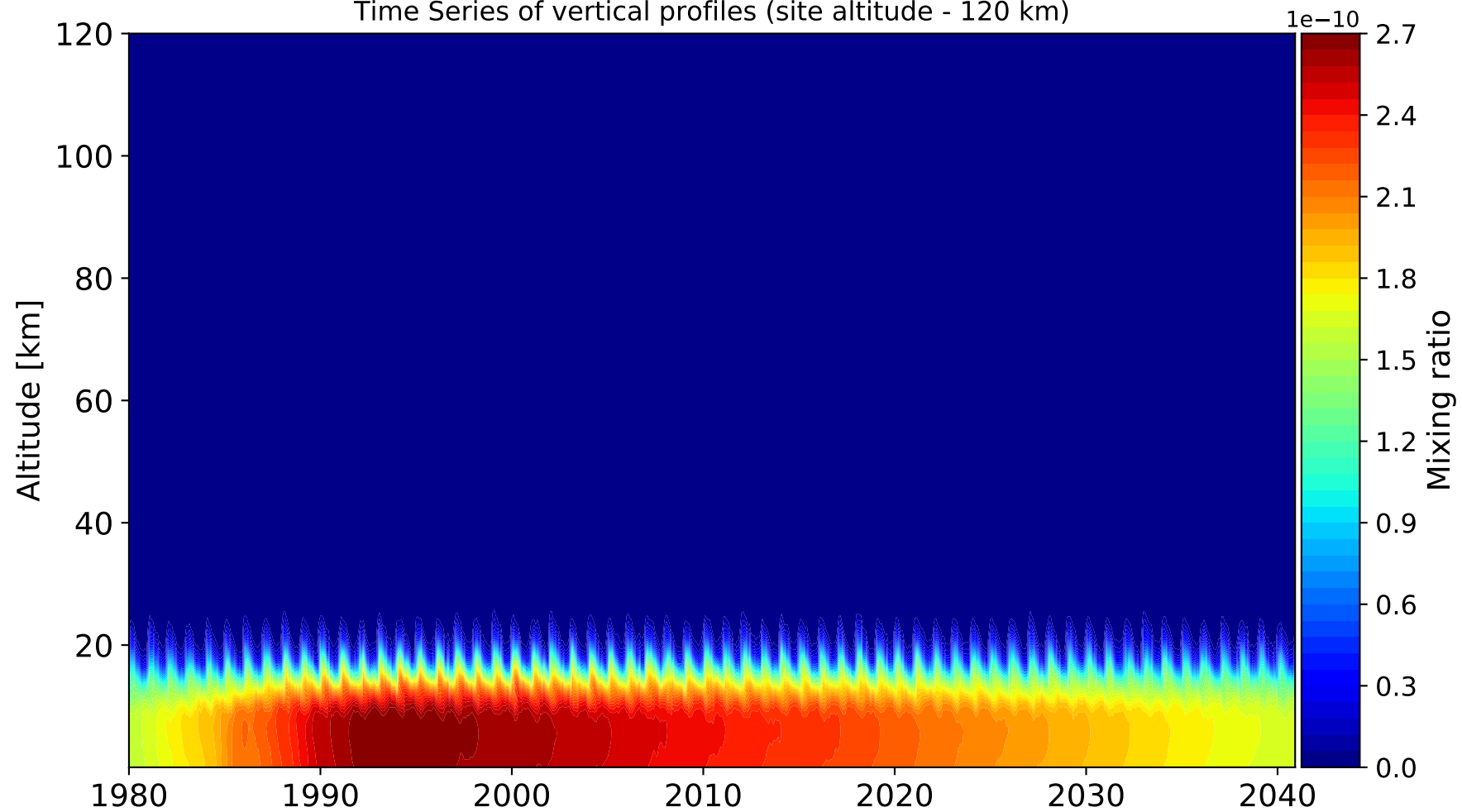
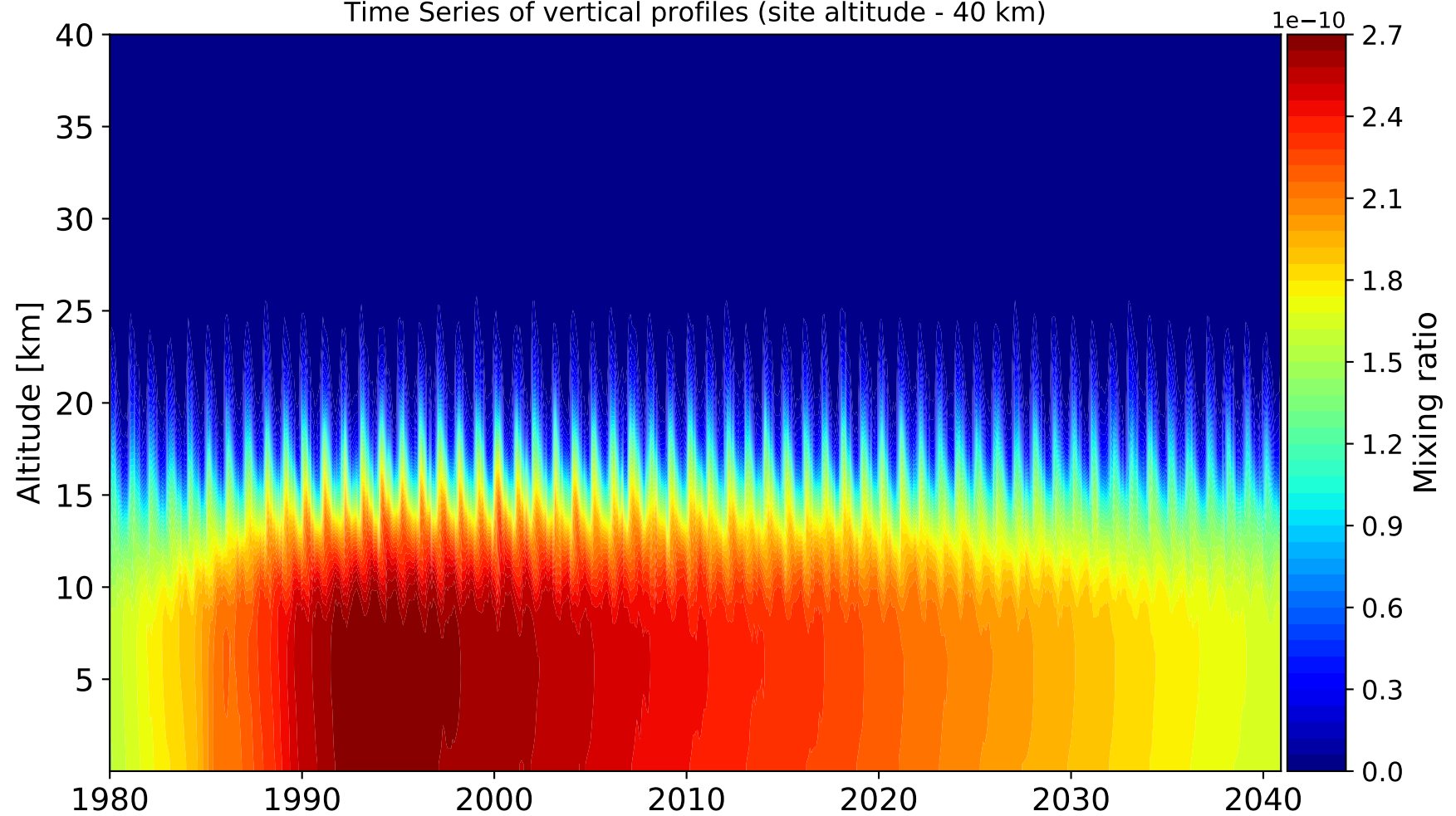


