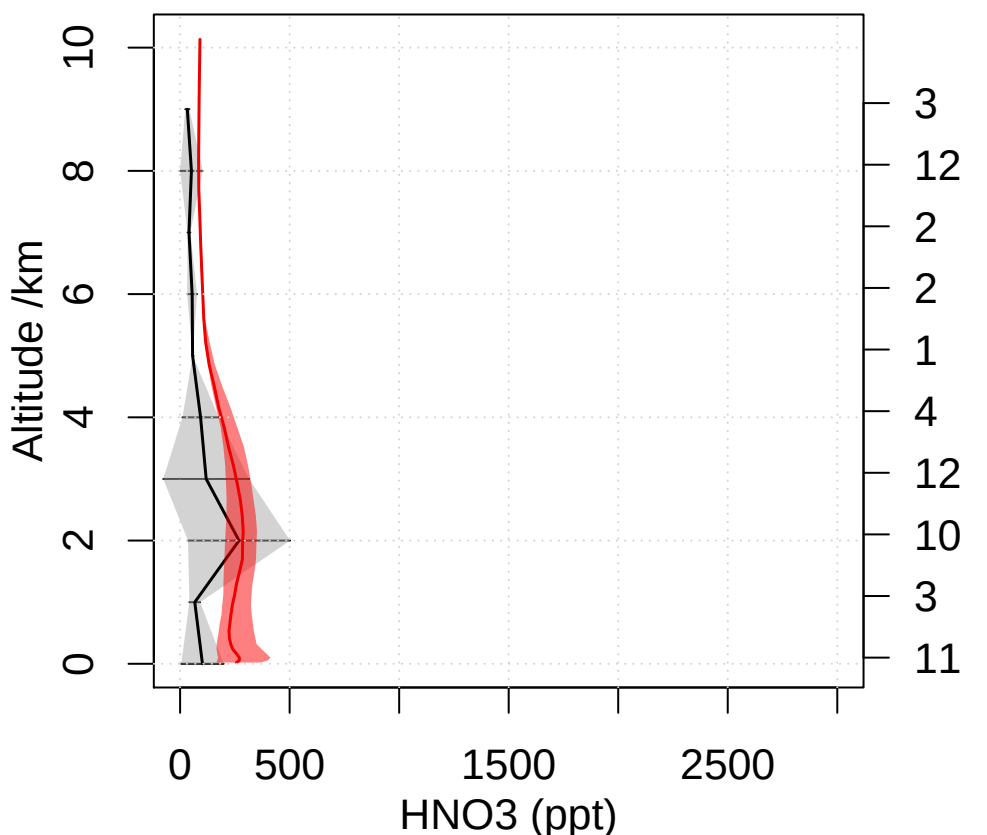
PEM-West-B Japan 1994 02
Lat 25 – 40 Lon 135 – 150



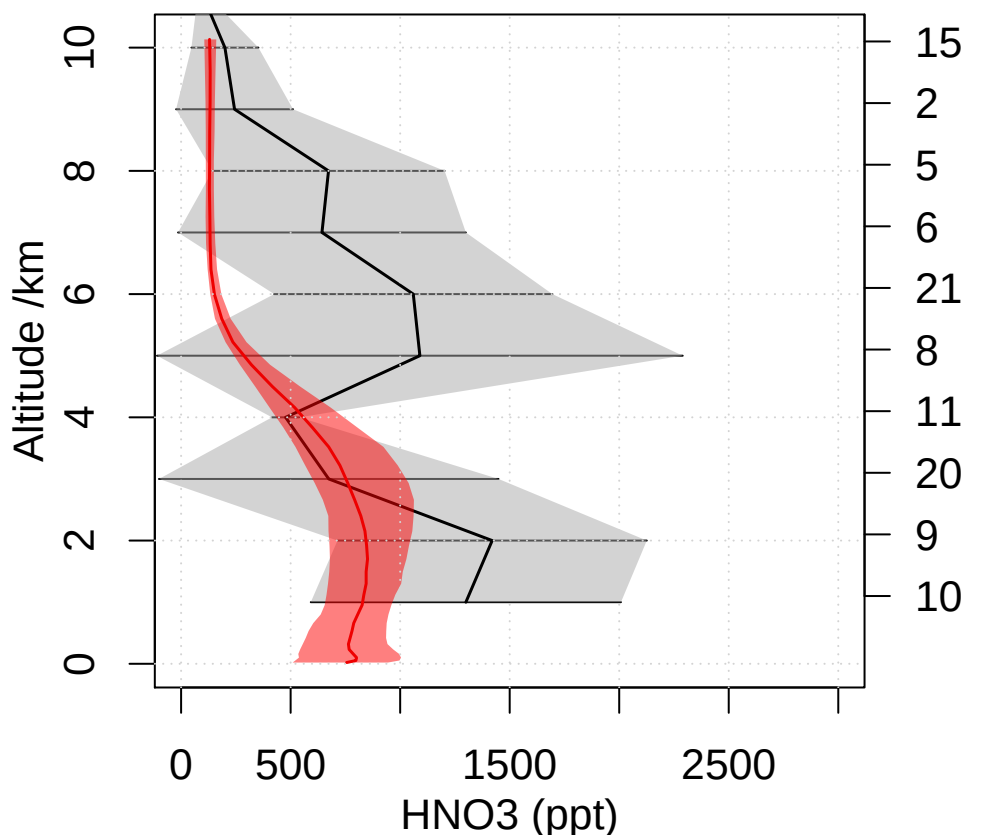
TRACE-A E-Brazil 1992 09
Lat -15 – -5 Lon 310 – 320



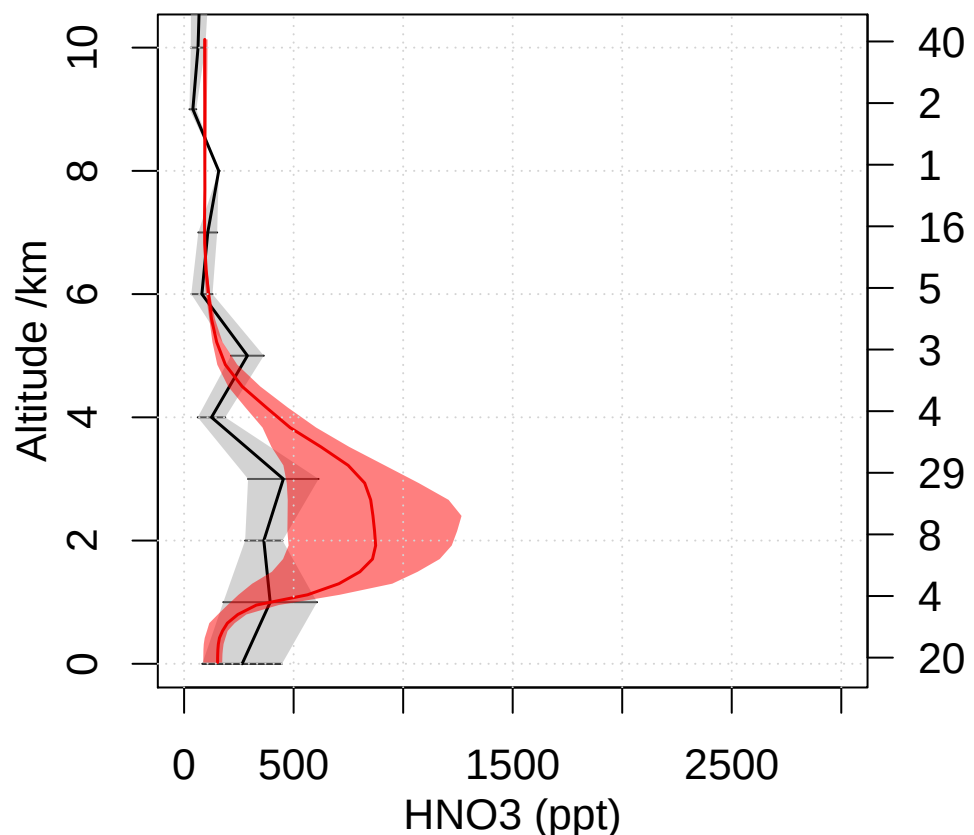
TRACE-A E-Brazil Coast 1992 09
Lat -35 – -25 Lon 310 – 320



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

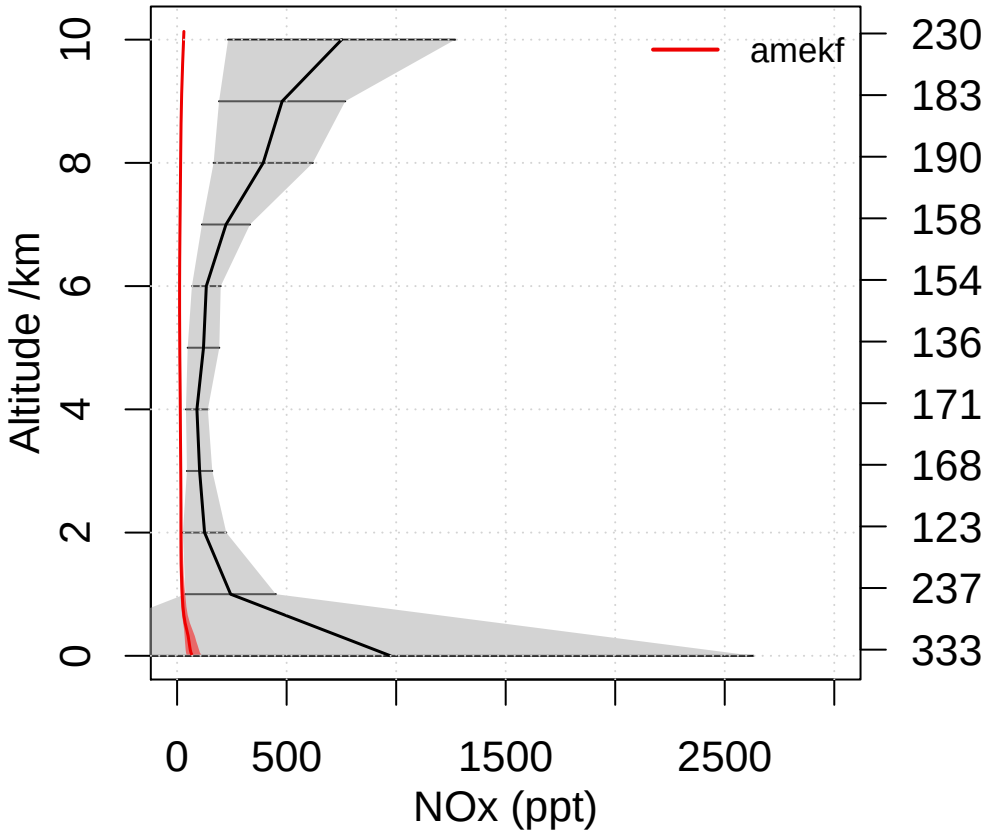


TRACE-A W-Africa Coast 1992 09
Lat -25 – -5 Lon 0 – 10

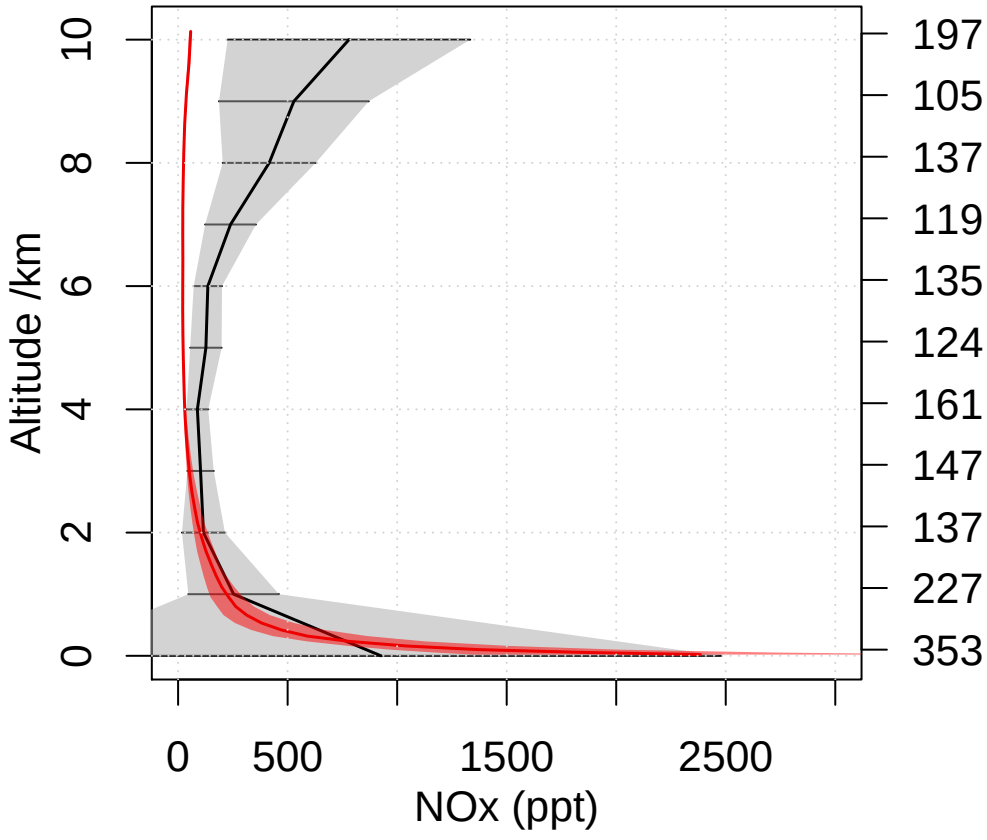


Emmons NOx comparison

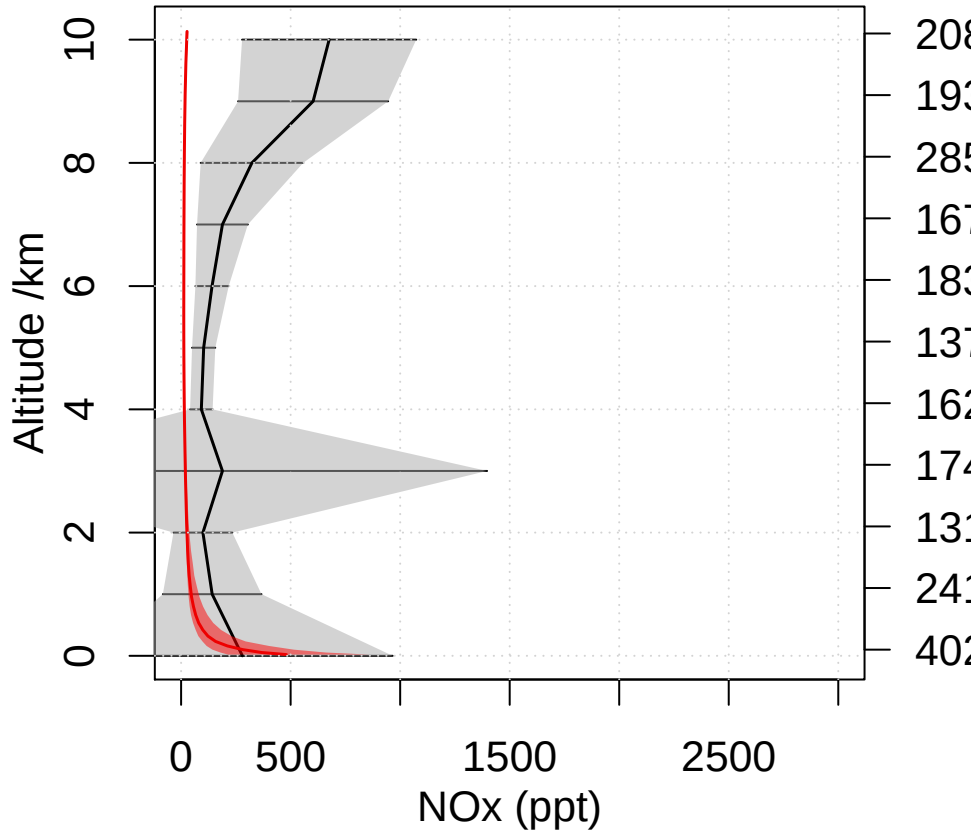
INTEX-NA East Coast 2004 07
Lat 32.5 – 40 Lon 296.5 – 307



