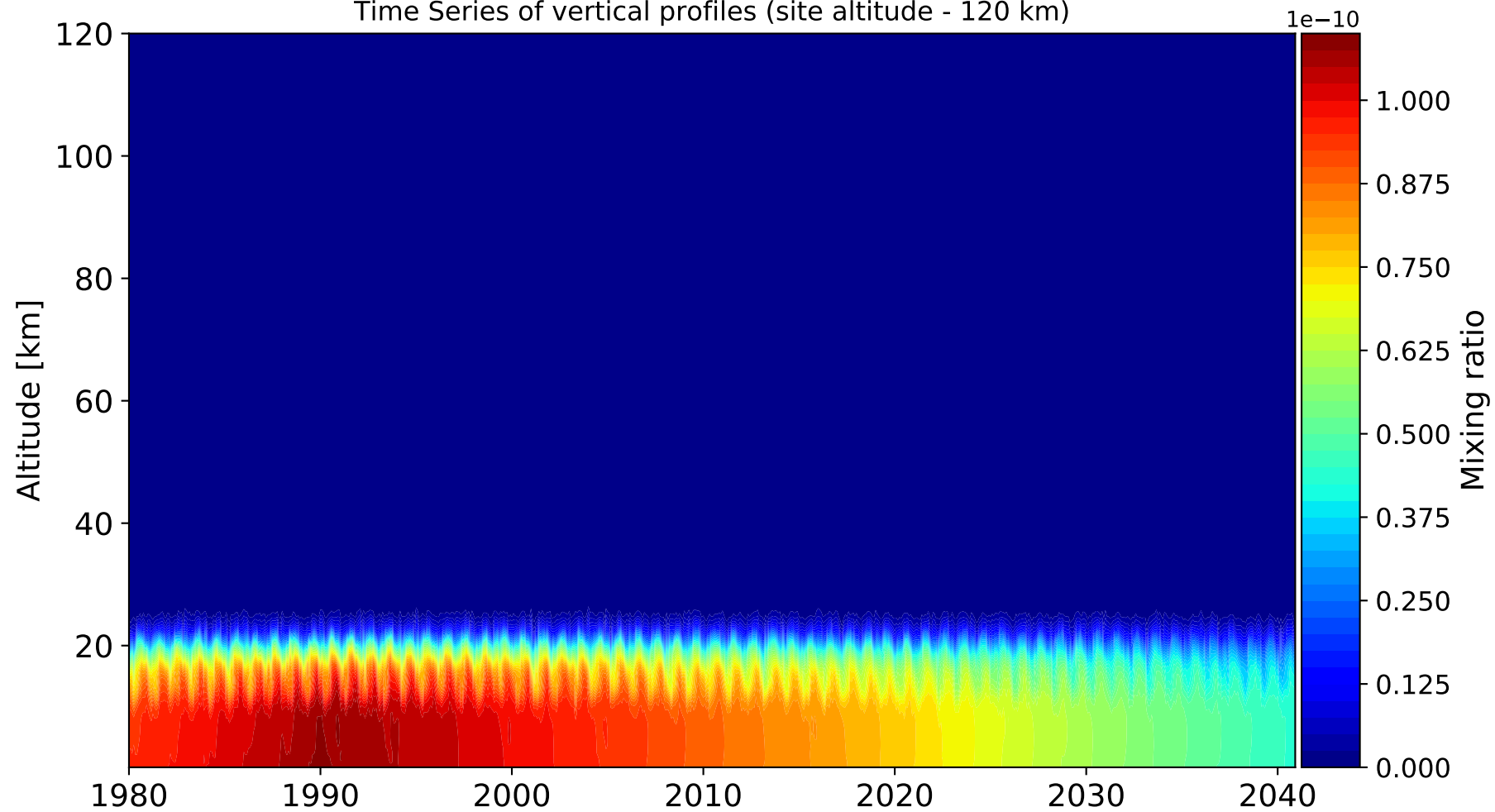
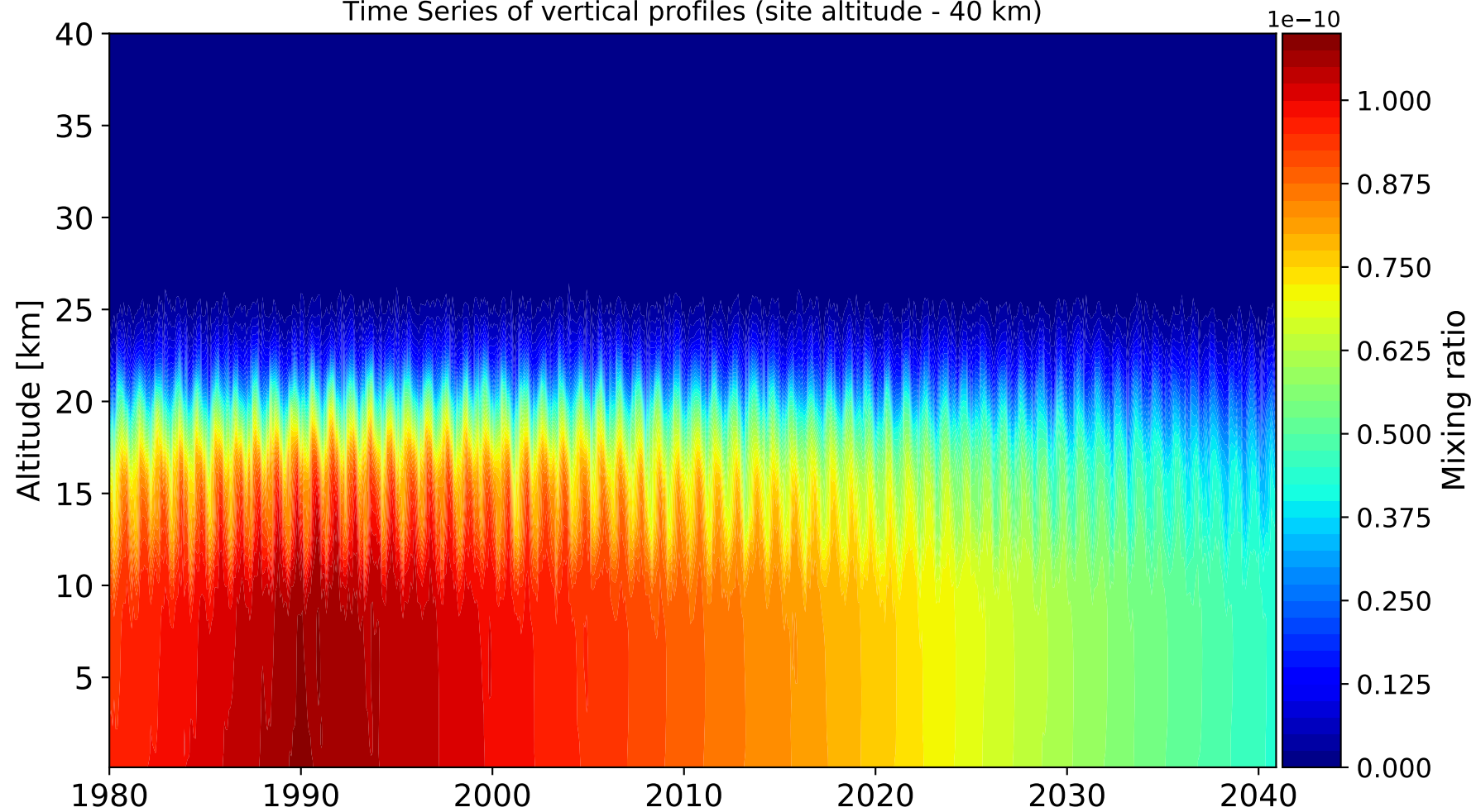