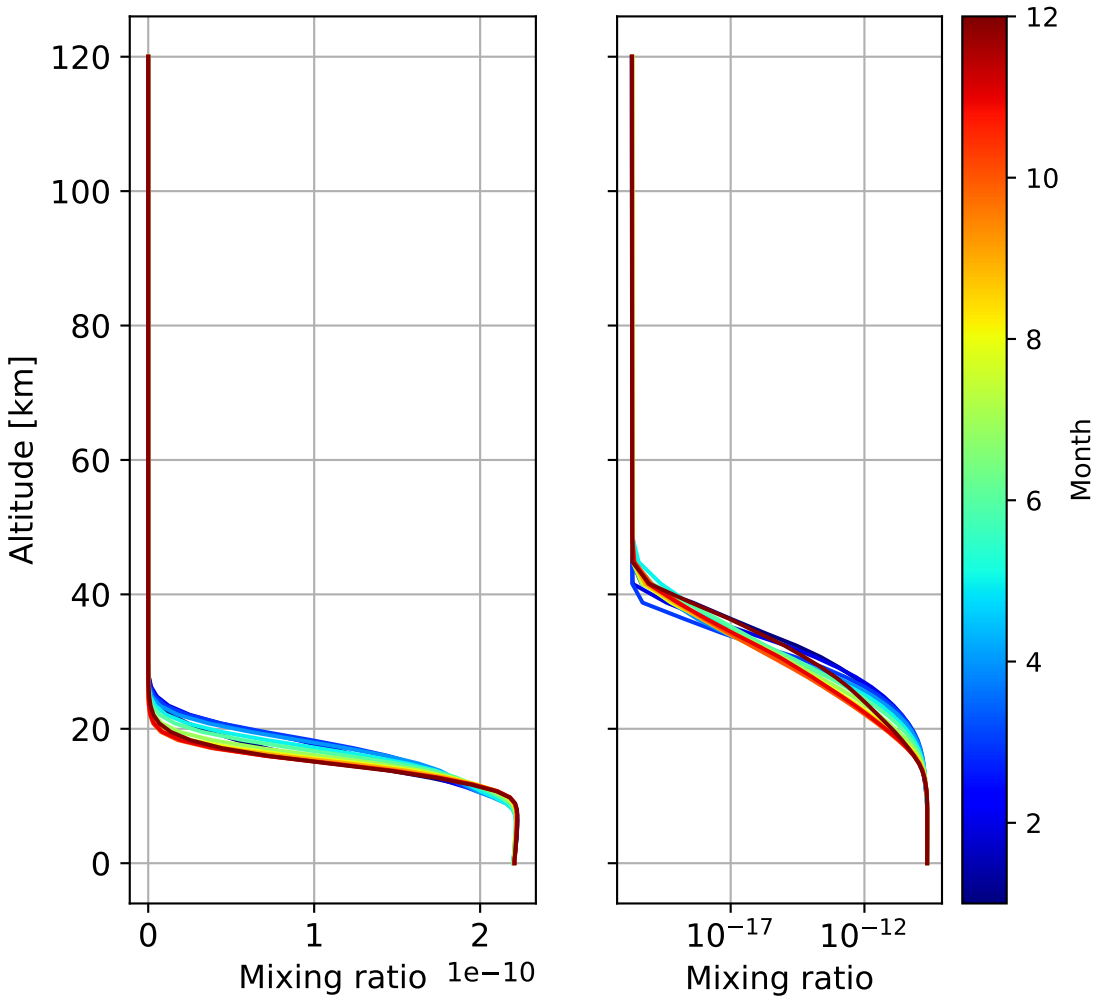
Time Series of vertical profiles (site altitude - 120 km)