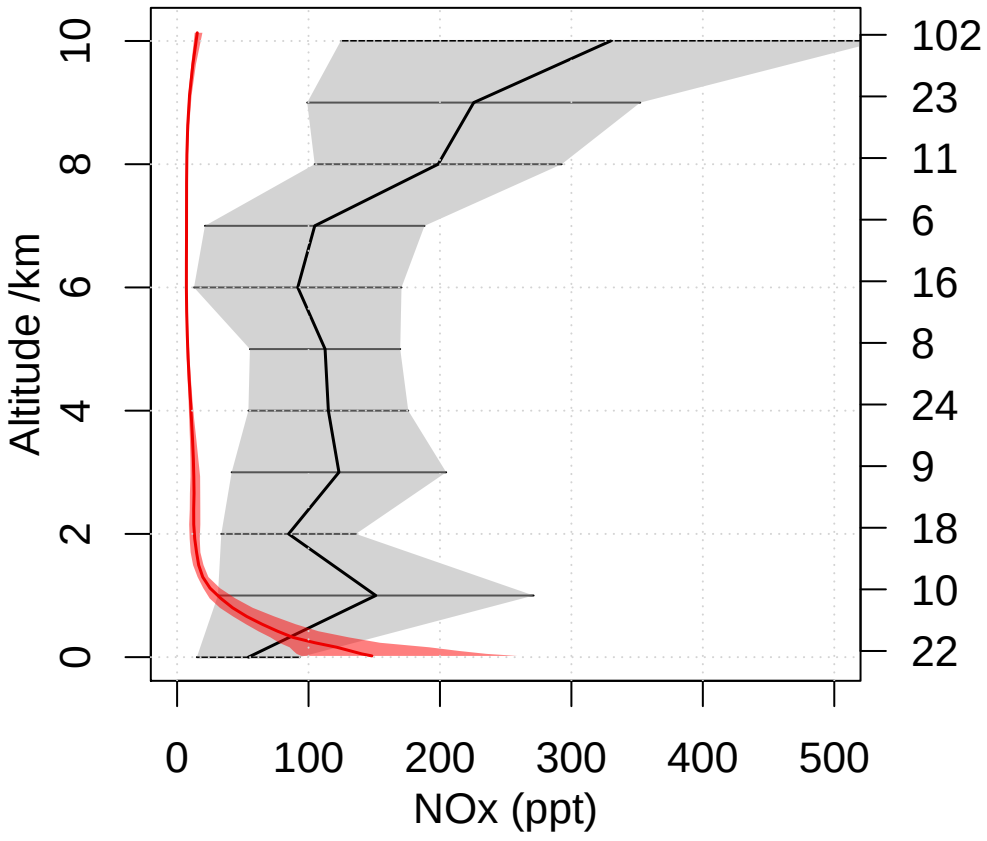
INTEX-NA Central 2004 07
Lat 30 – 40 Lon 259.5 – 285



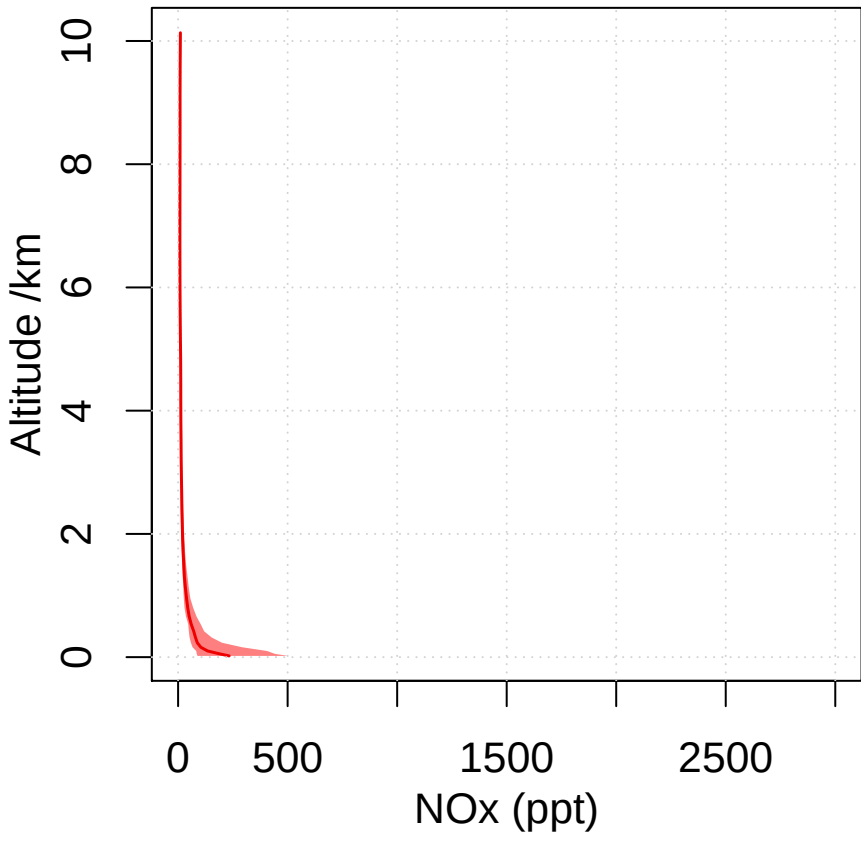
INTEX-NA North East 2004 07
Lat 42.5 – 52.5 Lon 285 – 310



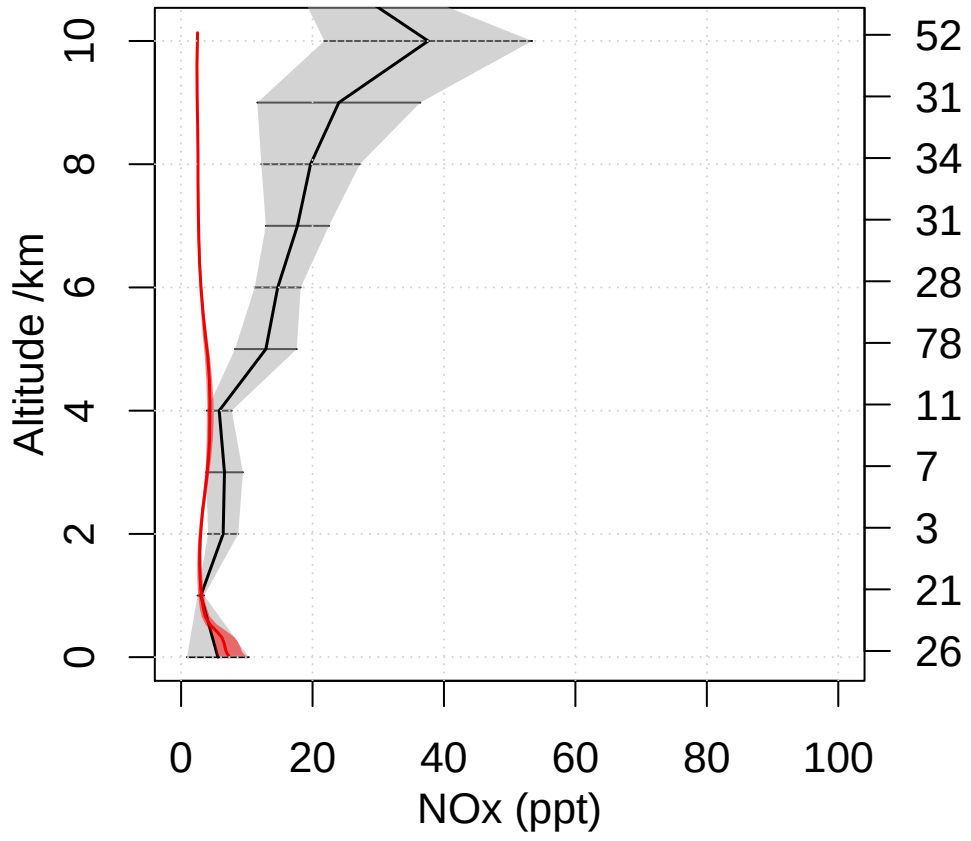
INTEX-NA West Coast 2004 07
Lat 32.5 – 45 Lon 217 – 240



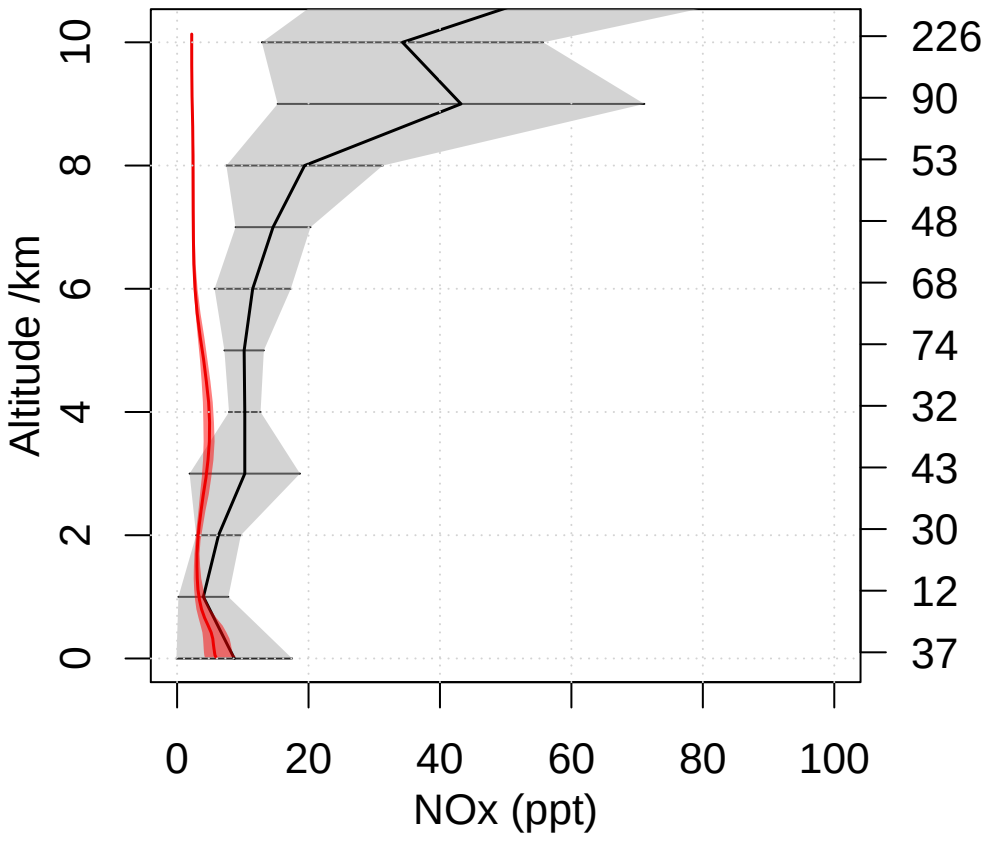
OP3 2008 07
Lat 2.5 – 7.5 Lon 112.5 – 120



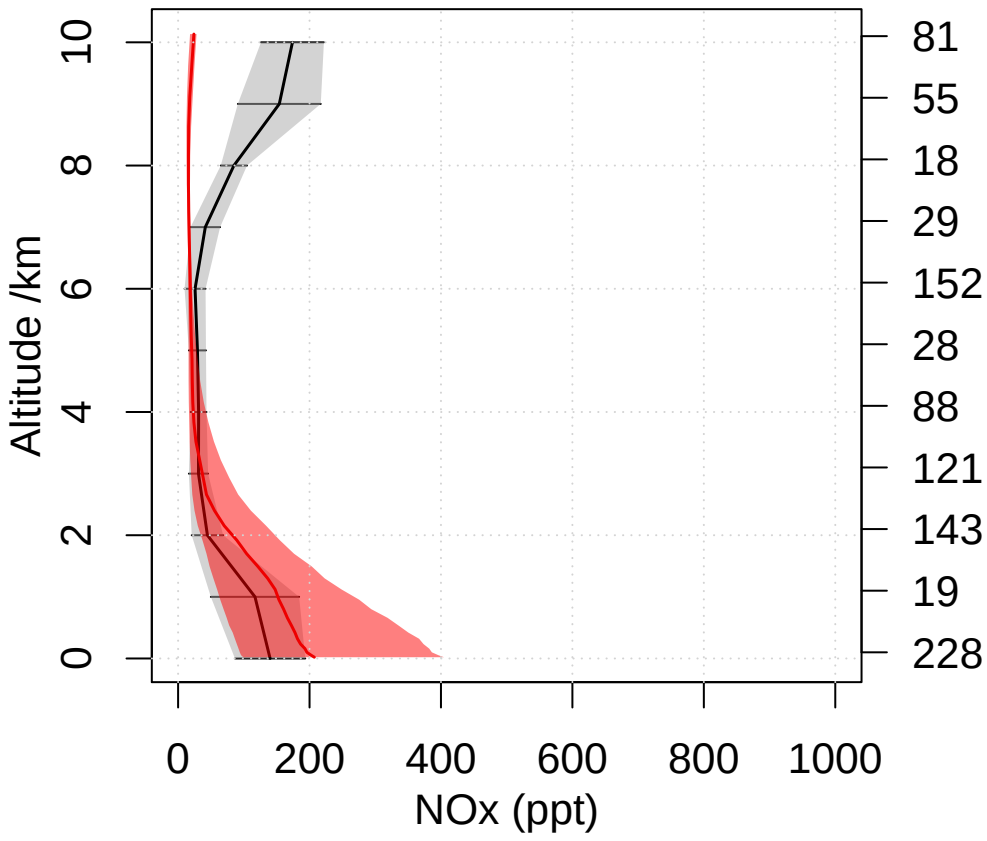
PEM-Tropics-B Christmas-Island 1999 07
Lat 0 – 10 Lon 200 – 220



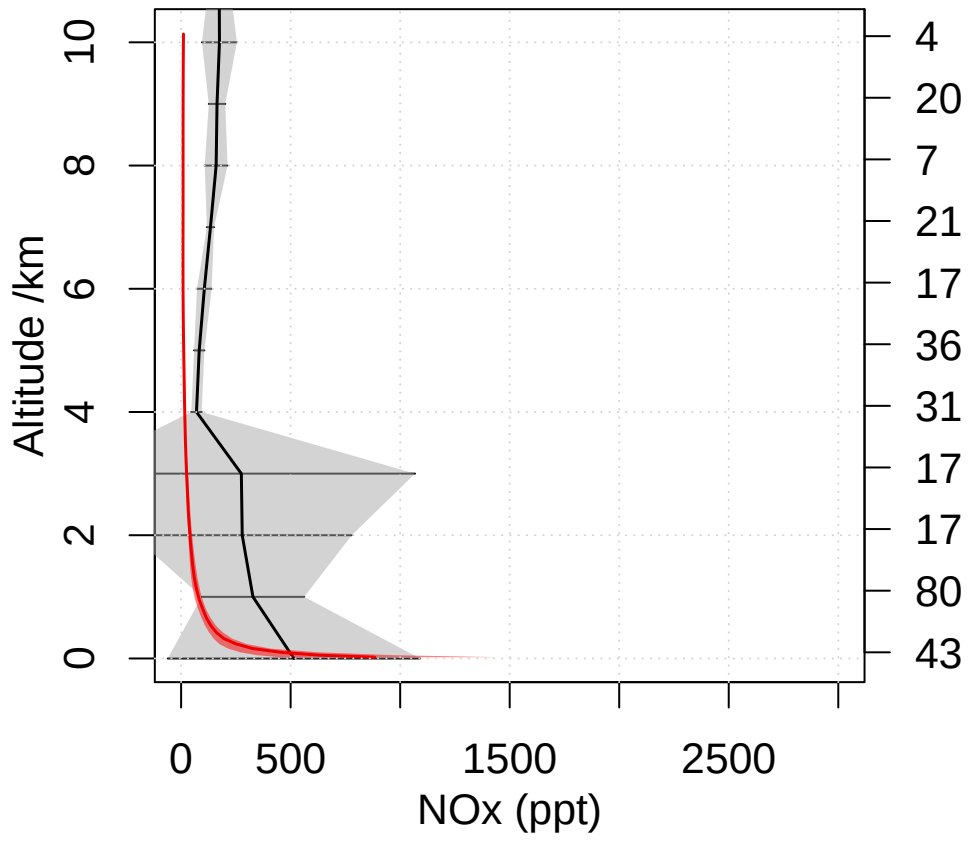
PEM-Tropics-B Tahiti 1999 03
Lat -20 – 0 Lon 200 – 230



