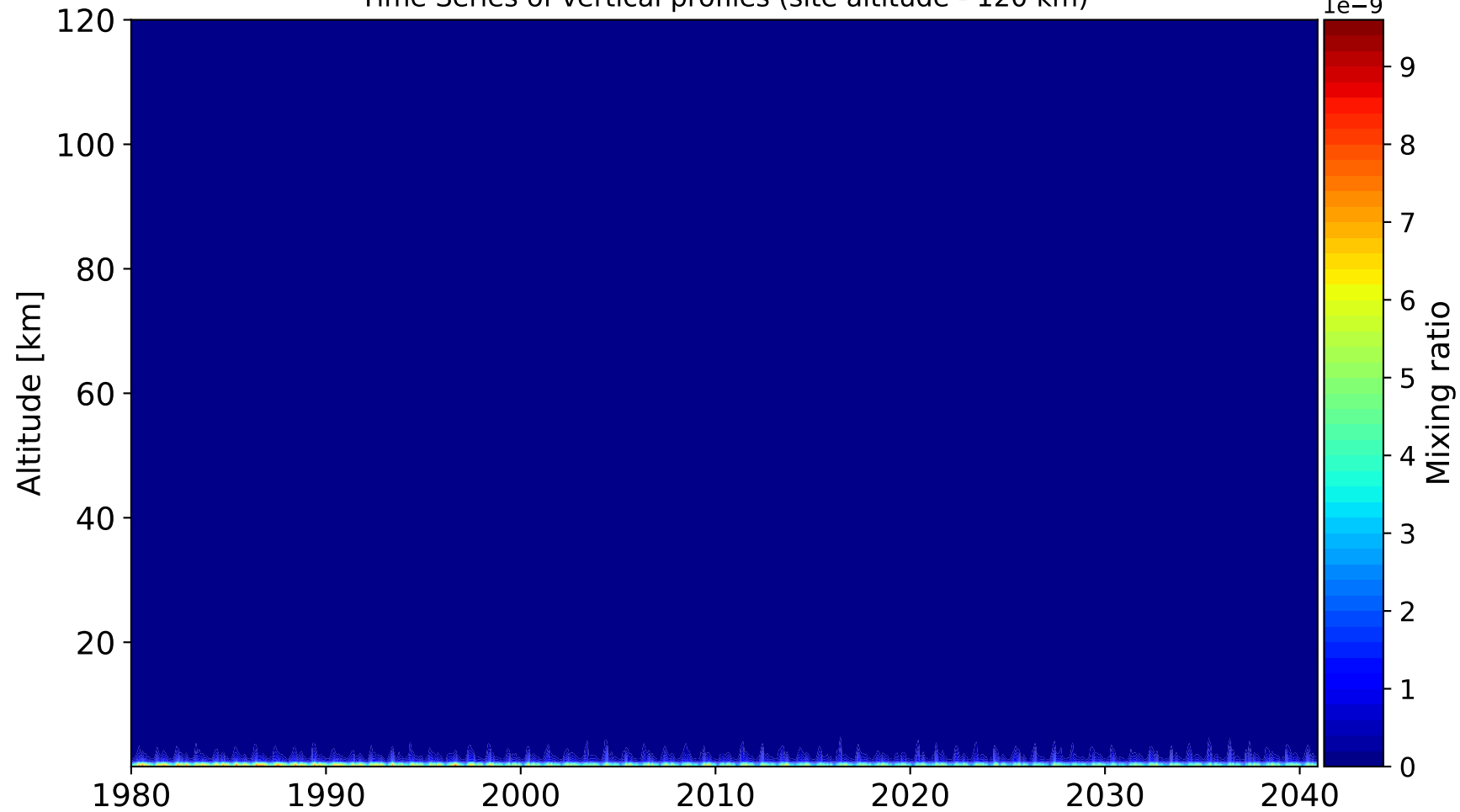
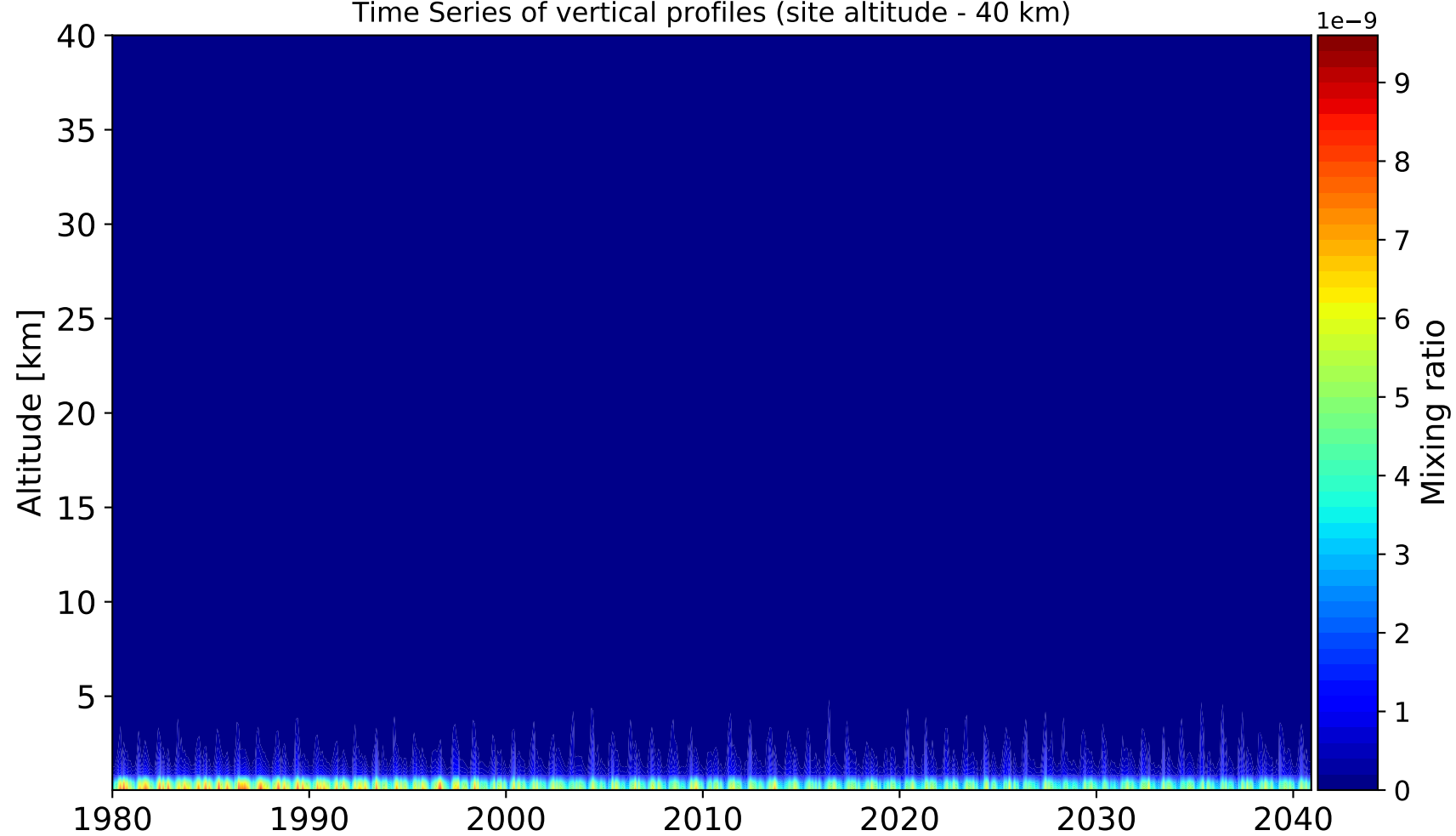


