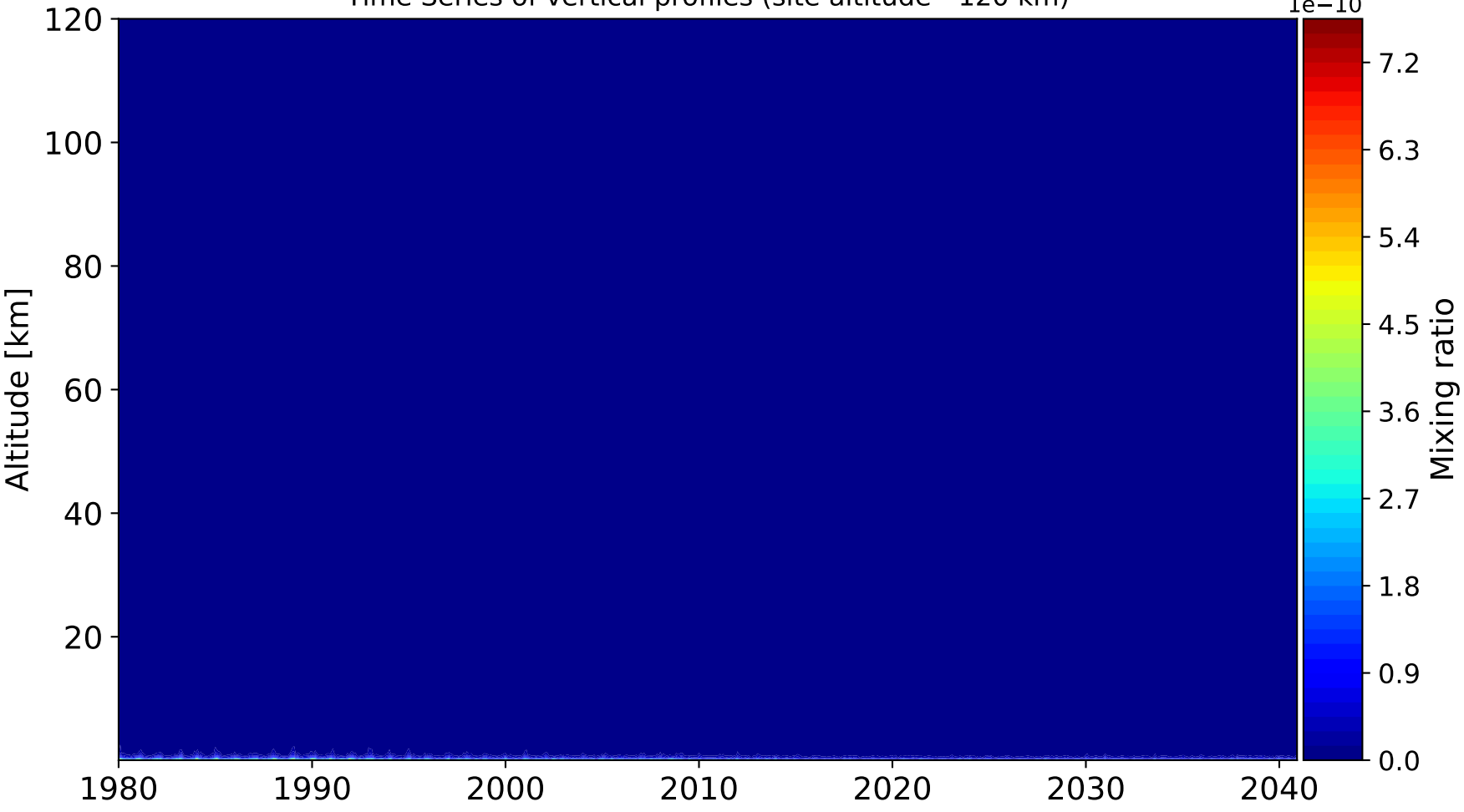
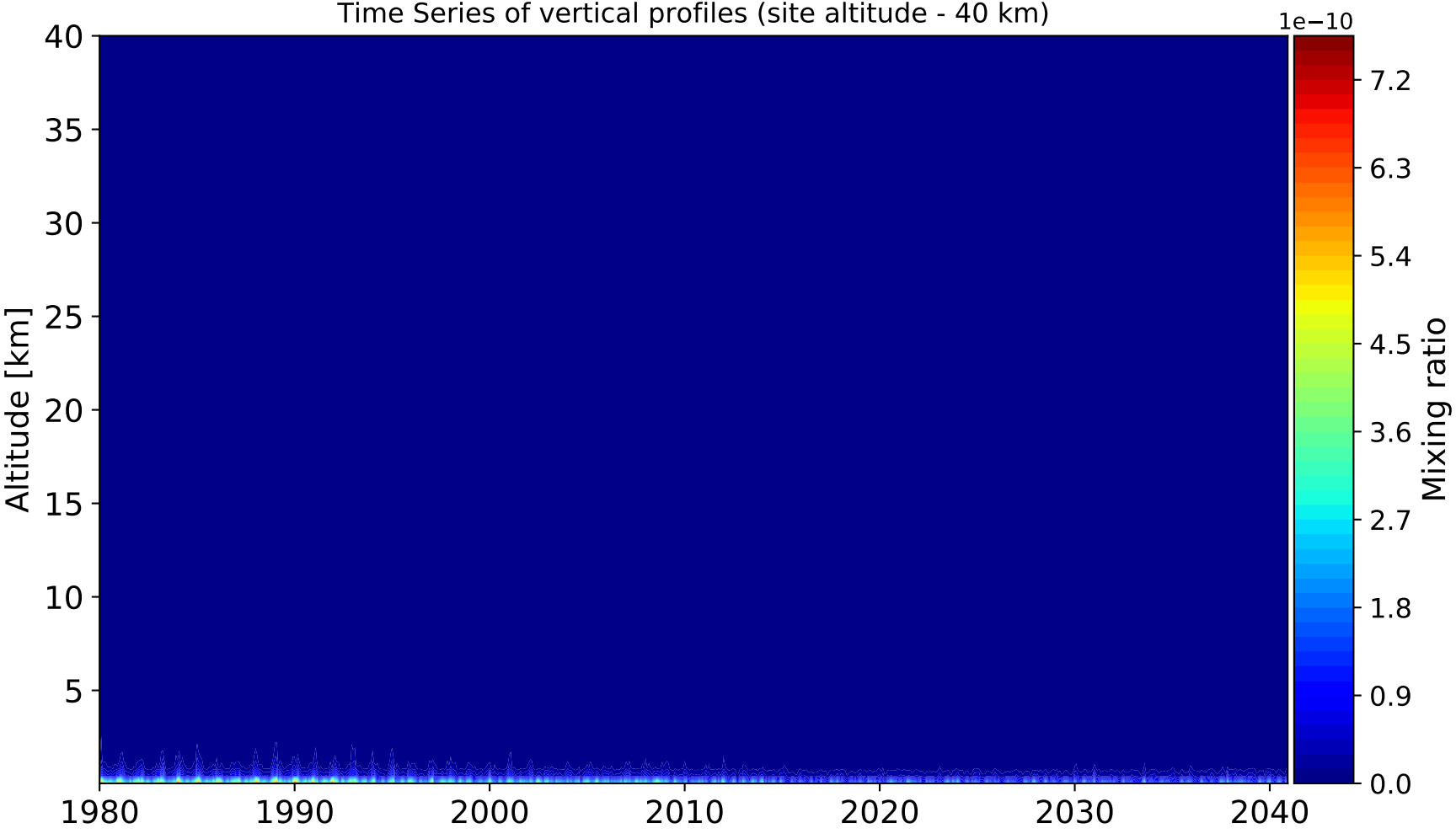
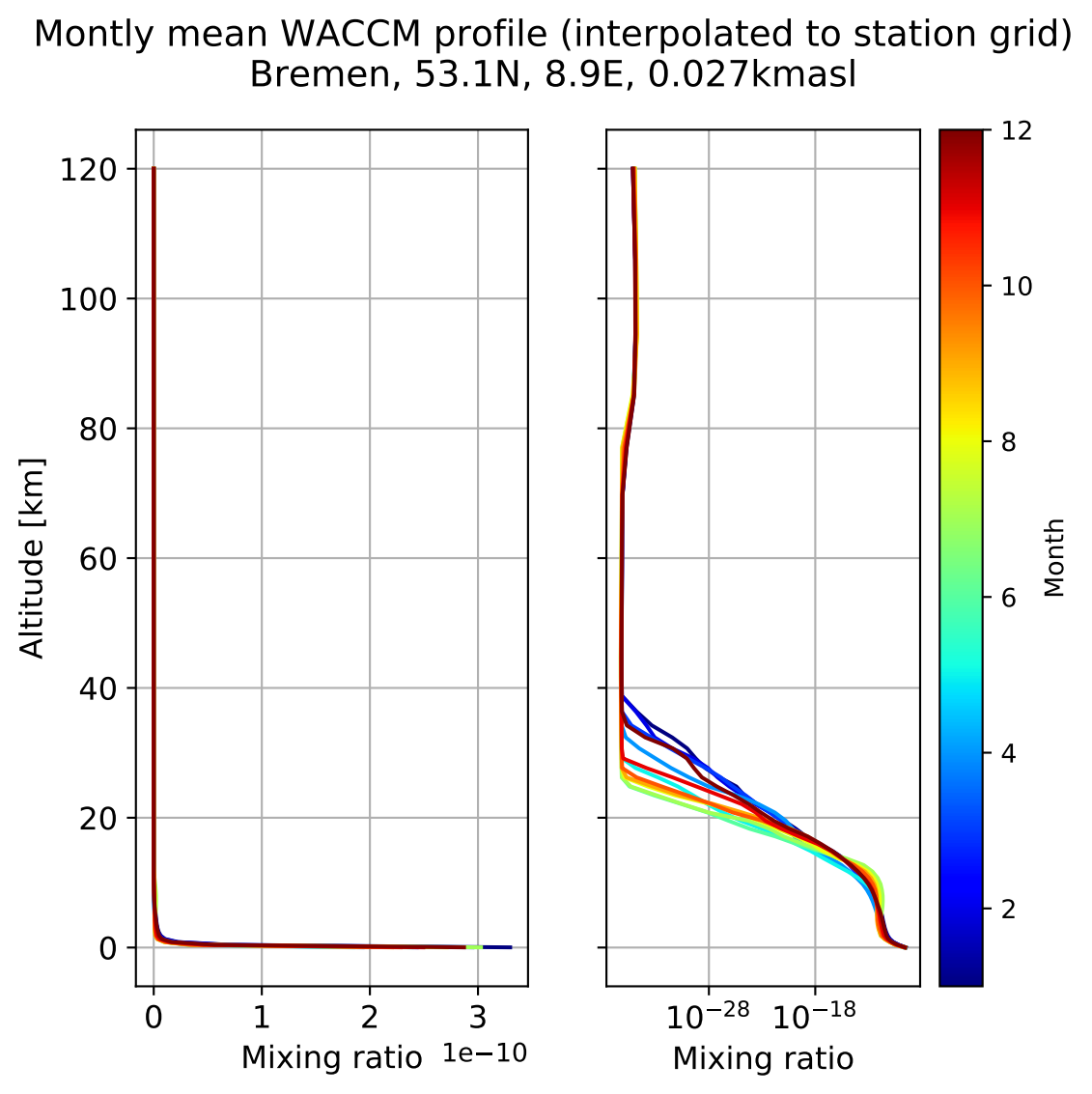
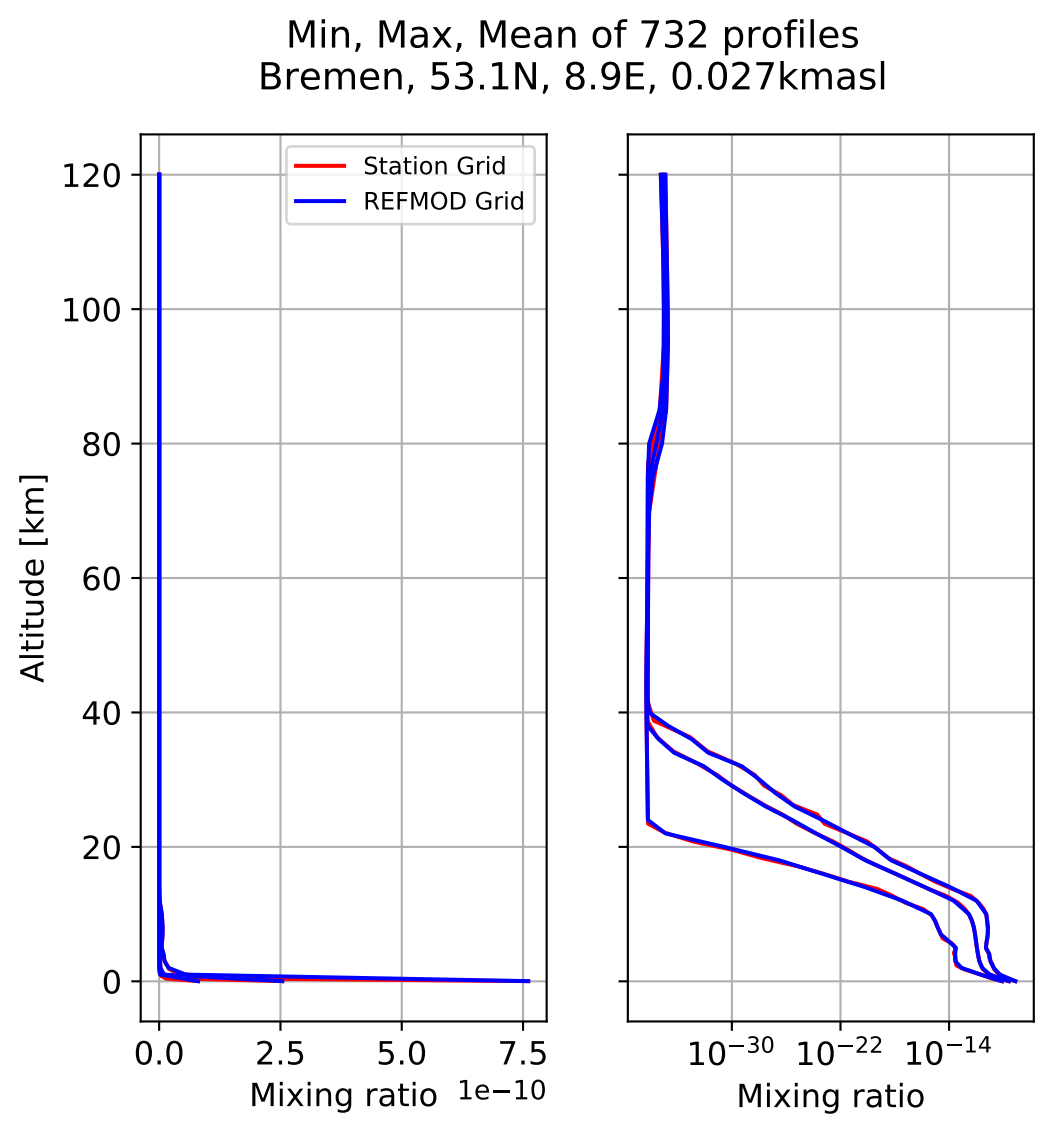
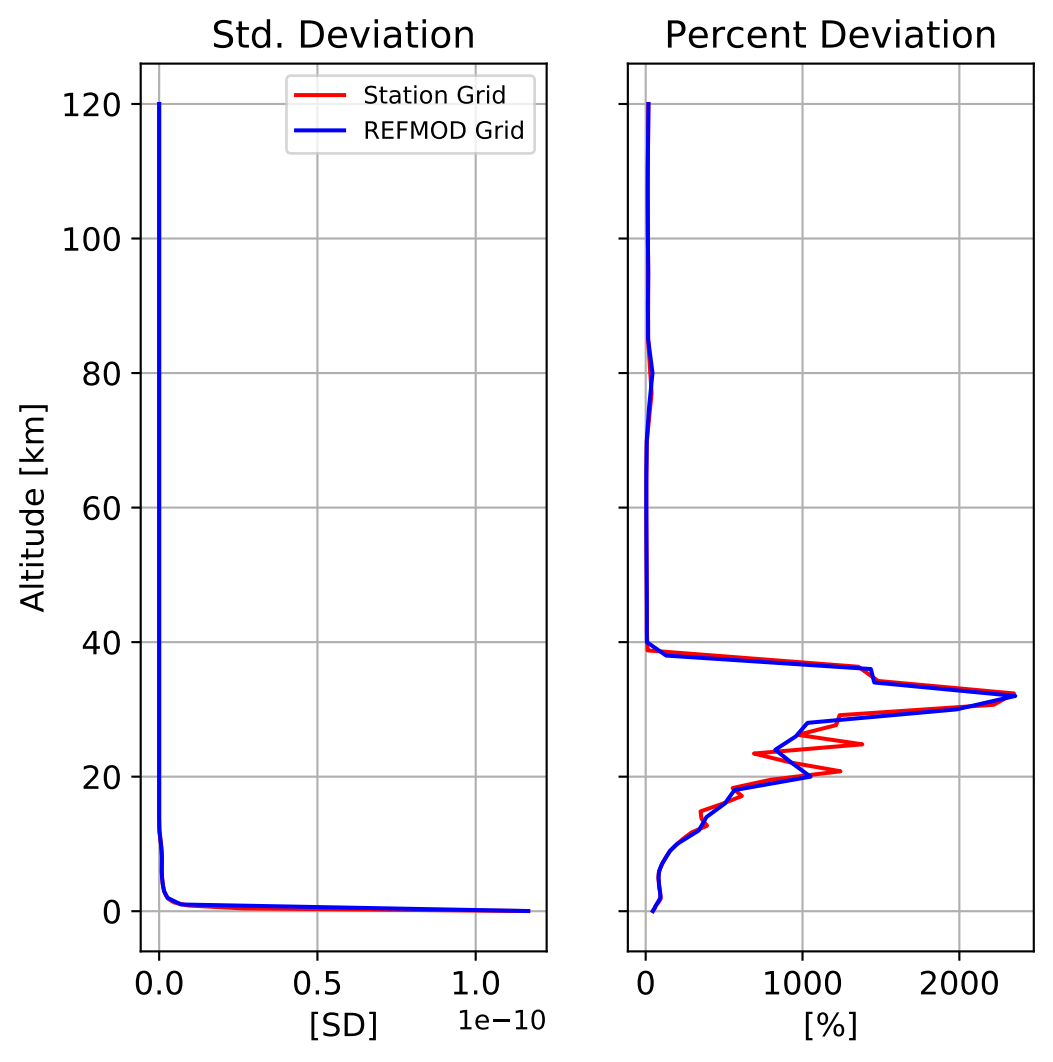