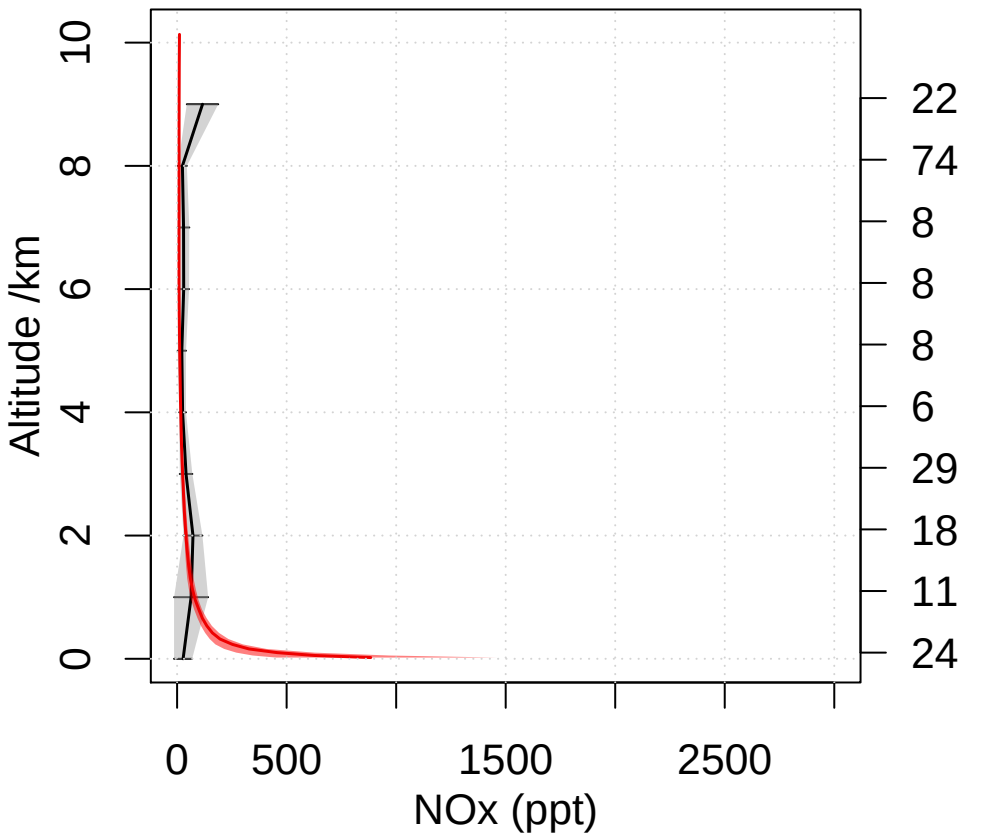
PEM-West-B Japan 1994 02
Lat 25 – 40 Lon 135 – 150



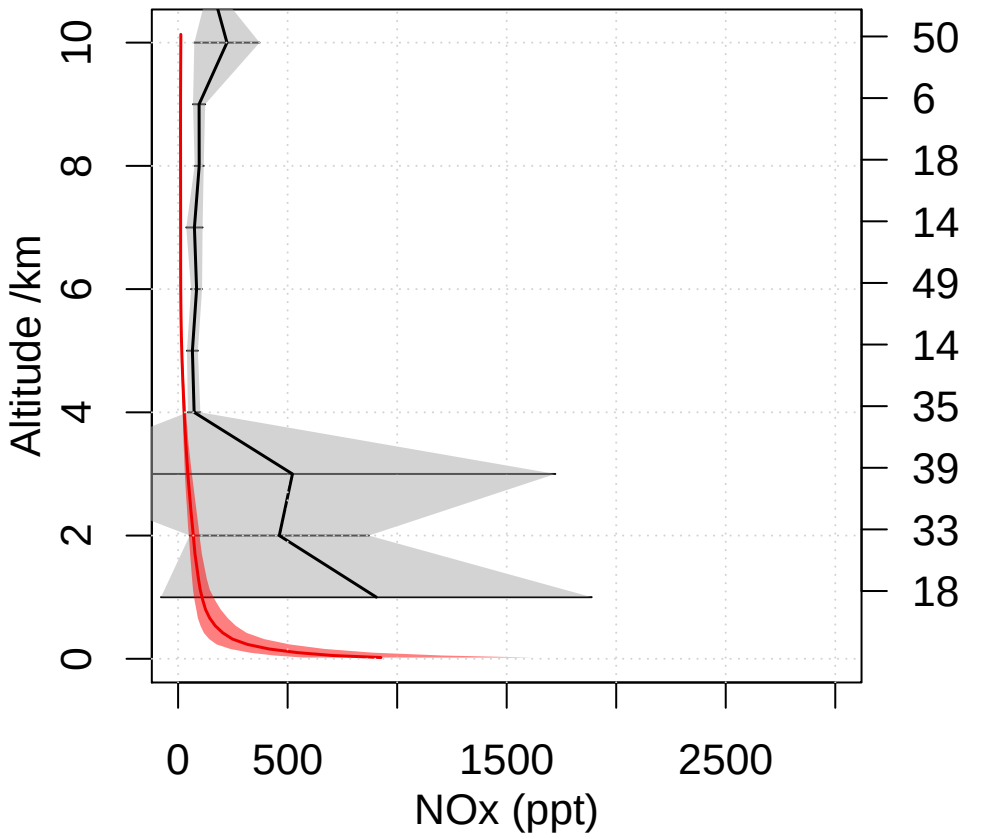
TRACE-A E-Brazil 1992 09
Lat -15 – -5 Lon 310 – 320



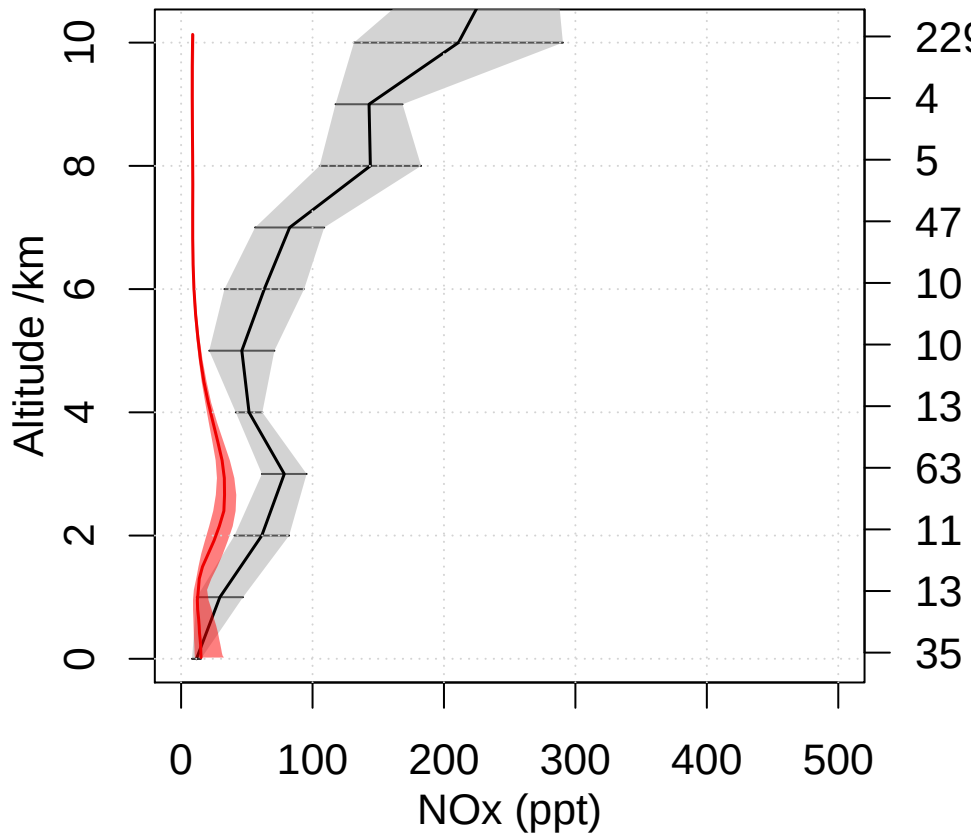
TRACE-A E-Brazil Coast 1992 09
Lat -35 – -25 Lon 310 – 320



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



[OH] Air mass weighted

UKCA amekf

Red: Spivakovsky values

(10^6 molecules cm^{-3})

Mean OH = 4.18×10^5

Values in (): Std dev

Pressure (hPa)

250

500

750

1000

-50

0

50

Latitude

0.2
0.64
(0.15)

0.53
1.43
(0.12)

0.74
1.36
(0.16)

0.41
0.64
(0.24)

0.29
0.72
(0.22)

1
2
(0.21)

1.4
1.99
(0.19)

0.66
0.88
(0.35)

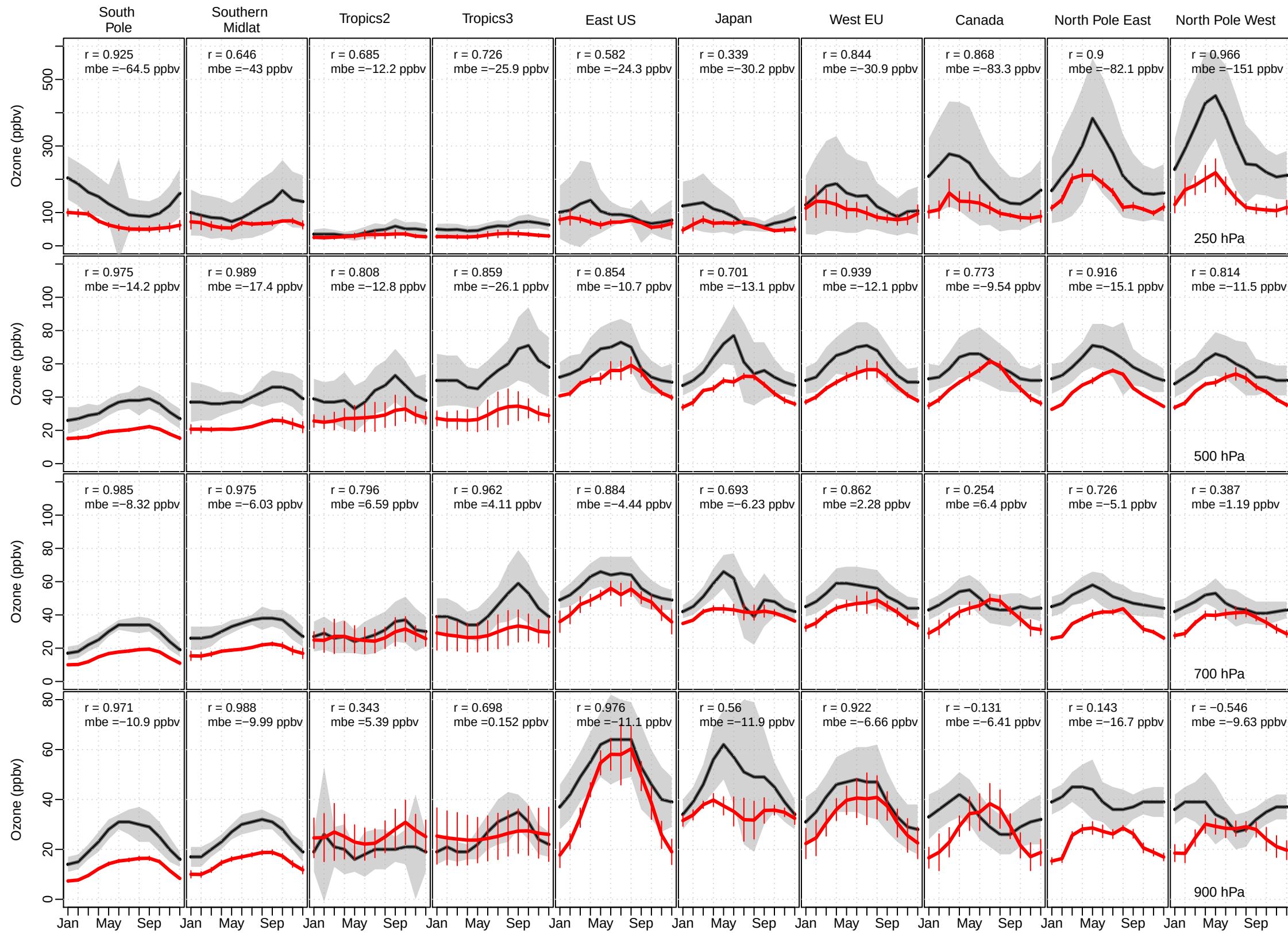
0.27
0.47
(0.28)

1.2
1.44
(0.12)

1.8
1.52
(0.23)

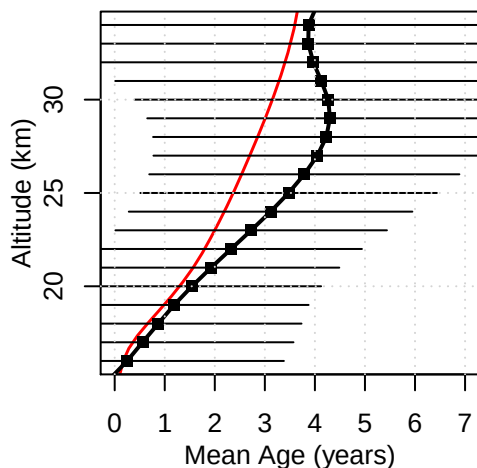
0.75
0.76
(0.56)