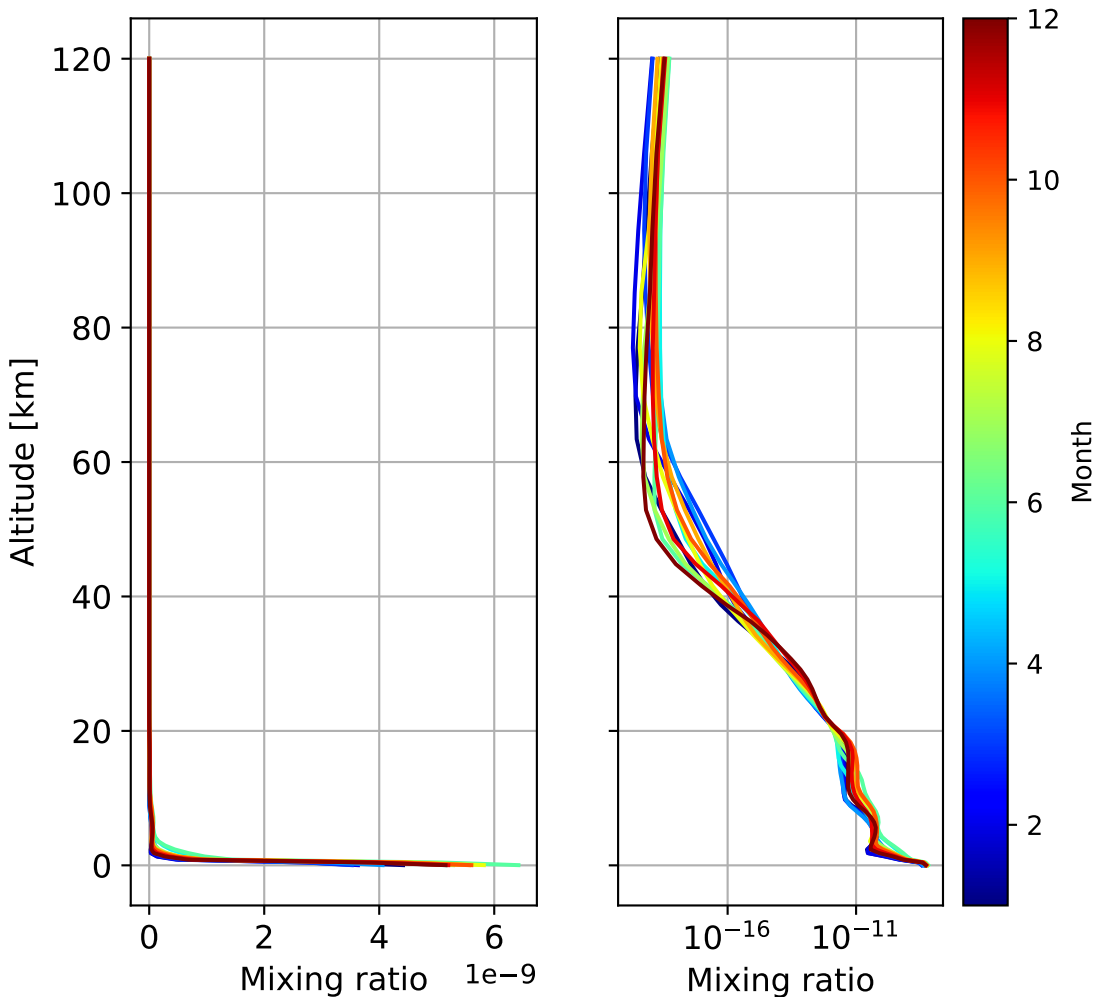
Time Series of vertical profiles (site altitude - 120 km)