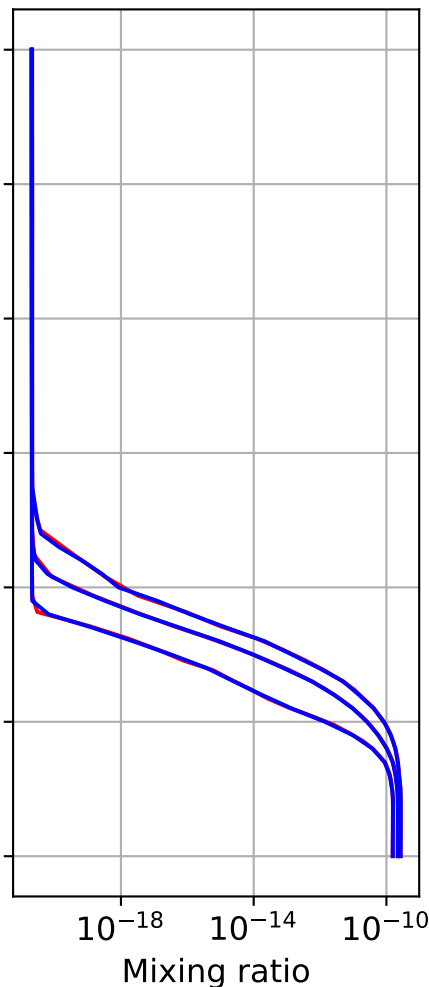
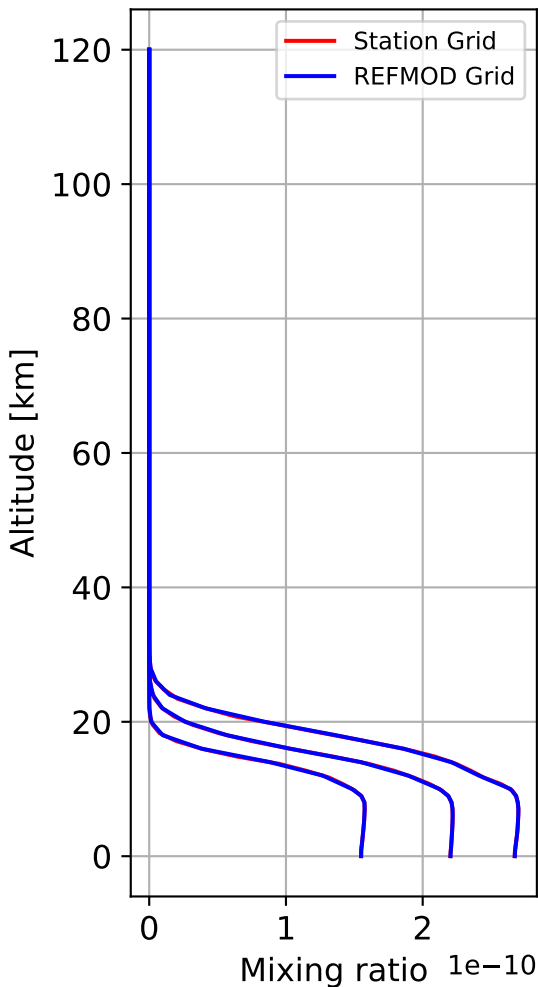
Time Series of vertical profiles (site altitude - 40 km)



