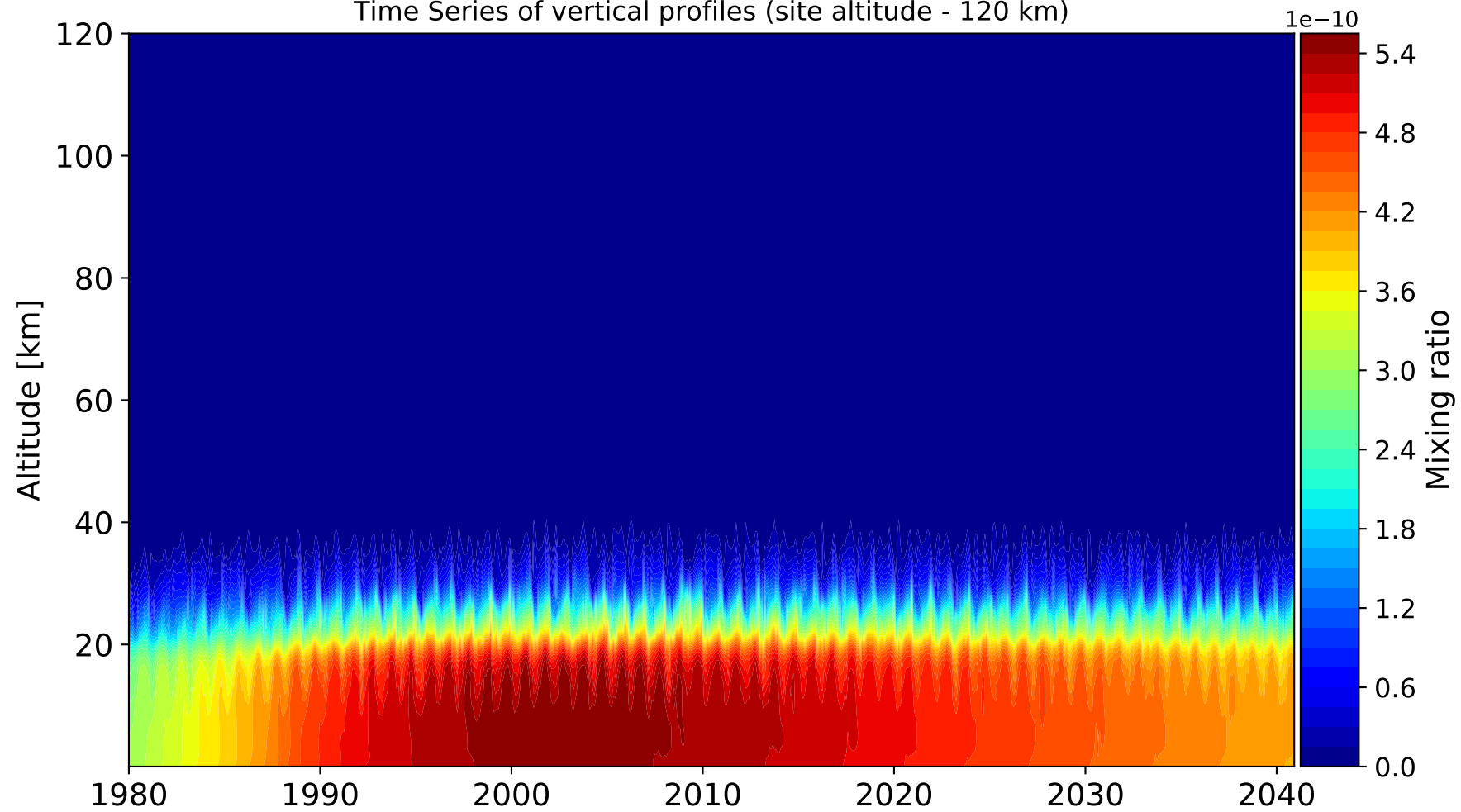
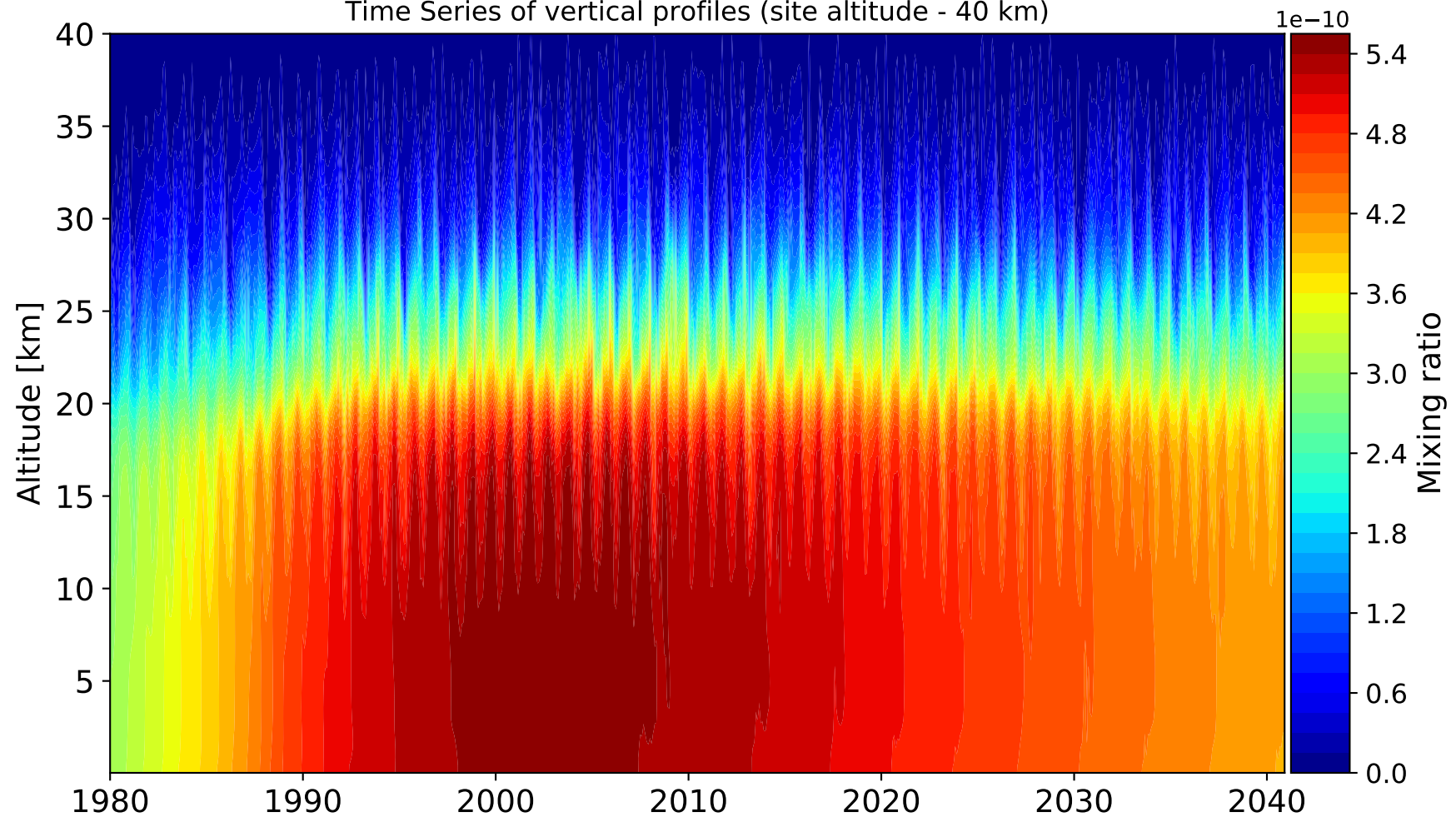


