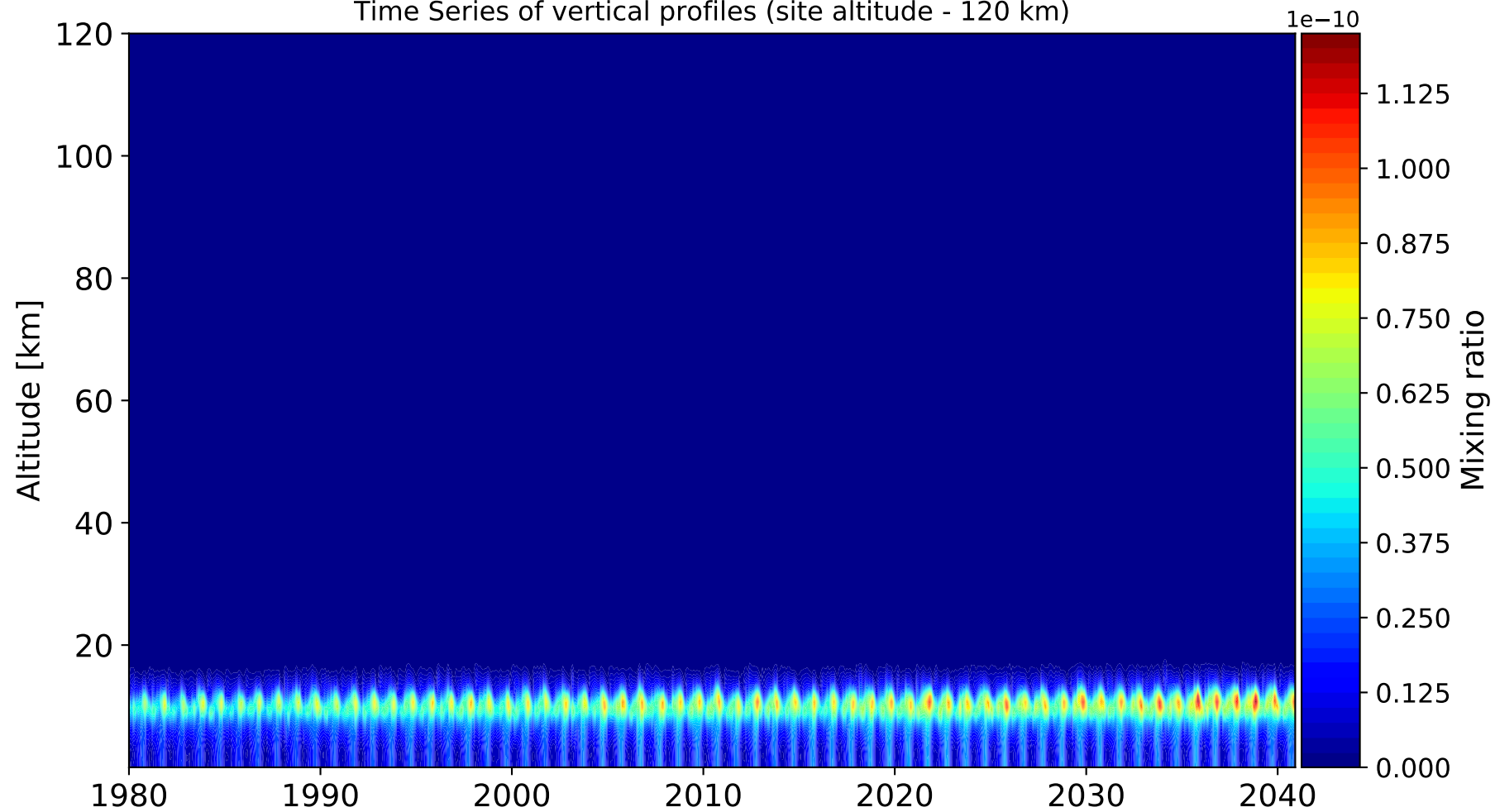
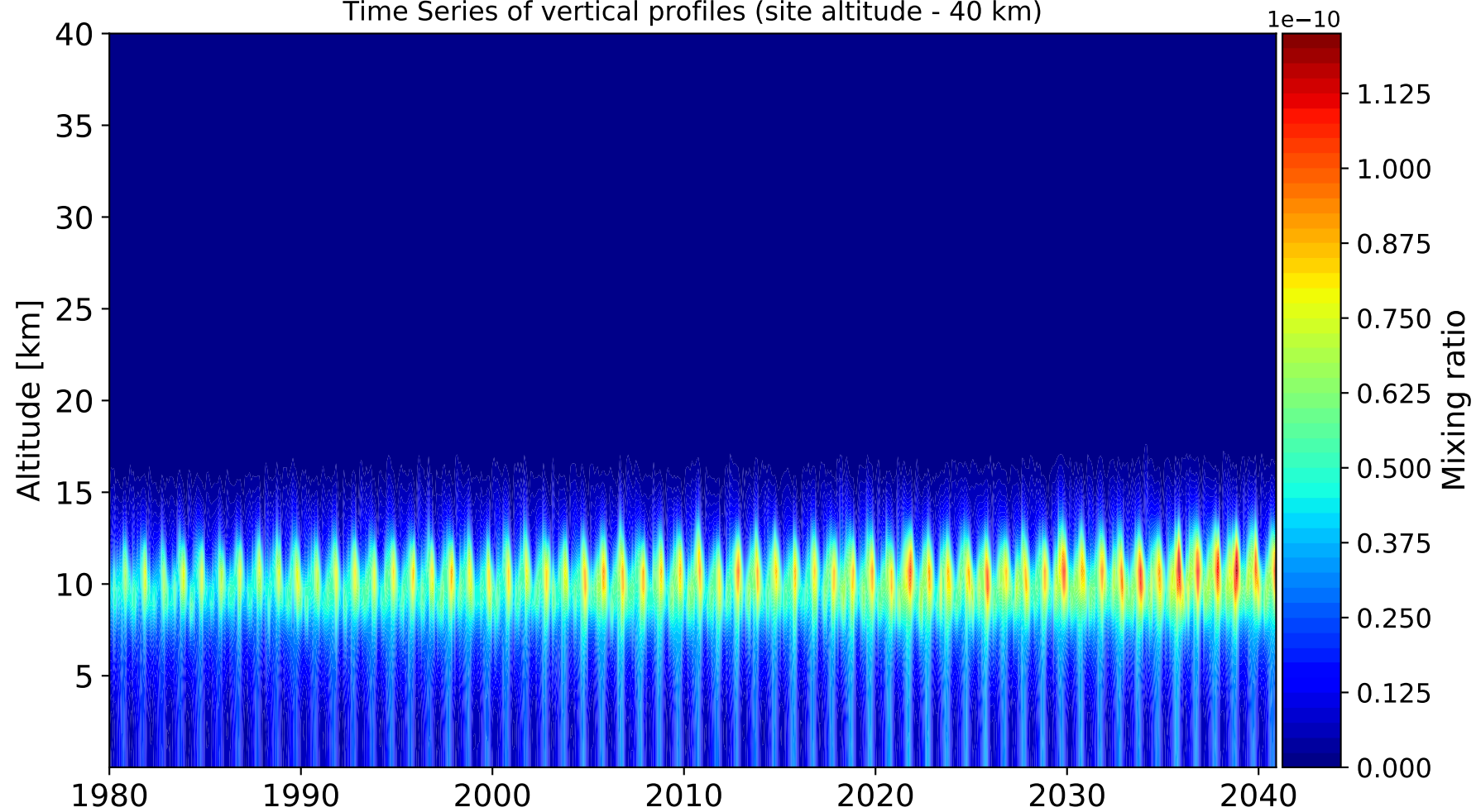