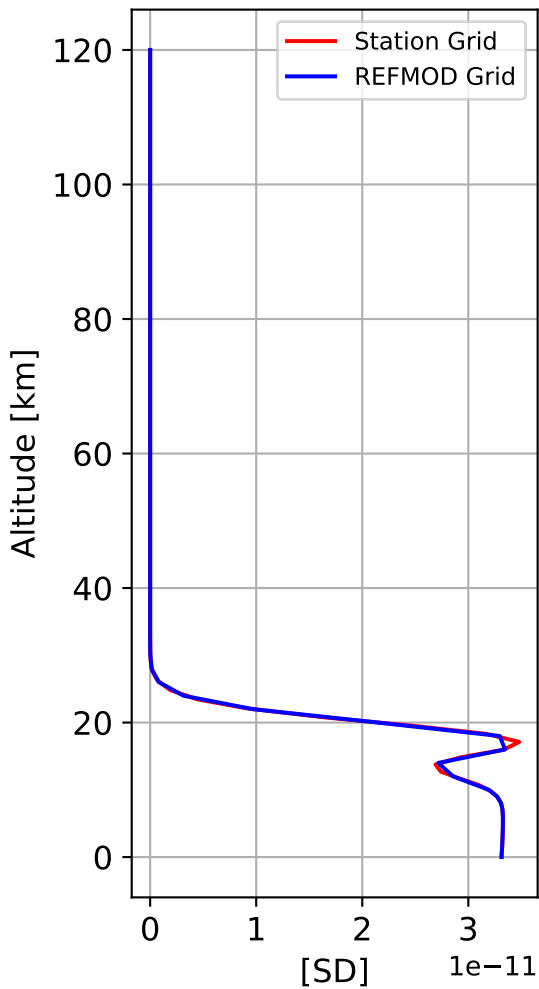
# Monthly mean WACCM profile (interpolated to station grid) Syowa\_Station, -69.0N, 39.59E, 0.01kmasl