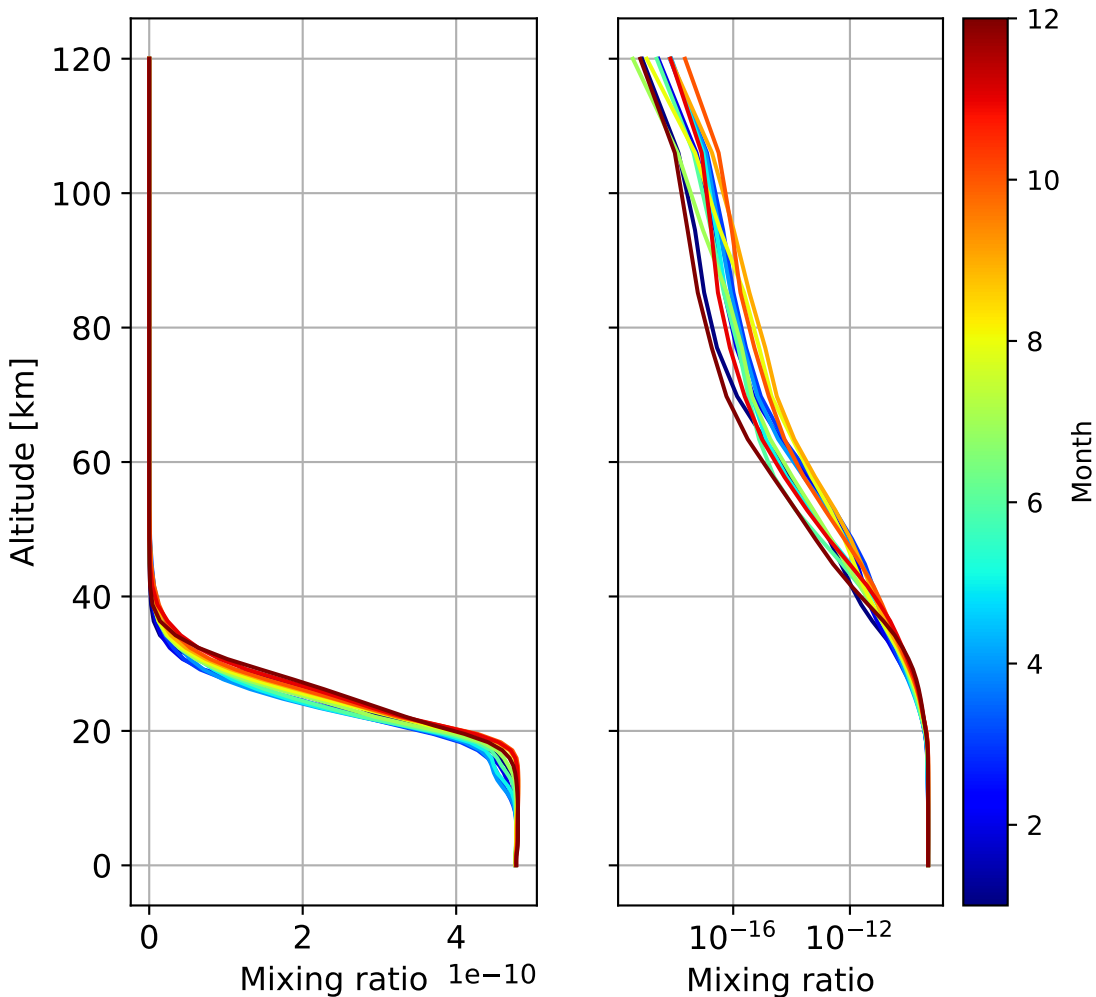
Time Series of vertical profiles (site altitude - 120 km)