amekf Tilmes ozone sonde comparison

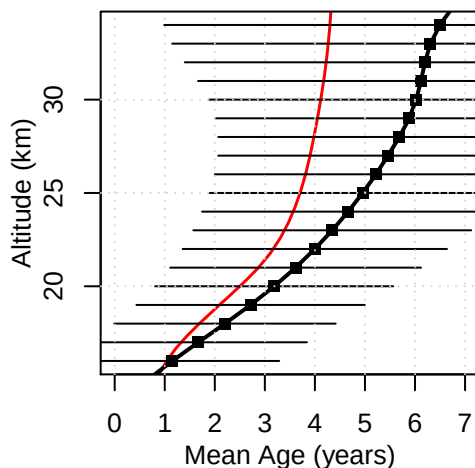


UKCA amekf Mean Age of Air

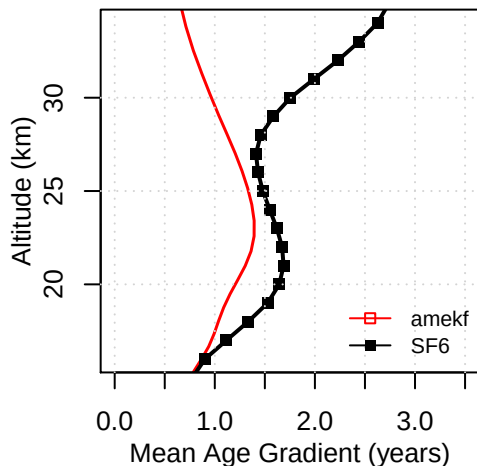
Tropical Mean Age Profile



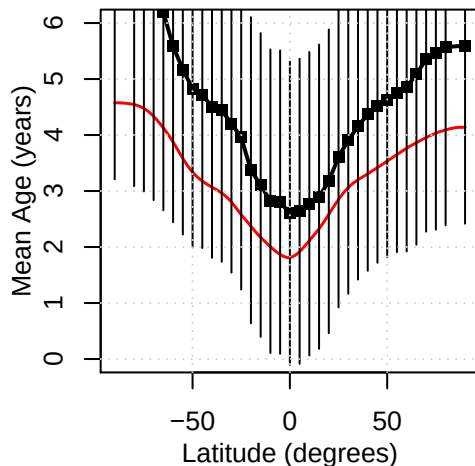
Midlatitude Mean Age Profile



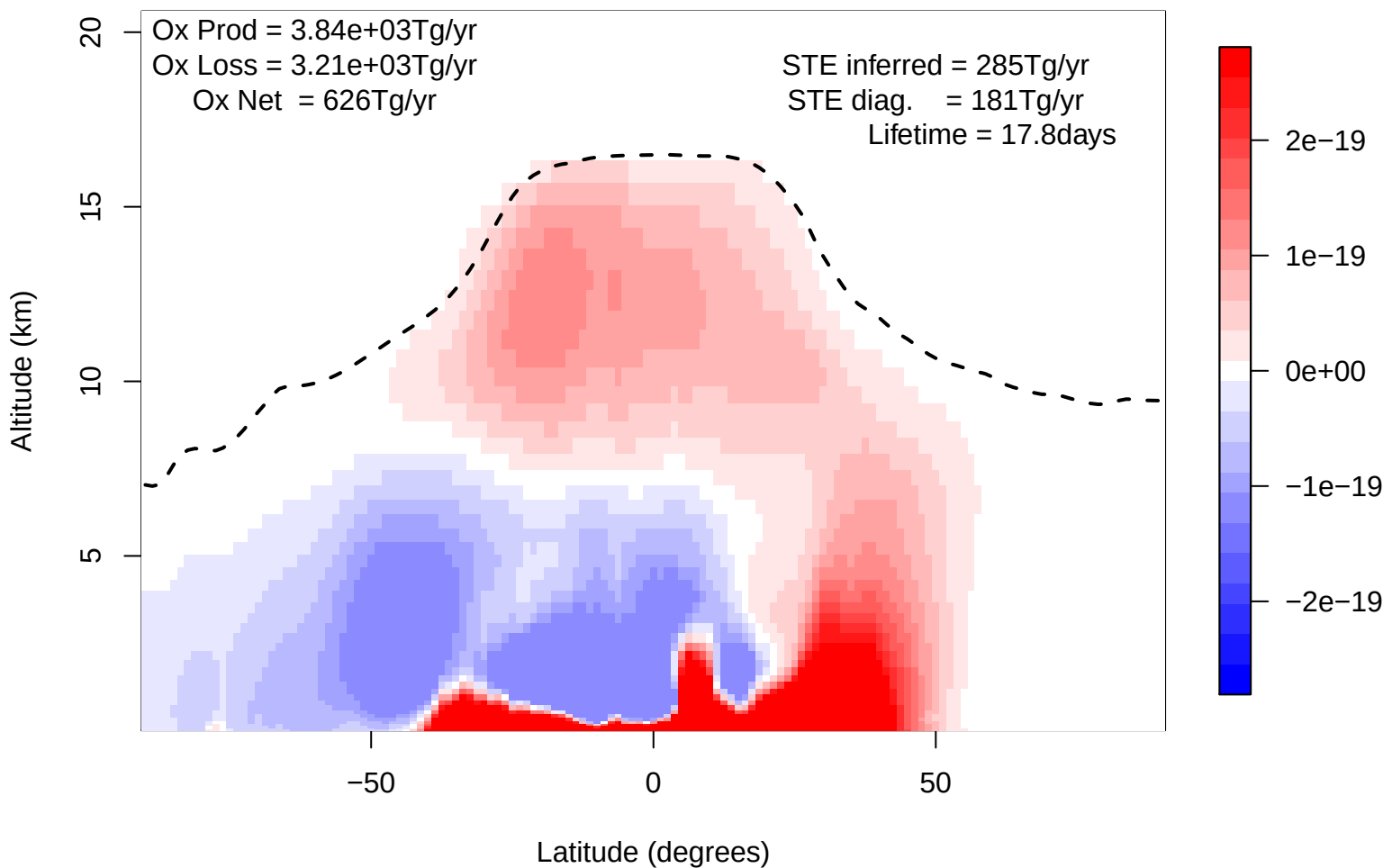
Trop-Midlat Mean Age Gradient Prof



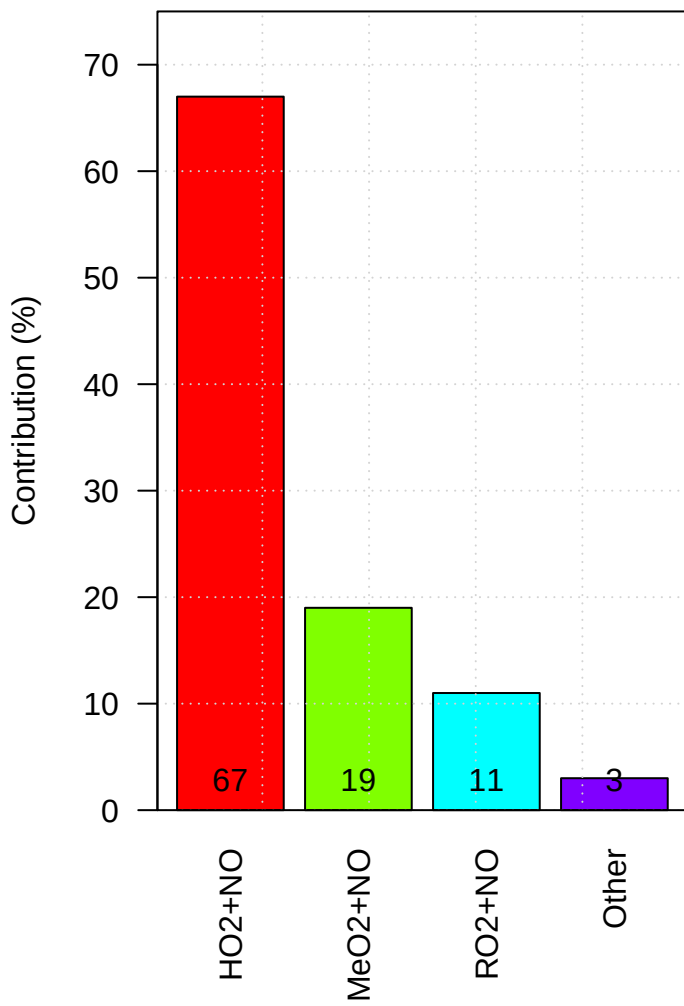
Mean Age, 23km (~50hPa)



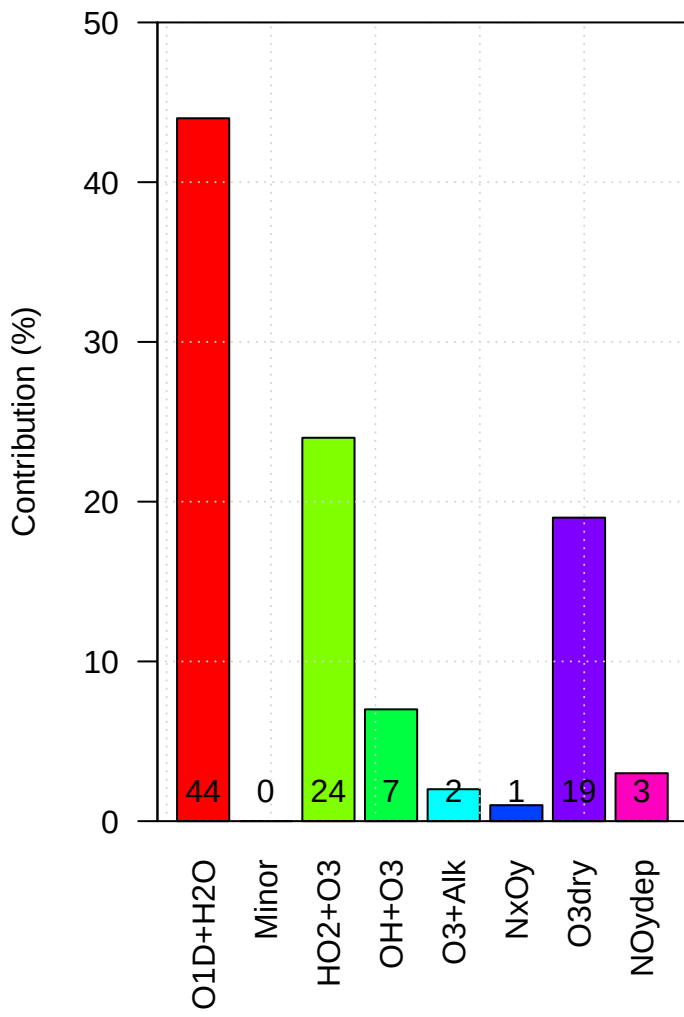
UKCA amekf Ox Net Chemical Production



amekf Production of Tropospheric Ox

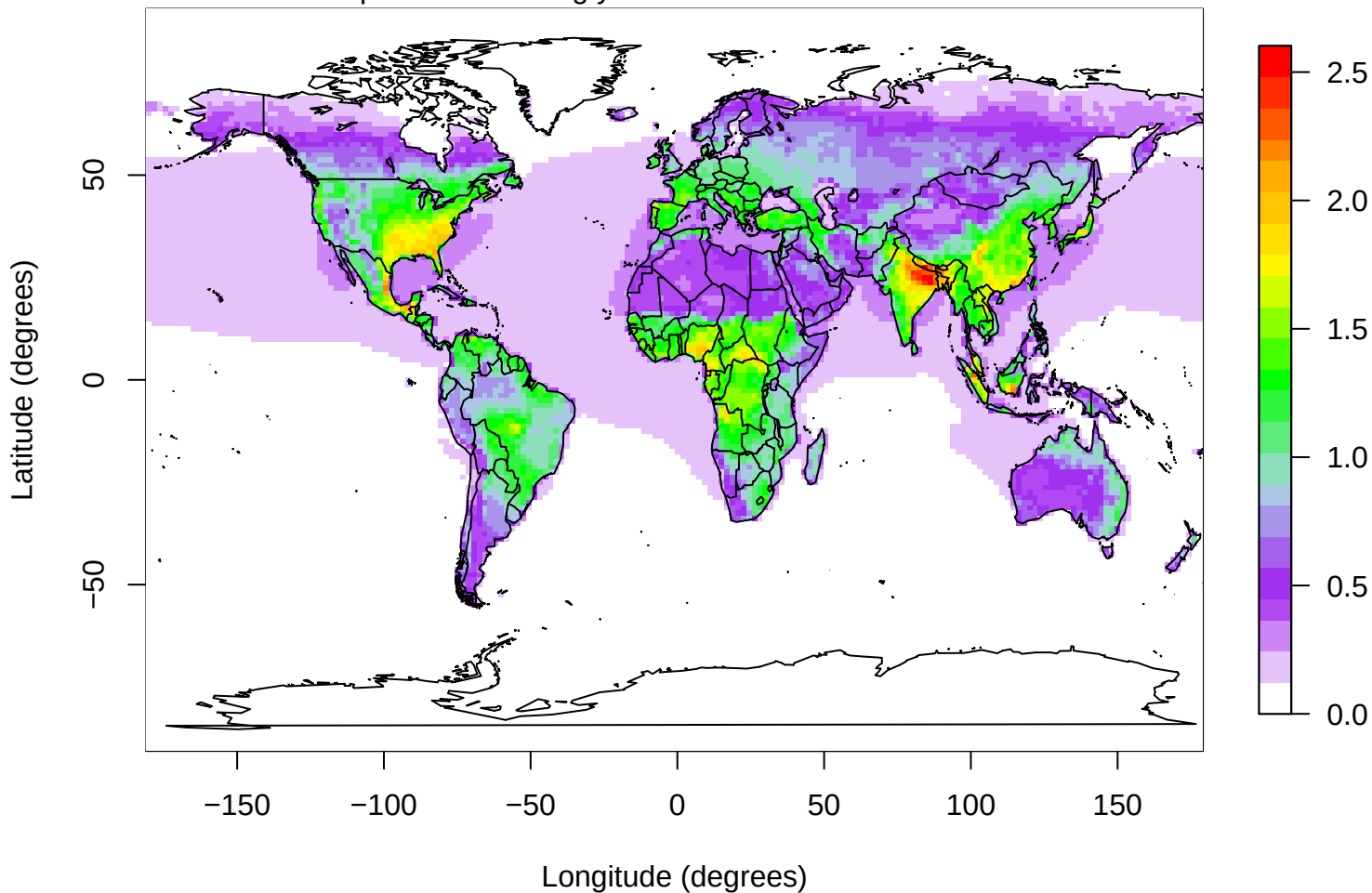


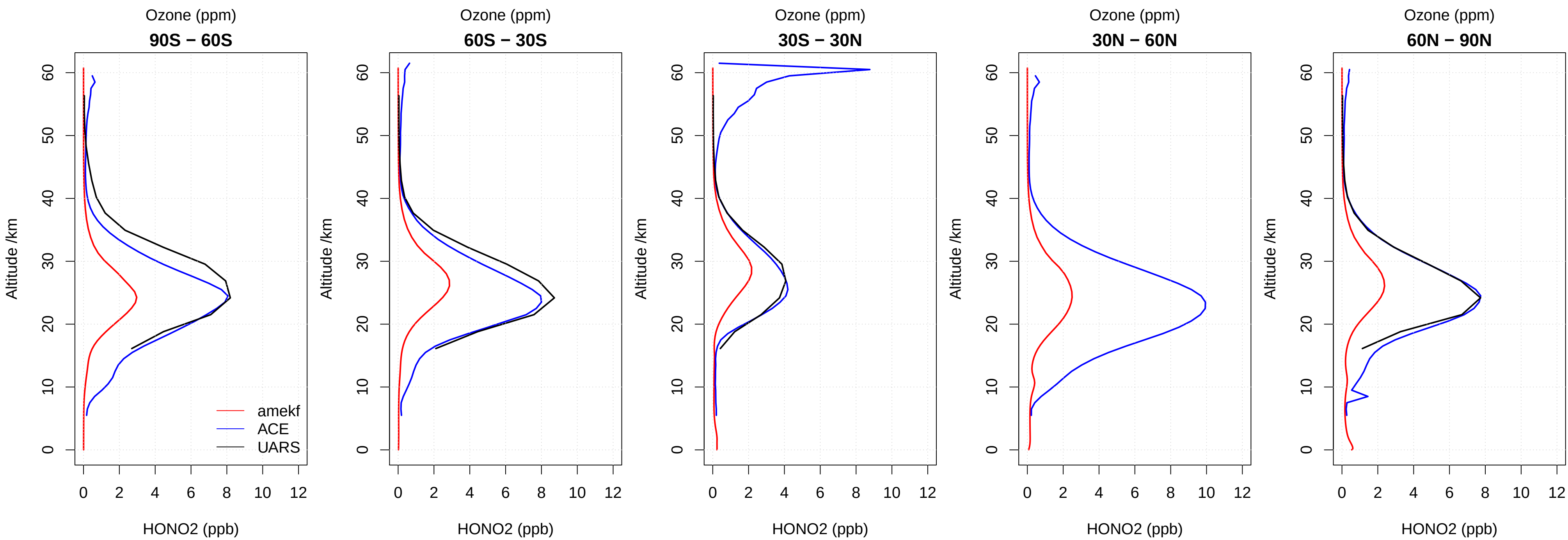
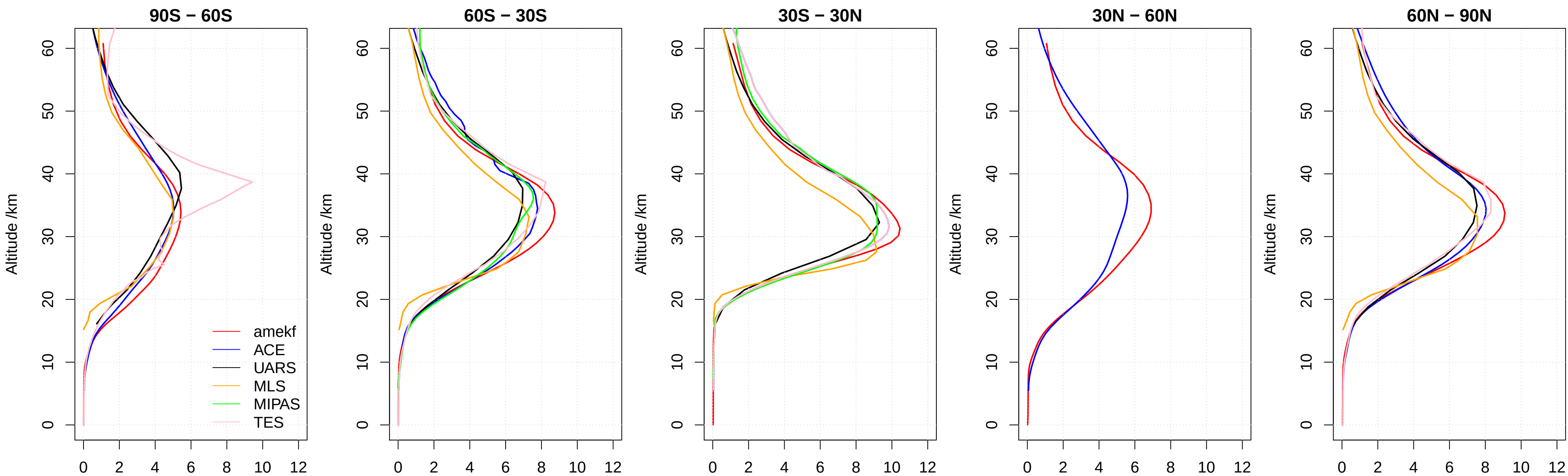
amekf Loss of Tropospheric Ox