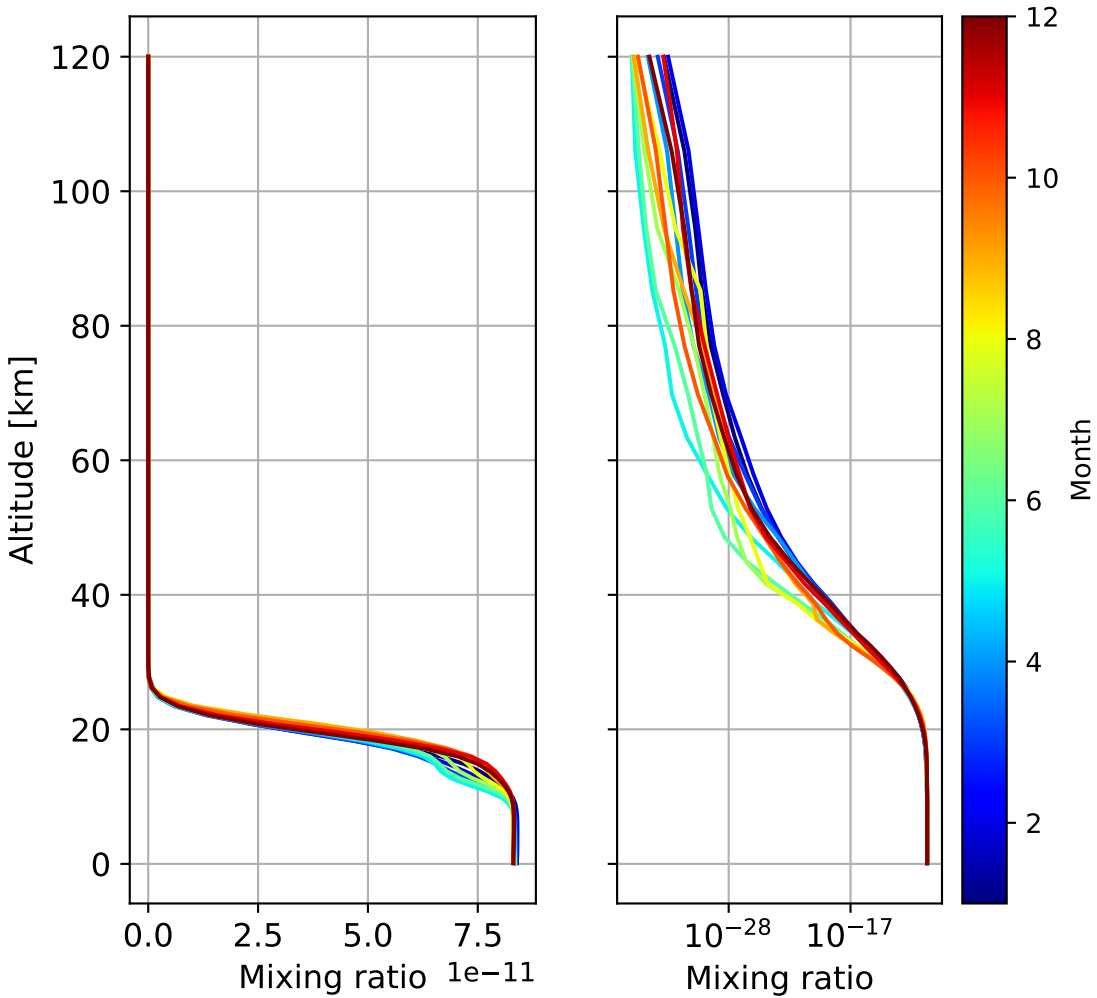
Time Series of vertical profiles (site altitude - 120 km)