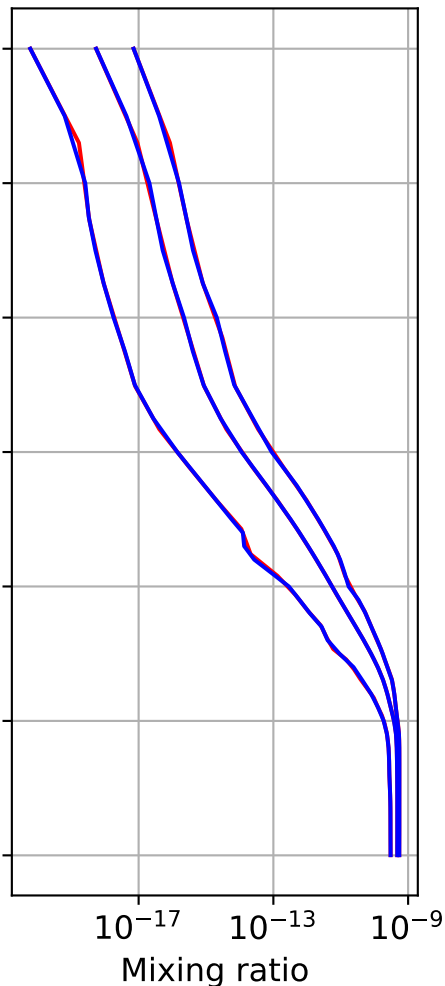
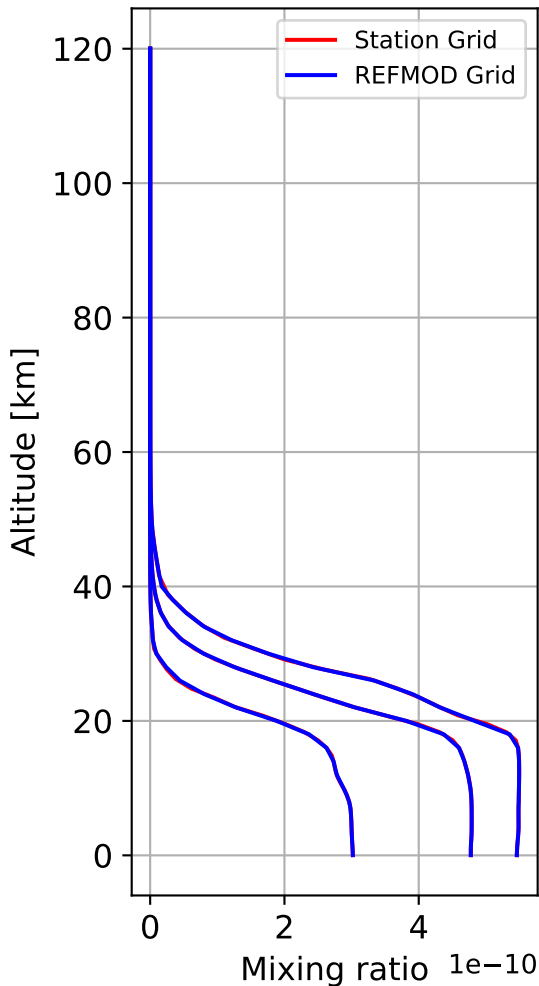
Time Series of vertical profiles (site altitude - 40 km)