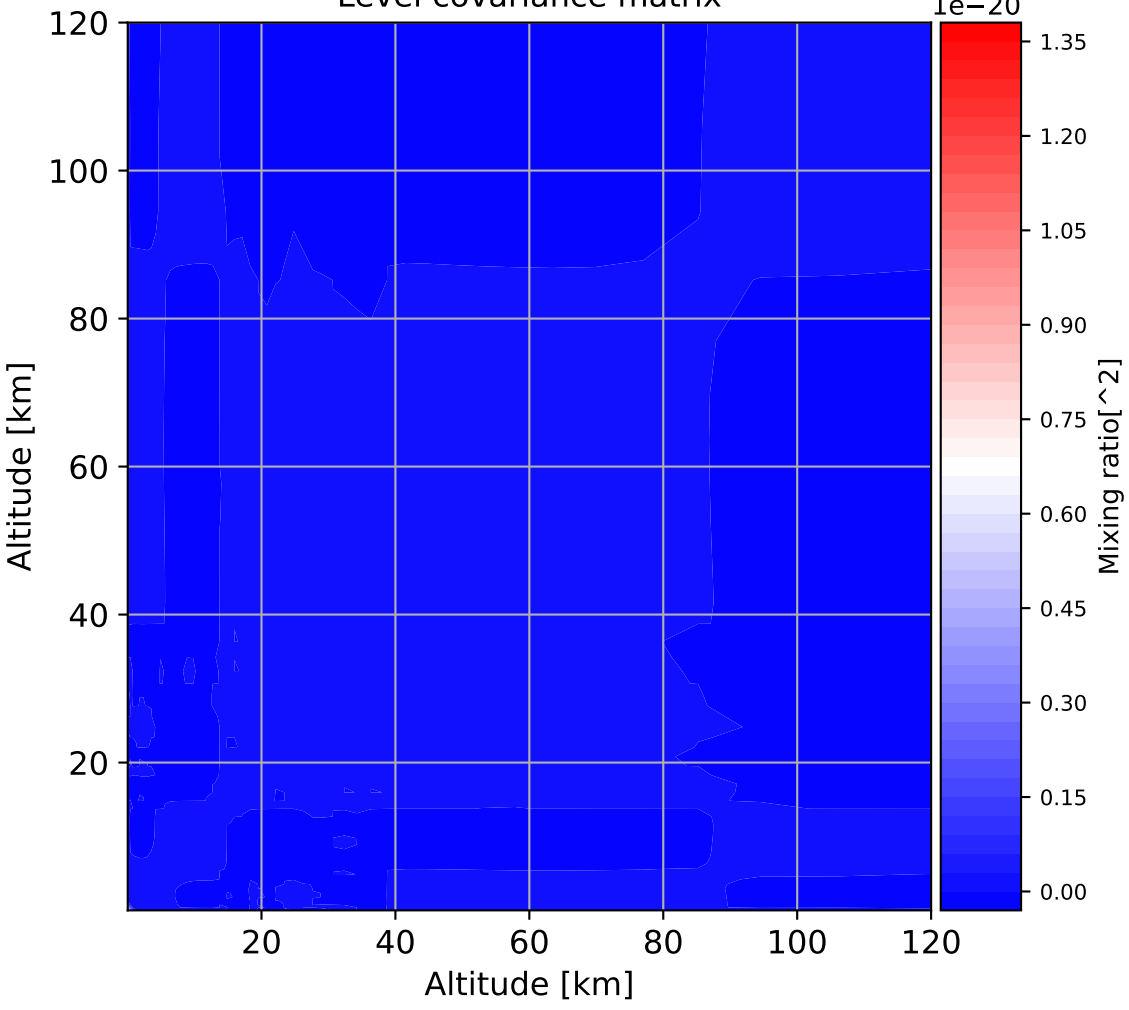

Time Series of vertical profiles (site altitude - 120 km)
Altitude [km]
120
100
80
60
40
20
1980
1990
2000
2010
2020
2030
2040
1e−10
7.2
6.3
5.4
4.5
3.6
2.7
1.8
0.9
0.0
Mixing ratio