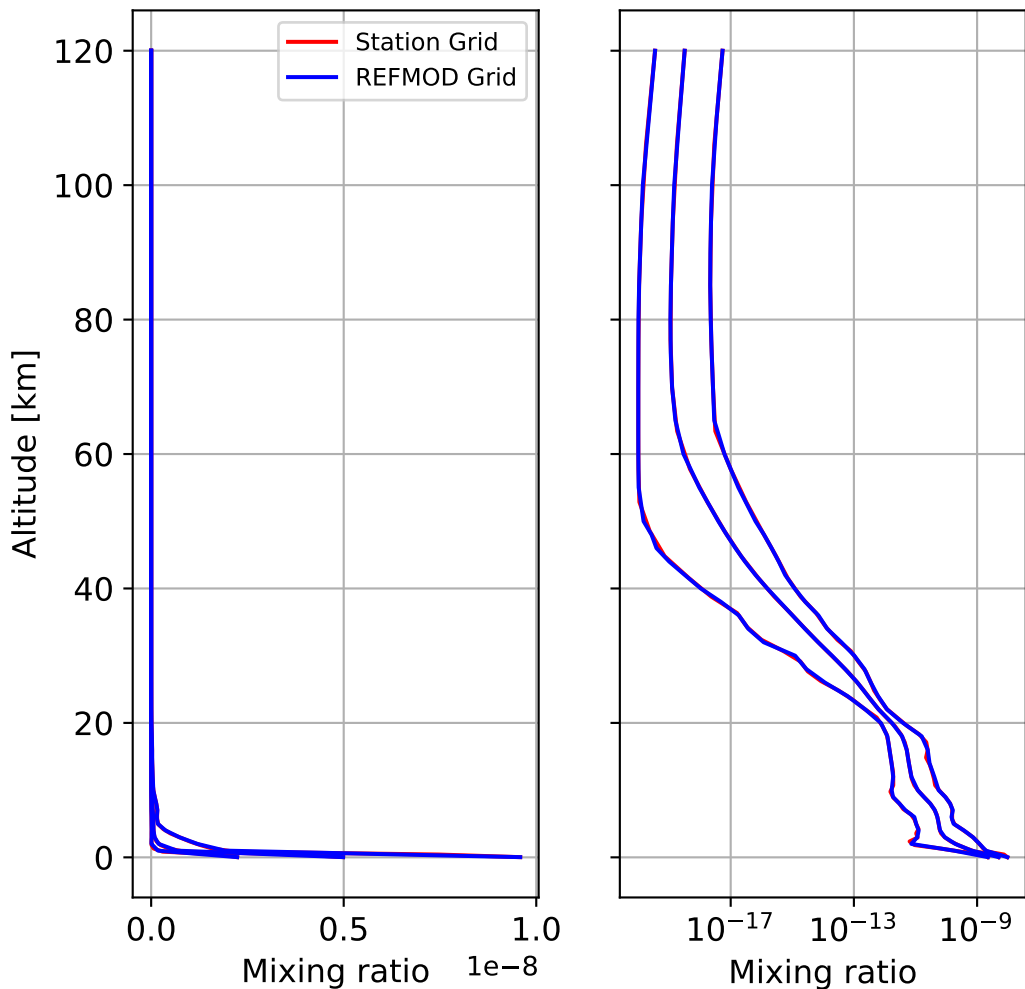
Time Series of vertical profiles (site altitude - 40 km)