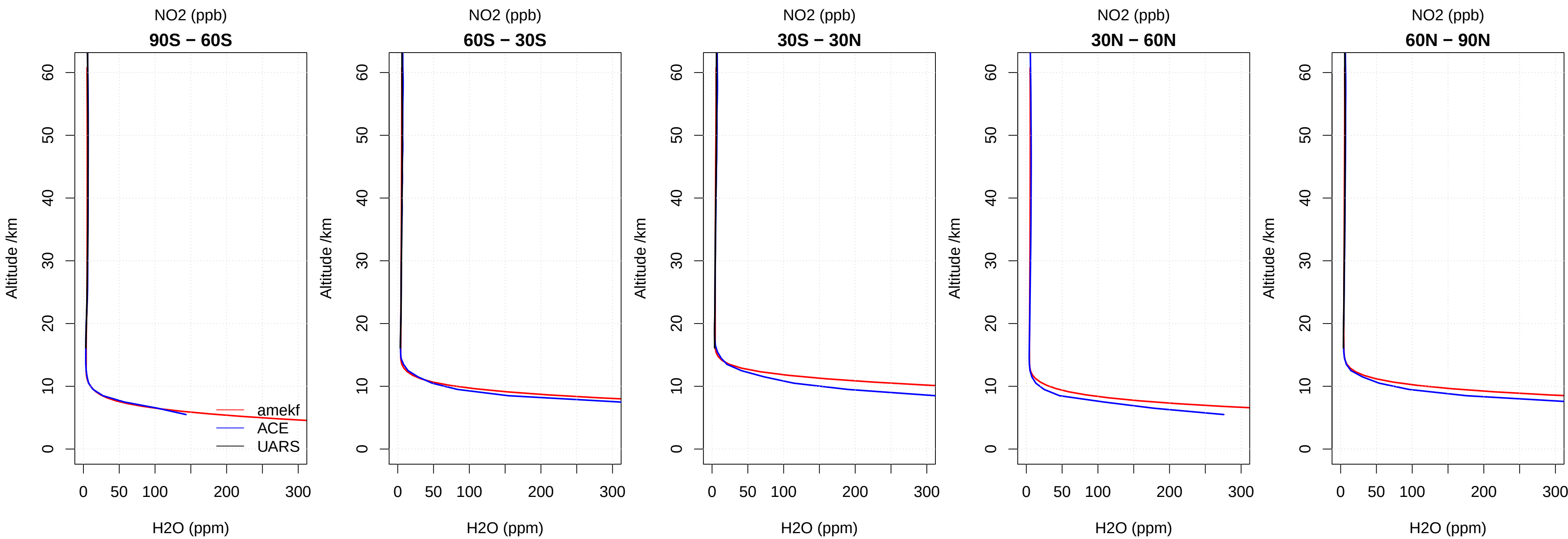
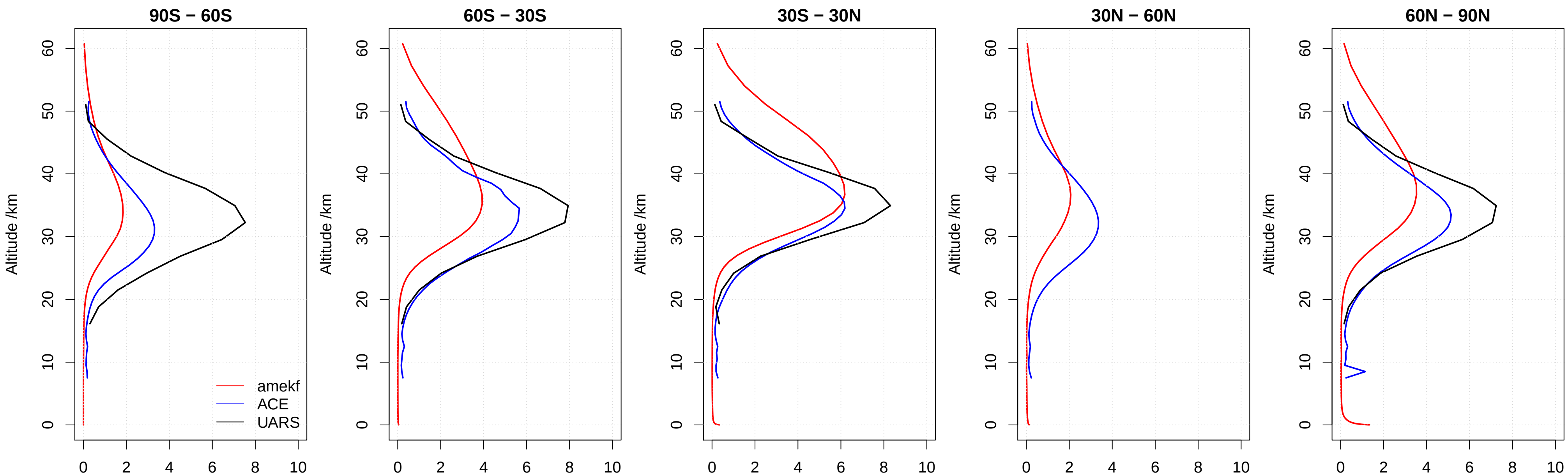