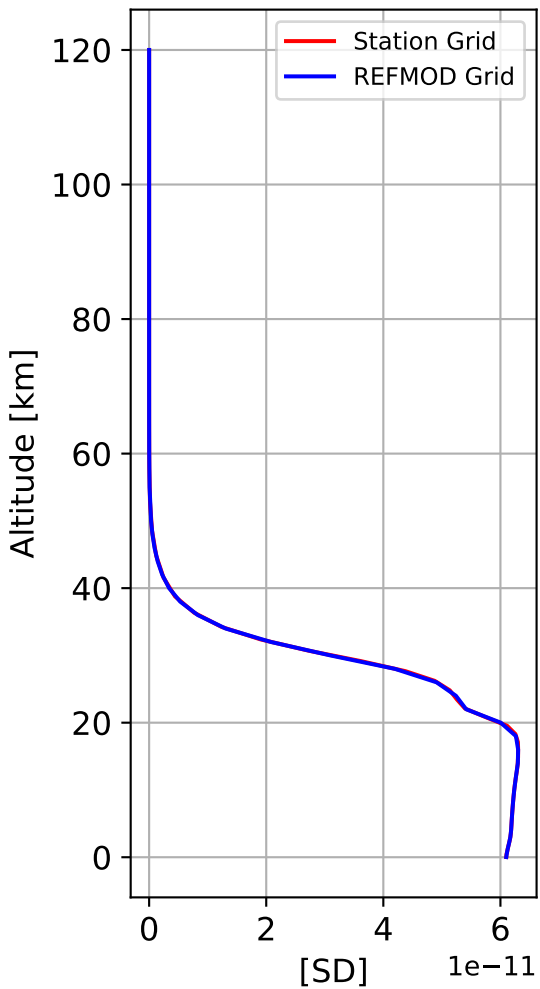
# Monthly mean WACCM profile (interpolated to station grid) Tsukuba, 36.05N, 140.12E, 0.031km/sl



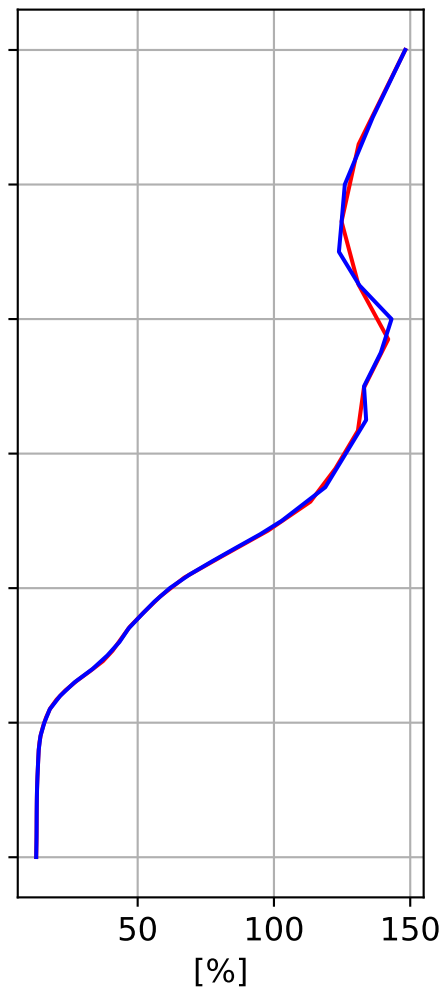
Min, Max, Mean of 732 profiles  
Tsukuba, 36.05N, 140.12E, 0.031kmasl



Std. Deviation



Percent Deviation



Level covariance matrix

 $1e-21$ 

Altitude [km]

120

100

80

60

40

20

20

Altitude [km]

40

60

80

100

120

3.84

3.36

2.88

2.40

1.92

1.44

0.96

0.48

0.00

Mixing ratio[ $\sim 2$ ]