Time Series of vertical profiles (site altitude - 40 km)
Altitude [km]
40
35
30
25
20
15
10
5
1980
1990
2000
2010
2020
2030
2040
1e−10
7.2
6.3
5.4
4.5
3.6
2.7
1.8
0.9
0.0
Mixing ratio


Montly mean WACCM profile (interpolated to station grid)
Bremen, 53.1N, 8.9E, 0.027kmasl
Altitude [km]
120
100
80
60
40
20
0
0
1
2
3
1e−10
Mixing ratio
10^{-28}
10^{-18}
Mixing ratio
Month
12
10
8
6
4
2


Min, Max, Mean of 732 profiles
Bremen, 53.1N, 8.9E, 0.027kmasl
Station Grid
REFMOD Grid
Altitude [km]
120
100
80
60
40
20
0
0.0
2.5
5.0
7.5
Mixing ratio
1e−10
10^{-30}
10^{-22}
10^{-14}
Mixing ratio


Std. Deviation
Percent Deviation
Station Grid
REFMOD Grid
Altitude [km]
120
100
80
60
40
20
0
0.0
0.5
1.0
1e−10
[SD]
0
1000
2000
[%]


Level covariance matrix
1e−20
1.35
1.20
1.05
0.90
0.75
0.60
0.45
0.30
0.15
0.00
Mixing ratio[^2]
120
100
80
60
40
20
Altitude [km]
20
40
60
80
100
120
Altitude [km]