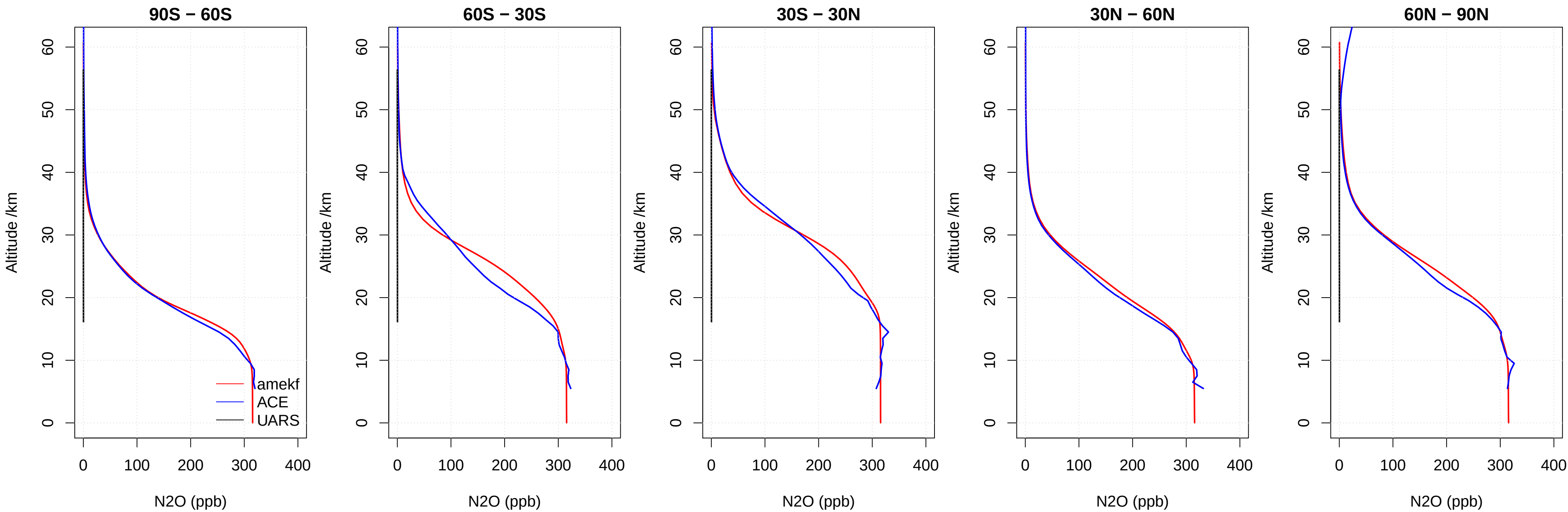
UKCA Ox deposition amekf

Total Ox Deposition = 911 Tg/yr

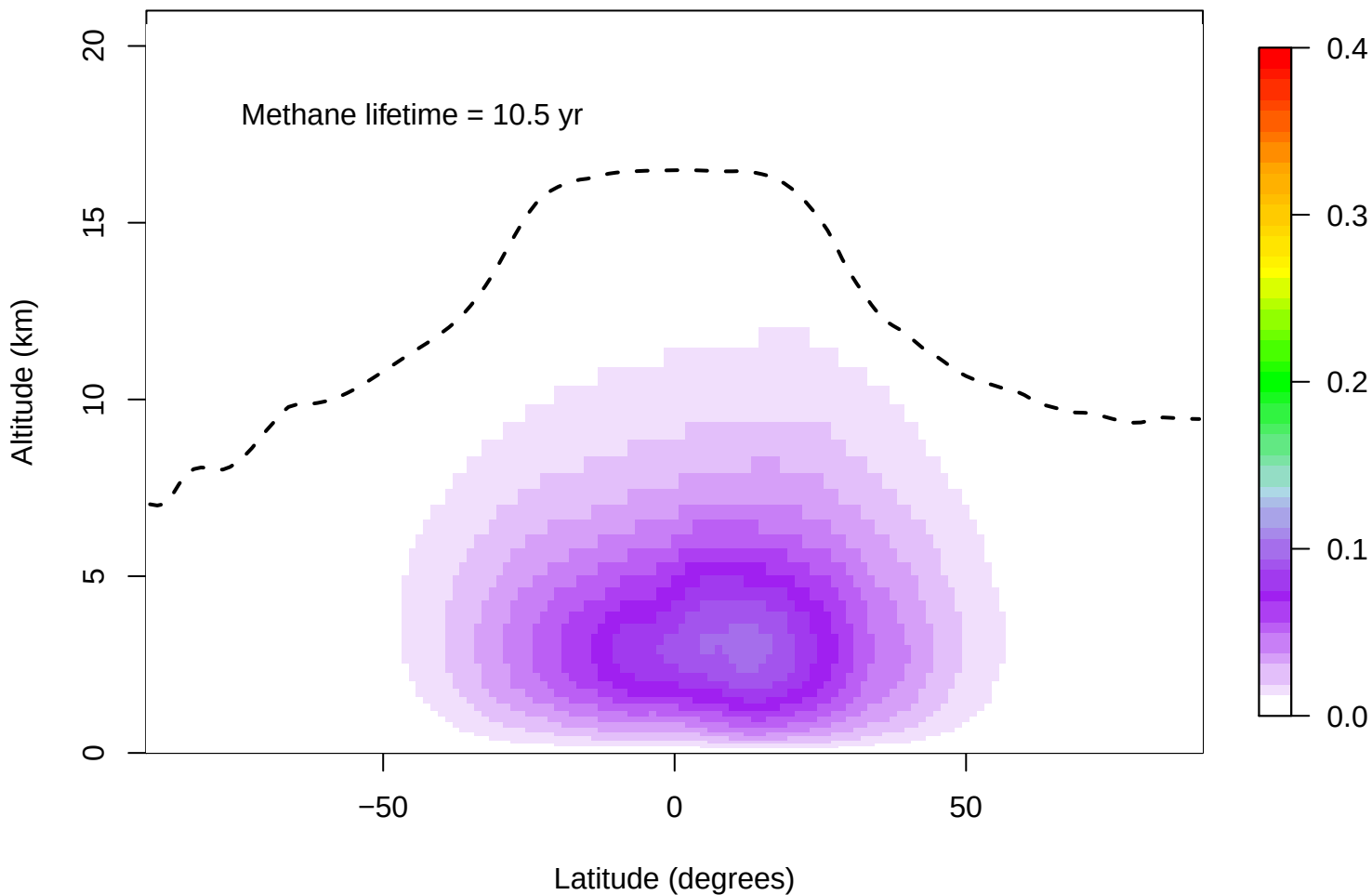


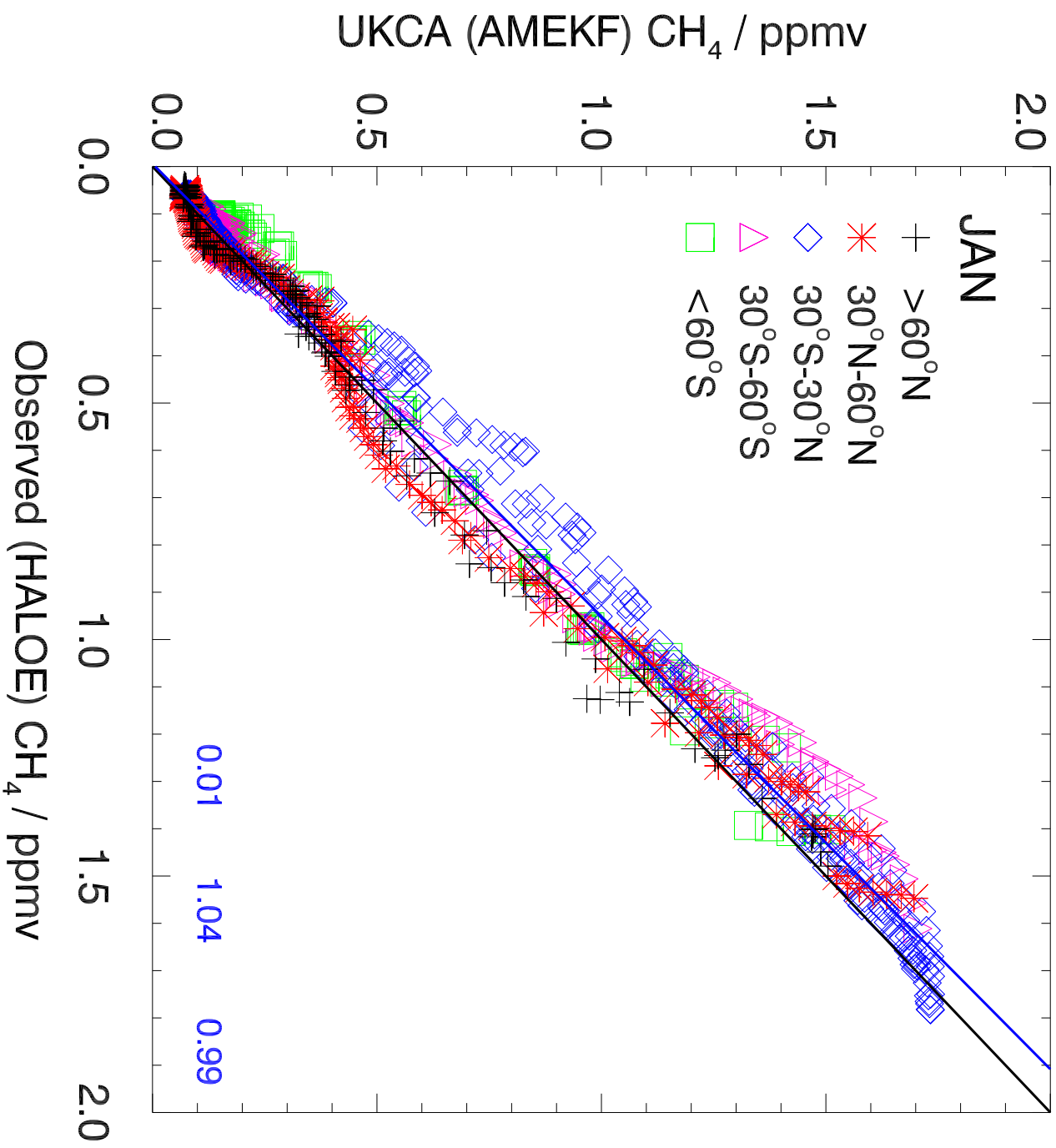


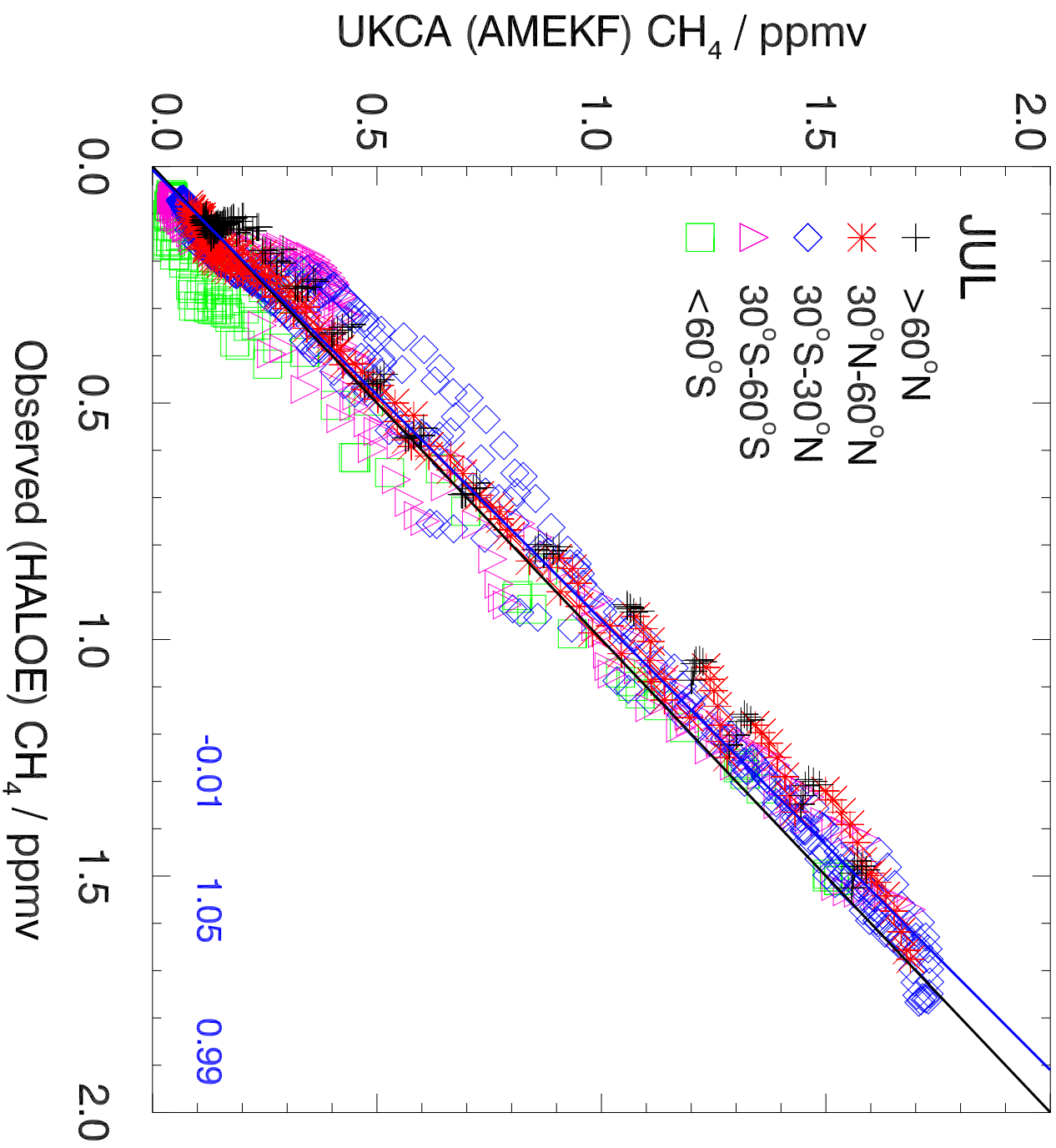


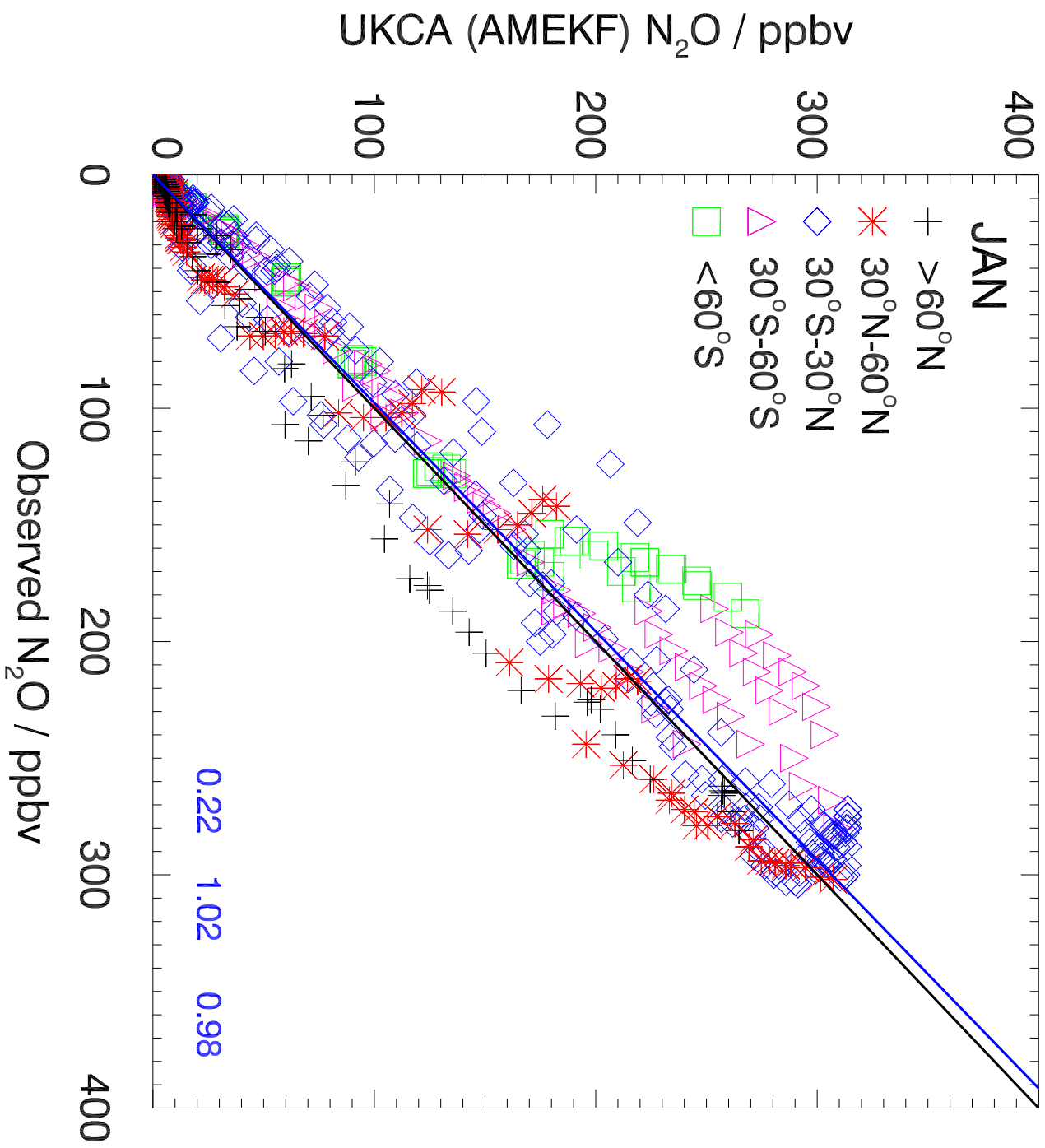


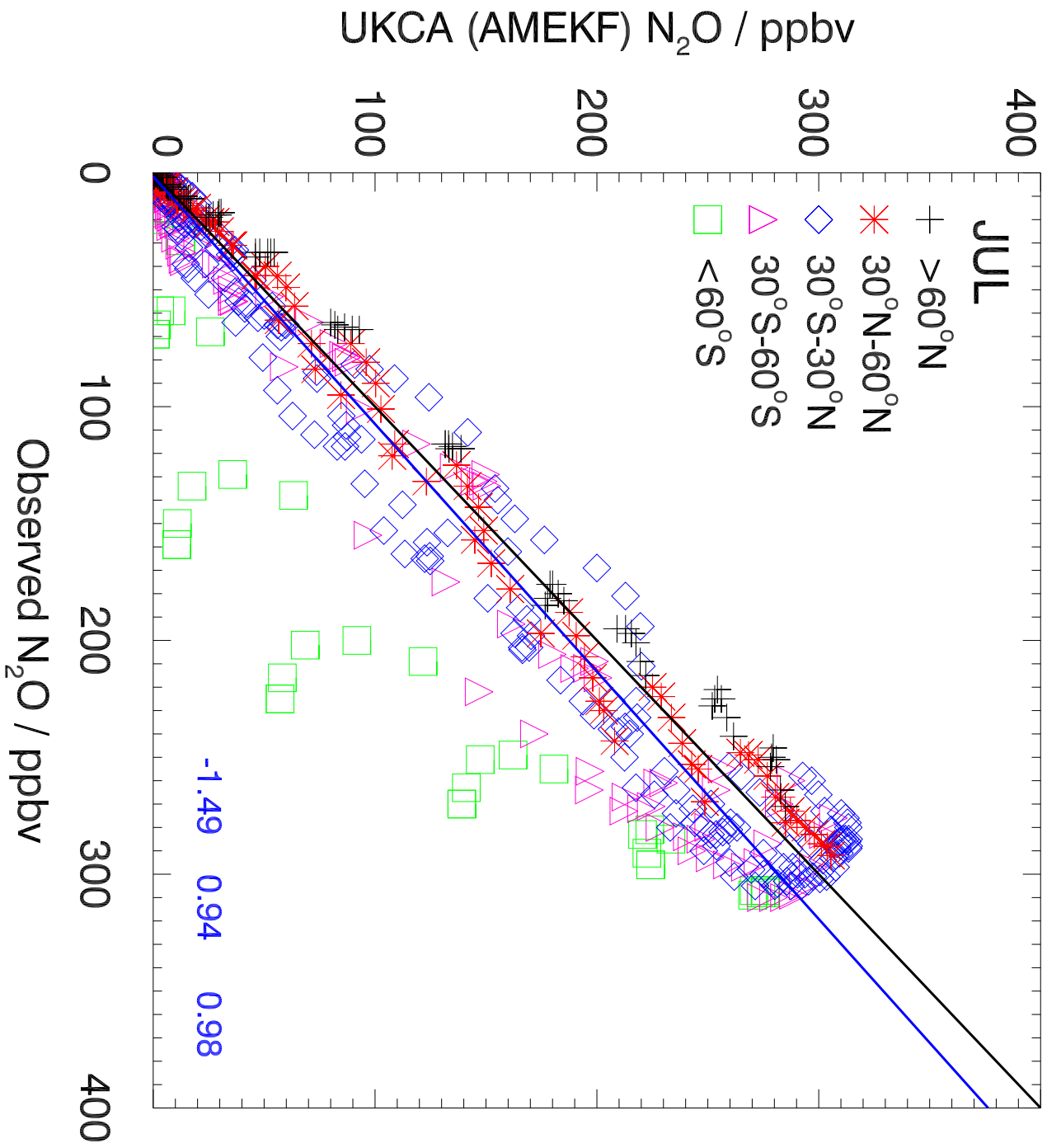
UKCA amekf
% CH₄ + OH flux (moles cm⁻³ s⁻¹)