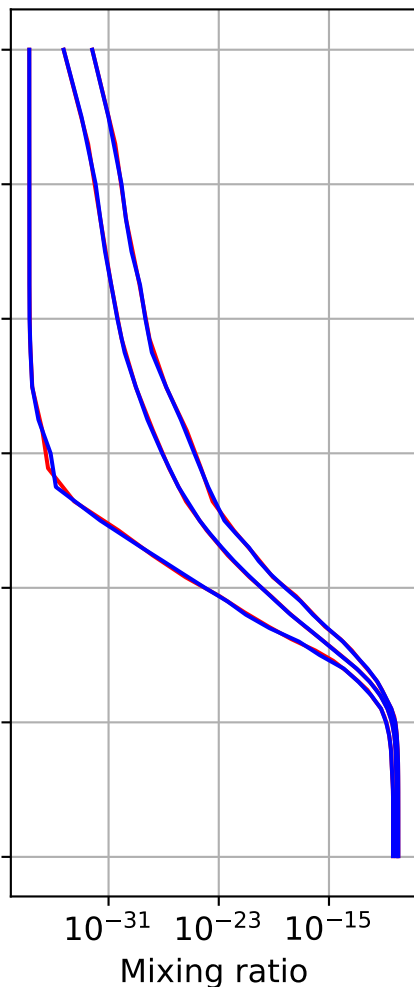
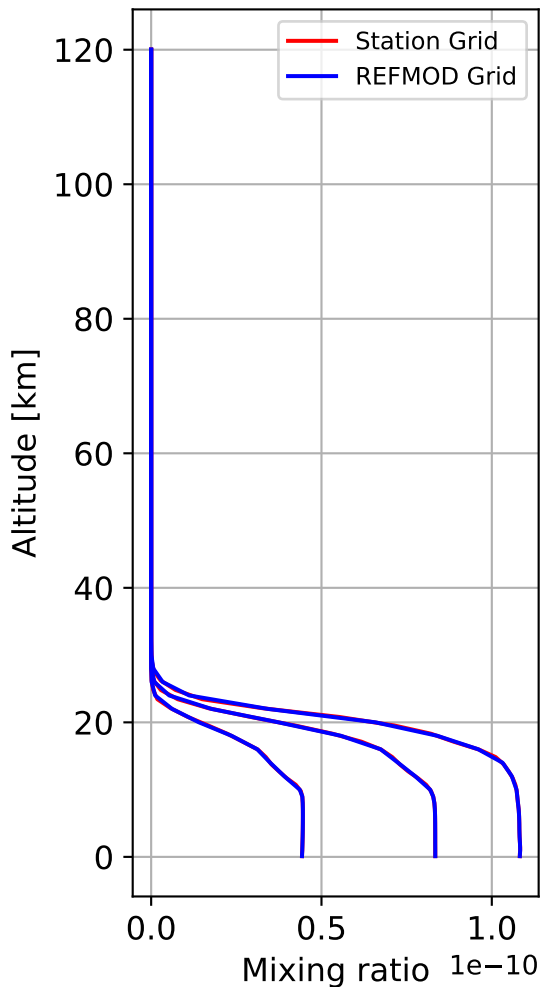
Time Series of vertical profiles (site altitude - 40 km)