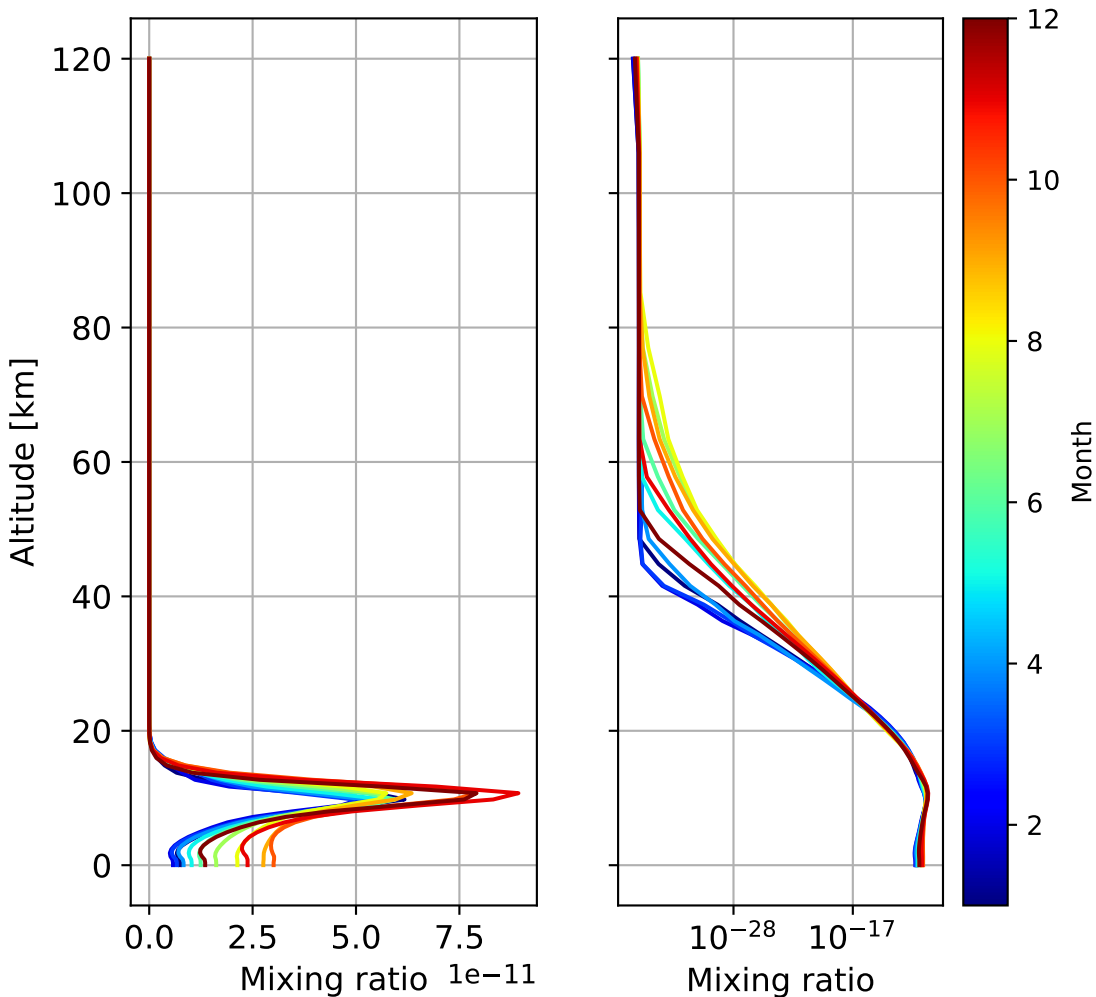
Time Series of vertical profiles (site altitude - 120 km)