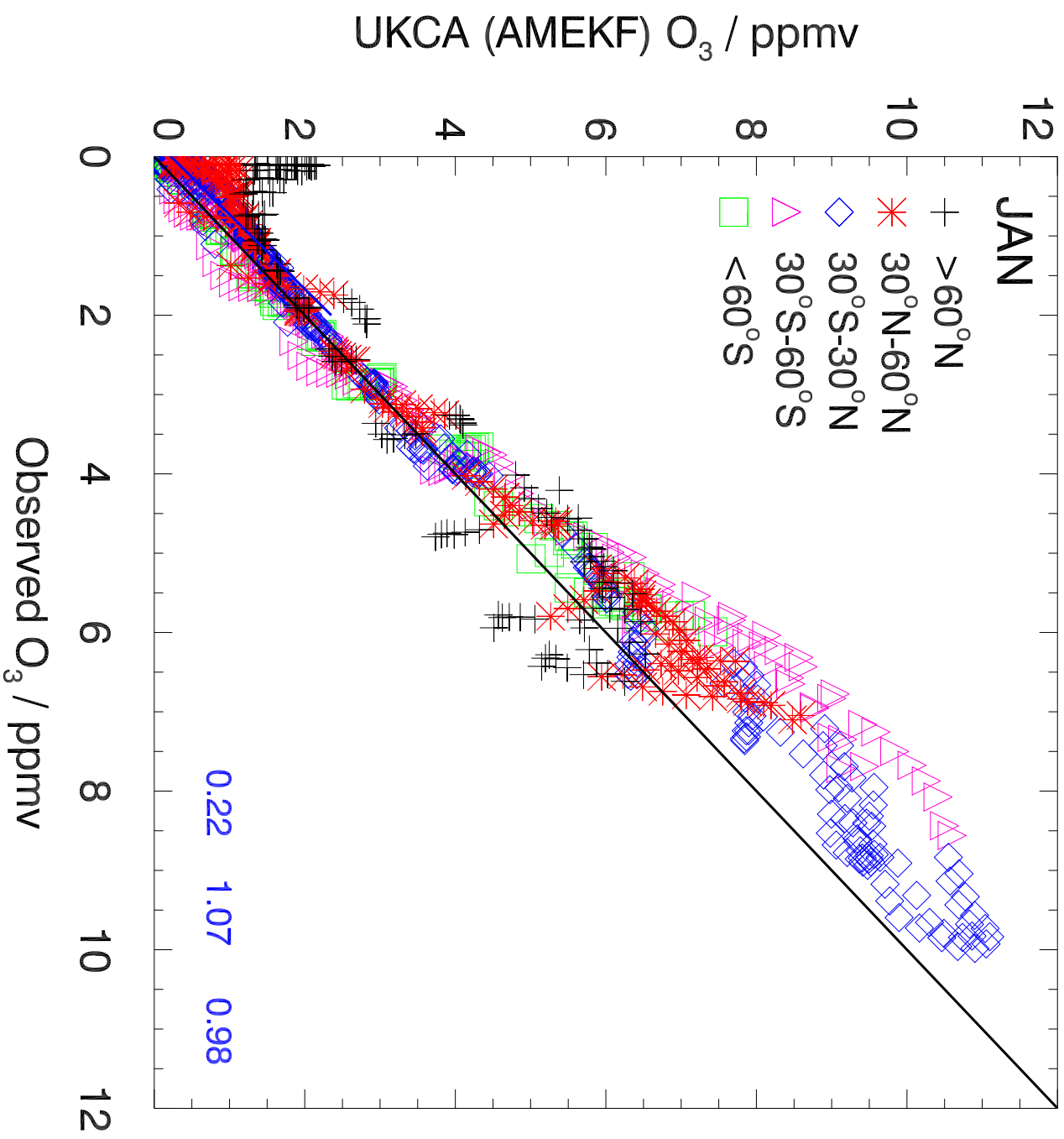


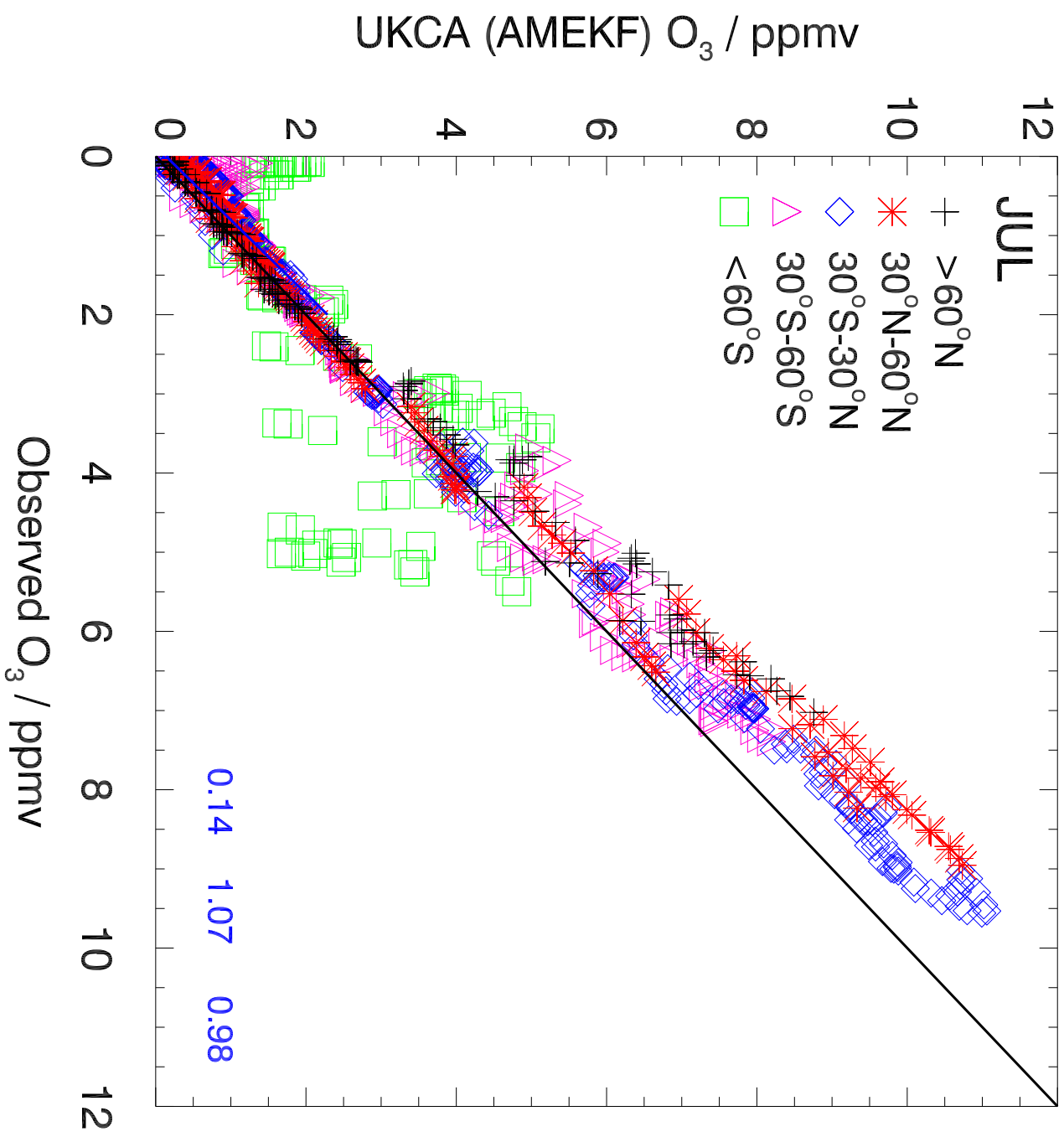


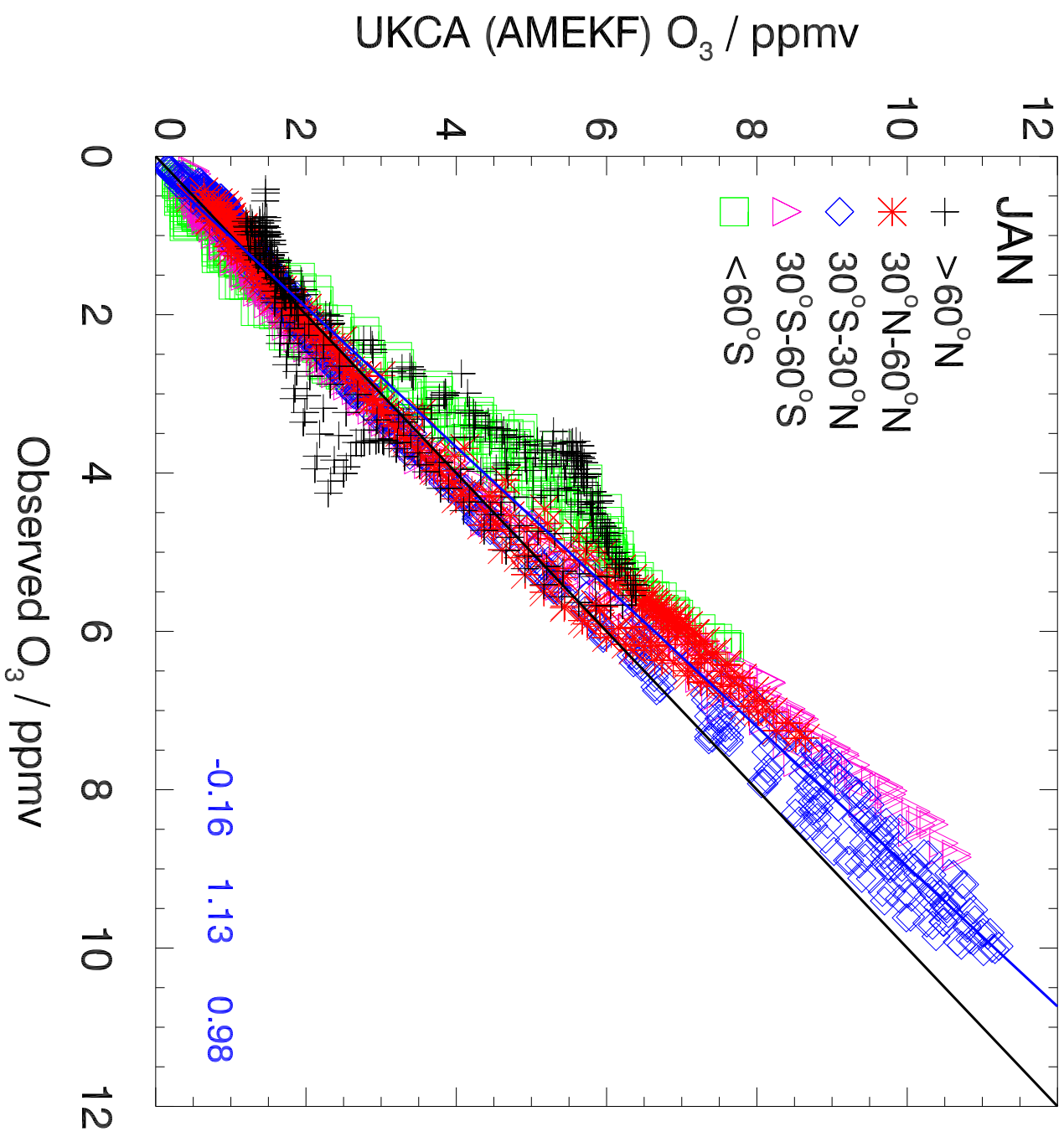


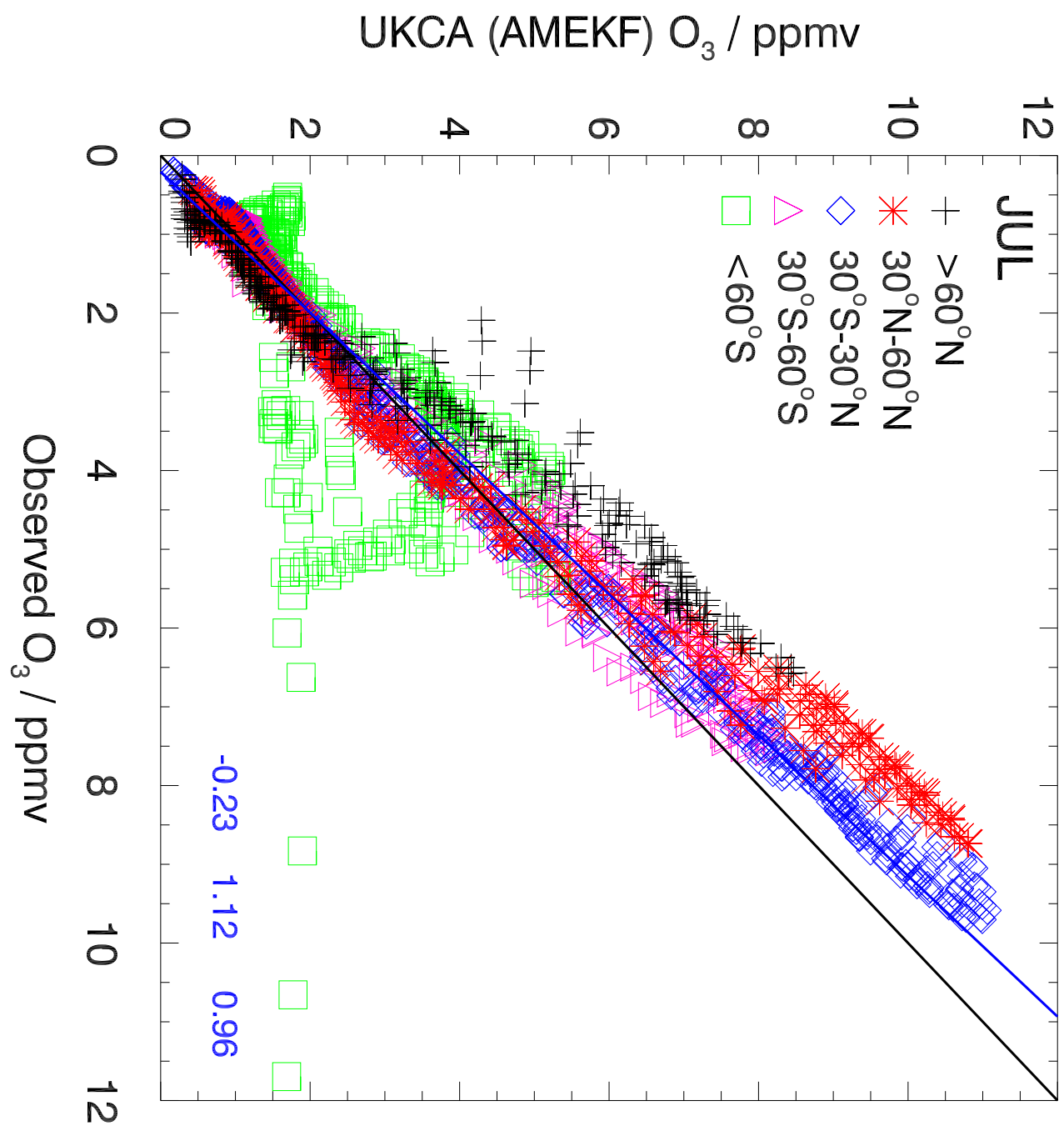




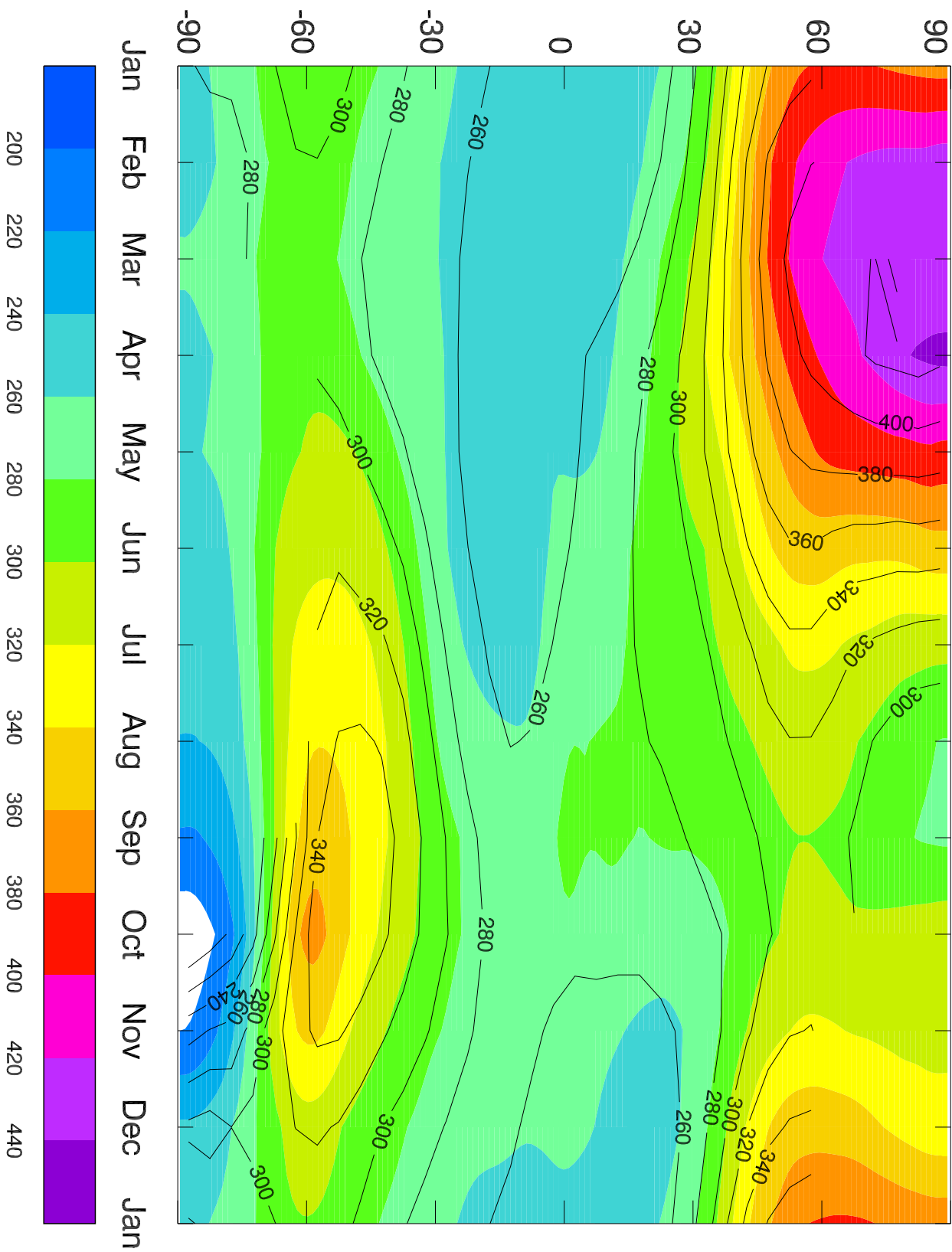




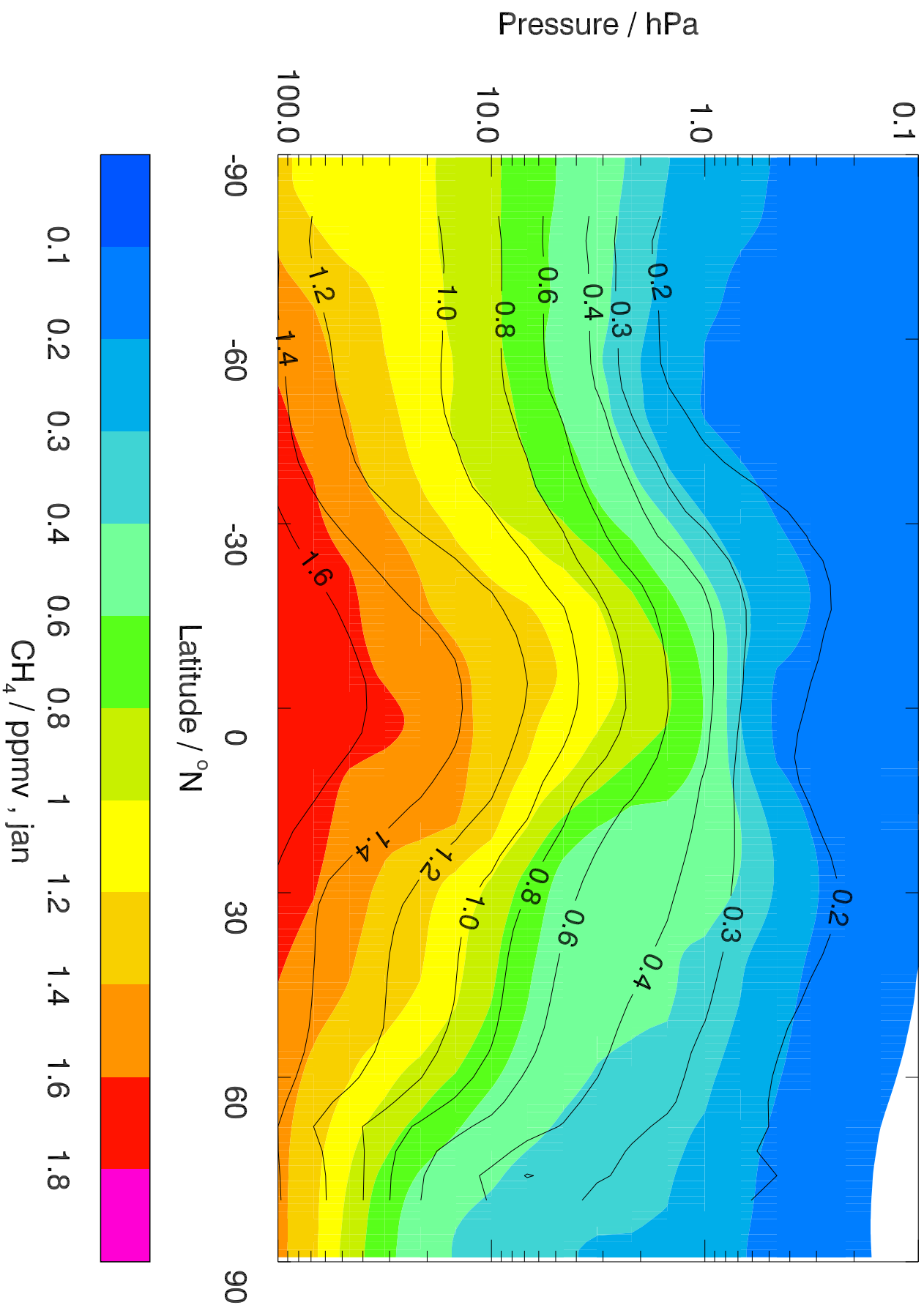




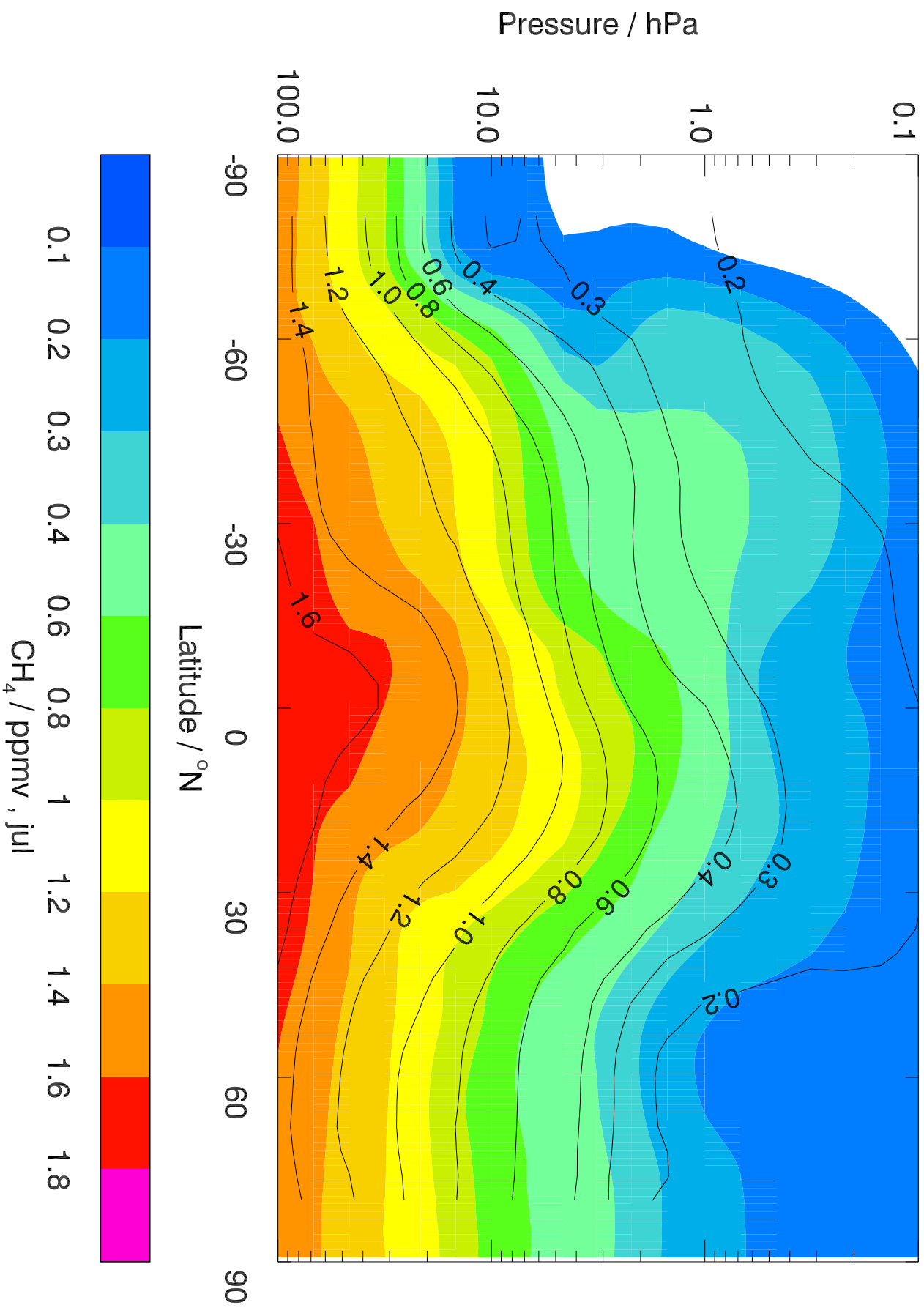
Total Ozone Column (DU). Colours: UKCA (AMEKF), Contours: TOMS