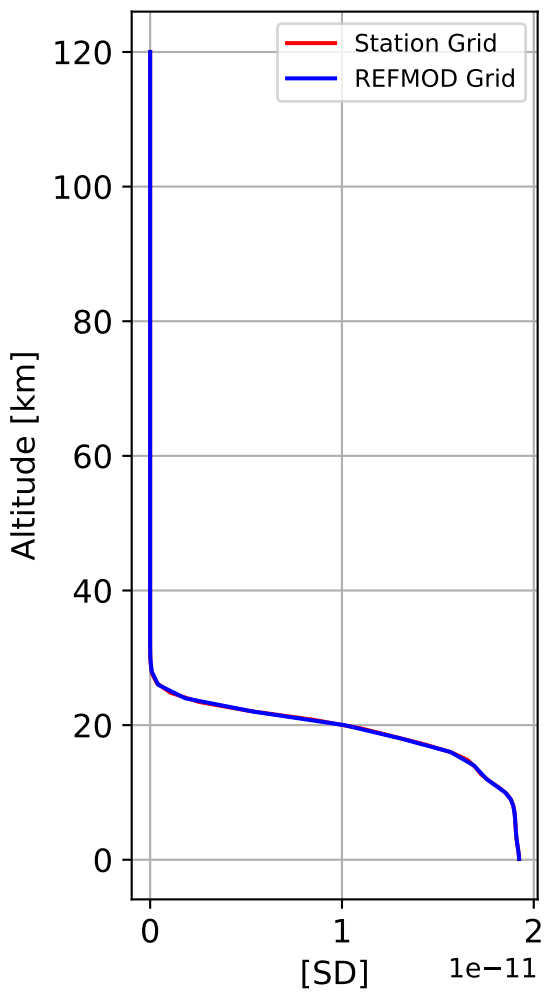
# Monthly mean WACCM profile (interpolated to station grid) Karlsruhe, 49.09N, 8.43E, 0.11kmasl



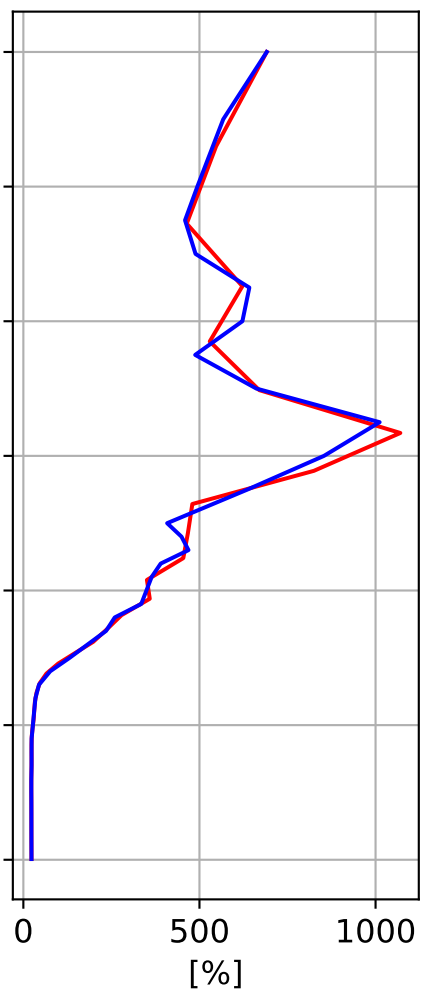
Min, Max, Mean of 732 profiles  
Karlsruhe, 49.09N, 8.43E, 0.11kmasl



### Std. Deviation



### Percent Deviation



# Level covariance matrix

1e-22

Altitude [km]

120  
100  
80  
60  
40  
20

Altitude [km]

Mixing ratio[ $\sim 2$ ]

3.6  
3.2  
2.8  
2.4  
2.0  
1.6  
1.2  
0.8  
0.4  
0.0