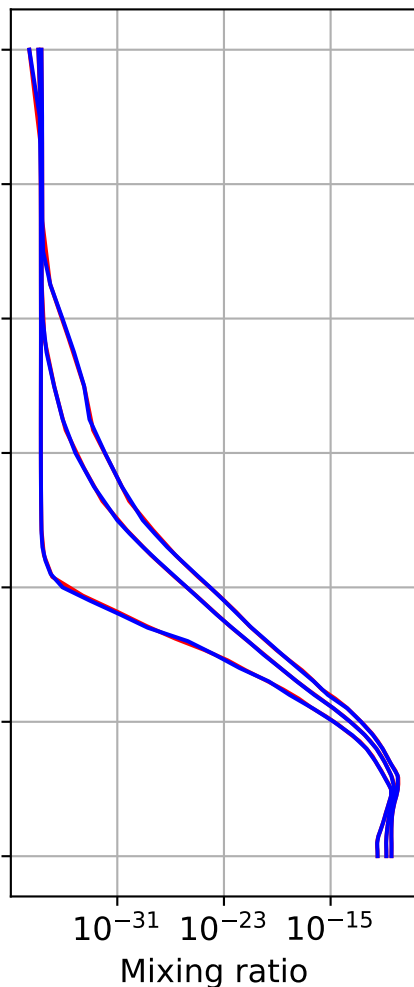
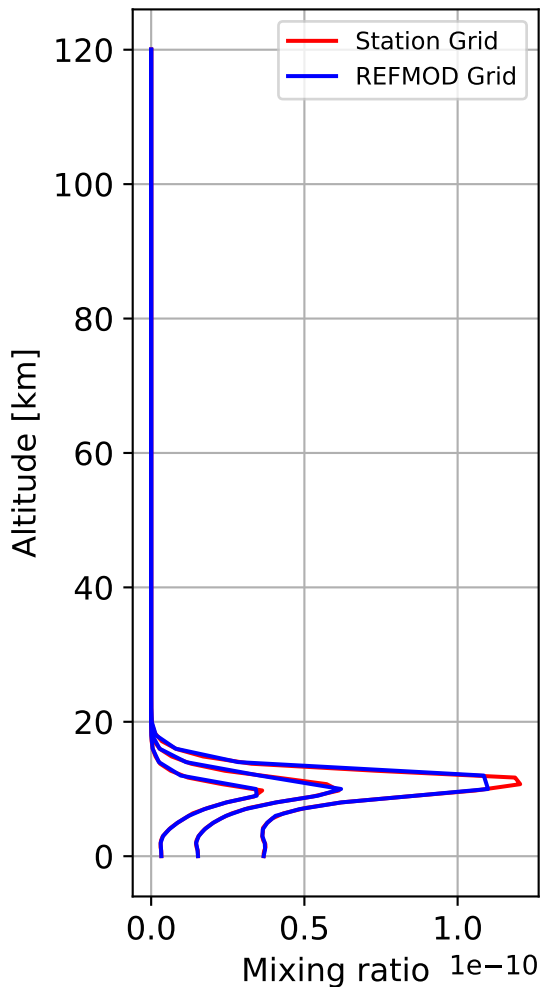
Time Series of vertical profiles (site altitude - 40 km)