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



Std. Deviation



Percent Deviation

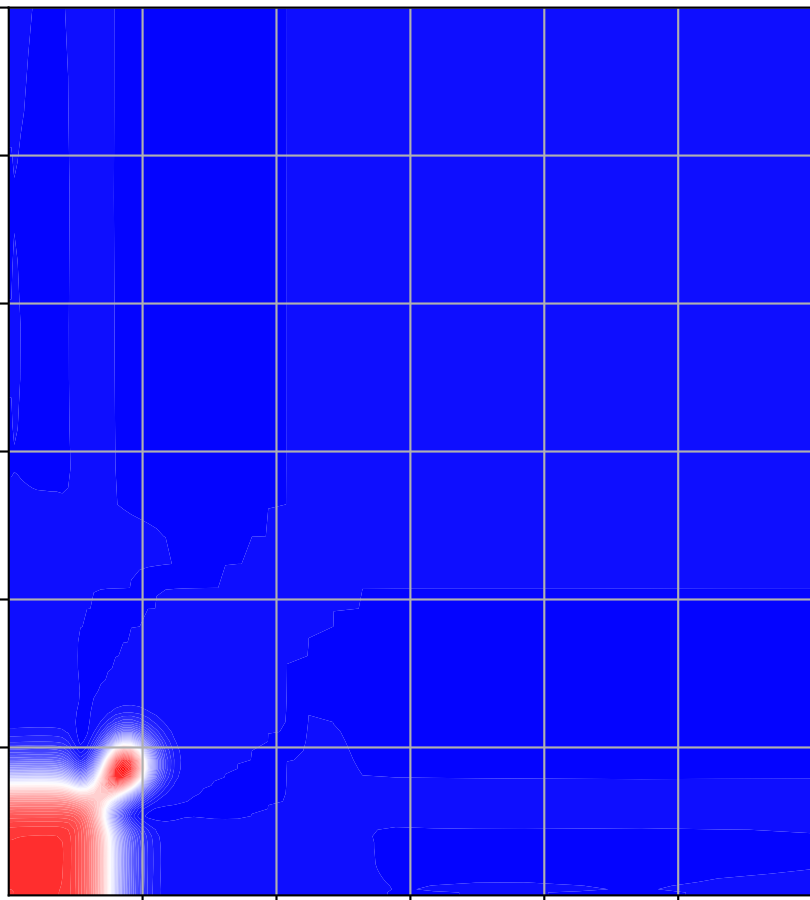


# Level covariance matrix

1e-21

Altitude [km]

120  
100  
80  
60  
40  
20



1.20  
1.05  
0.90  
0.75  
0.60  
0.45  
0.30  
0.15  
0.00

Mixing ratio[ $\sim 2$ ]

Altitude [km]