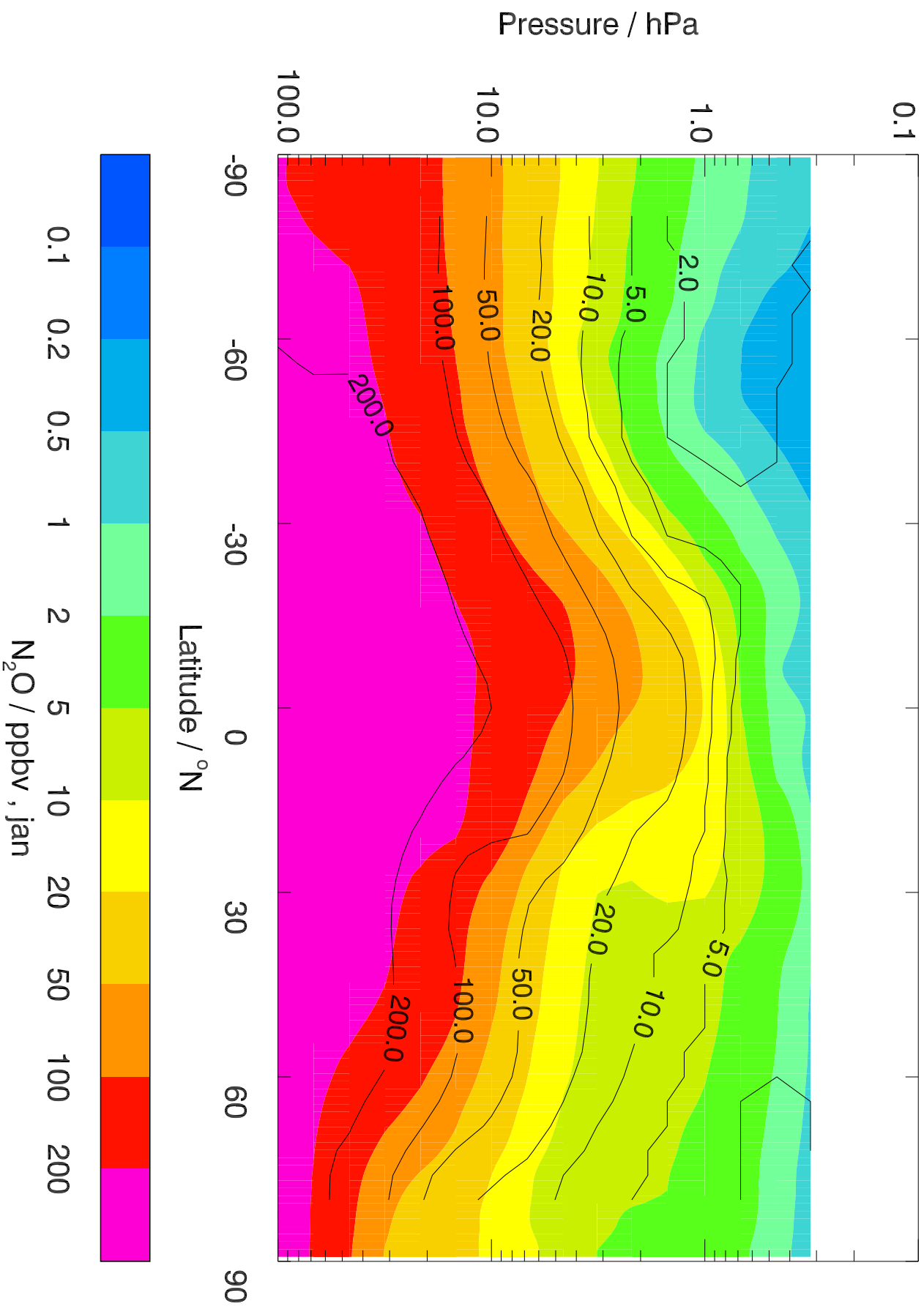
Colours: UKCA (AMEKF), Contours: HALOE



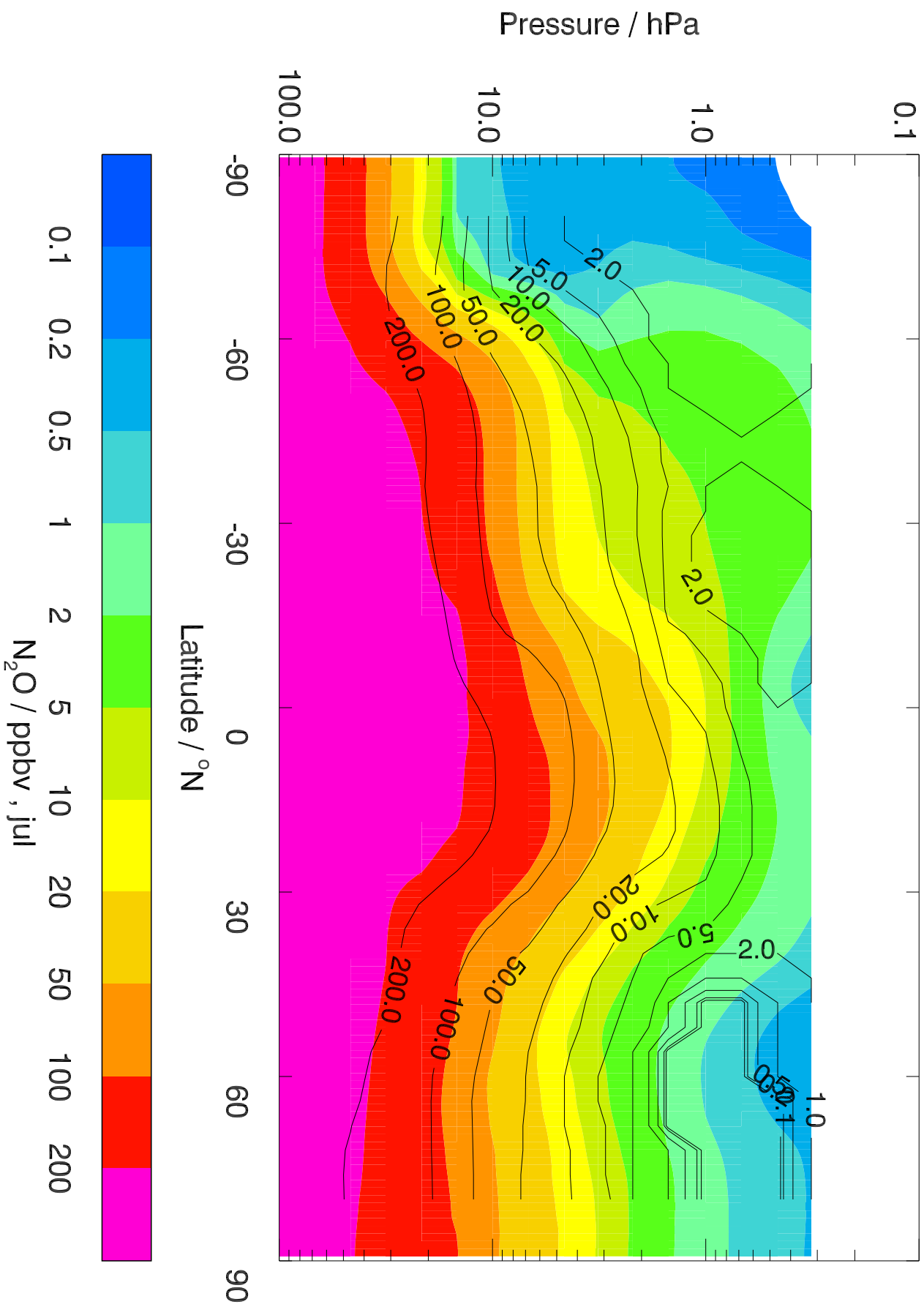
Colours: UKCA (AMEKF), Contours: HALOE



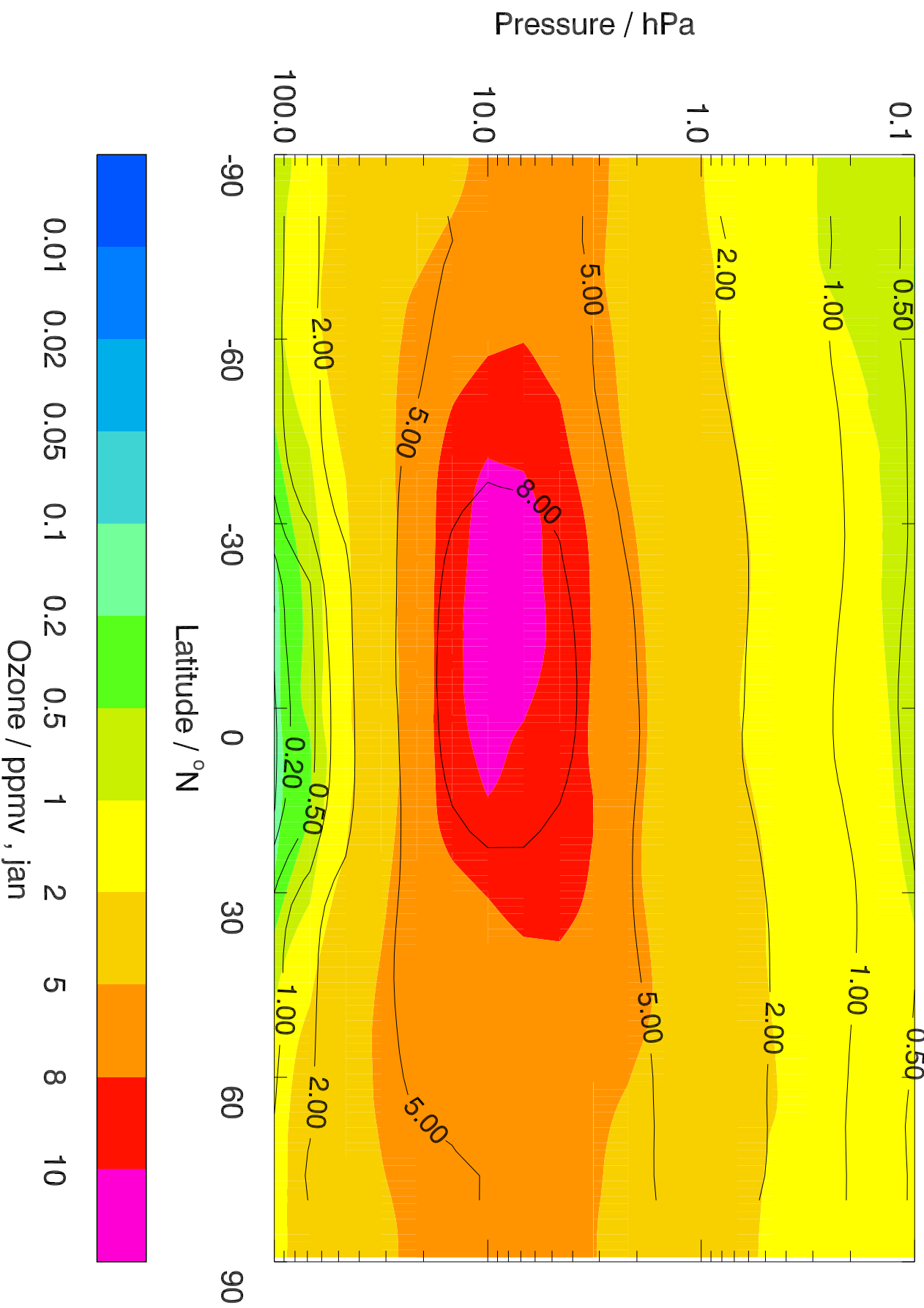
Colours: UKCA (AMEKF), Contours: HALOE



Colours: UKCA (AMEKF), Contours: HALOE



Colours: UKCA (AMEKF), Contours: HALOE



Colours: UKCA (AMEKF), Contours: HALOE