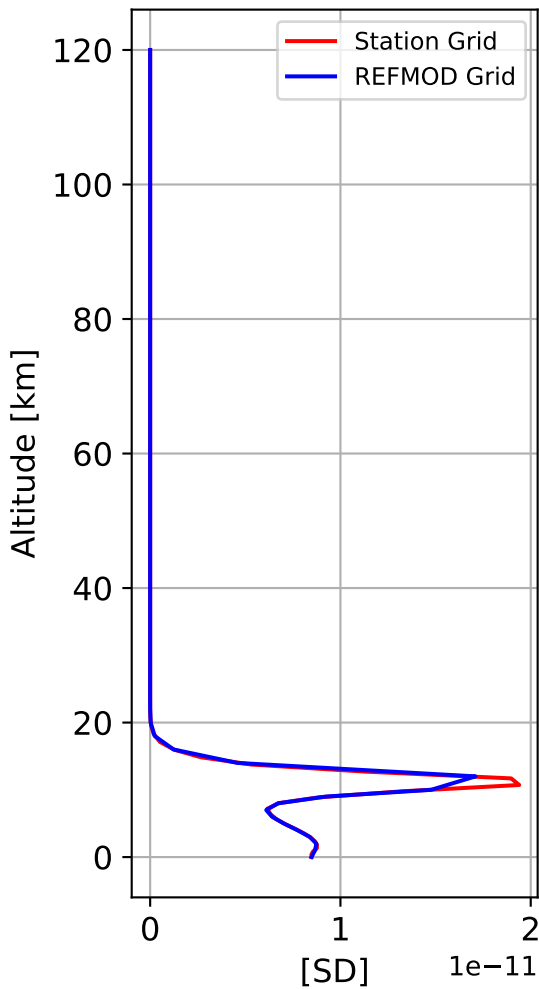
Monthly mean WACCM profile (interpolated to station grid)  
Syowa\_Station, -69.0N, 39.59E, 0.01kmasl



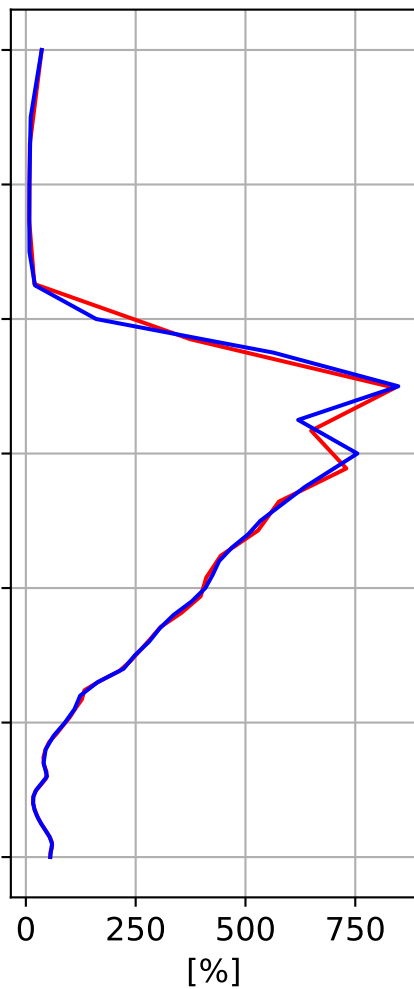
Min, Max, Mean of 732 profiles  
Syowa\_Station, -69.0N, 39.59E, 0.01kmasl



Std. Deviation



Percent Deviation



# Level covariance matrix

1e-22

Altitude [km]

120

100

80

60

40

20

Altitude [km]

20

40

60

80

100

120

Mixing ratio[ $\sim 2$ ]

3.6

3.2

2.8

2.4

2.0

1.6

1.2

0.8

0.4

0.0