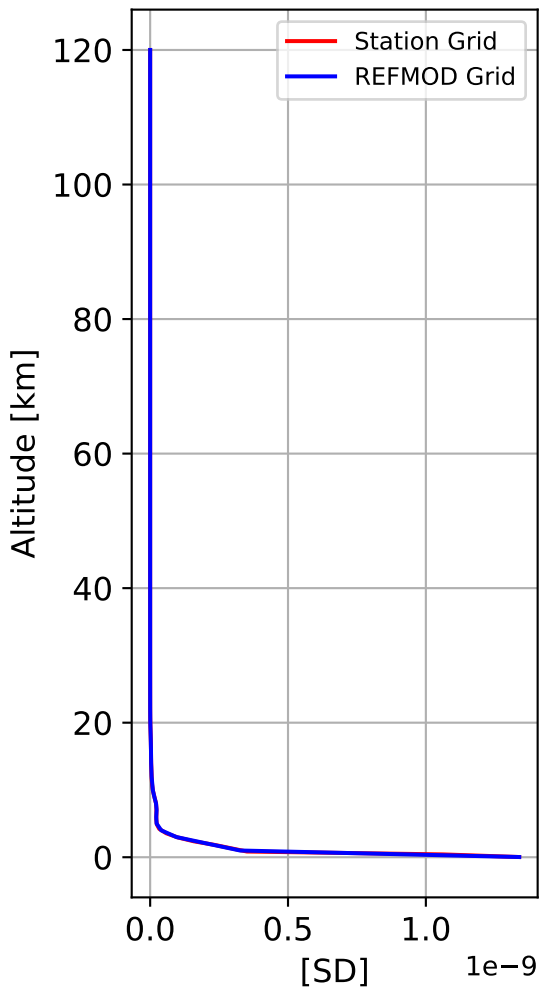
# Monthly mean WACCM profile (interpolated to station grid) Tsukuba, 36.05N, 140.12E, 0.031km/sl



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



### Std. Deviation



### Percent Deviation



Level covariance matrix

1e-18

Altitude [km]

120  
100  
80  
60  
40  
20

Altitude [km]

1.8  
1.6  
1.4  
1.2  
1.0  
0.8  
0.6  
0.4  
0.2  
0.0Mixing ratio[ $\wedge 2$ ]