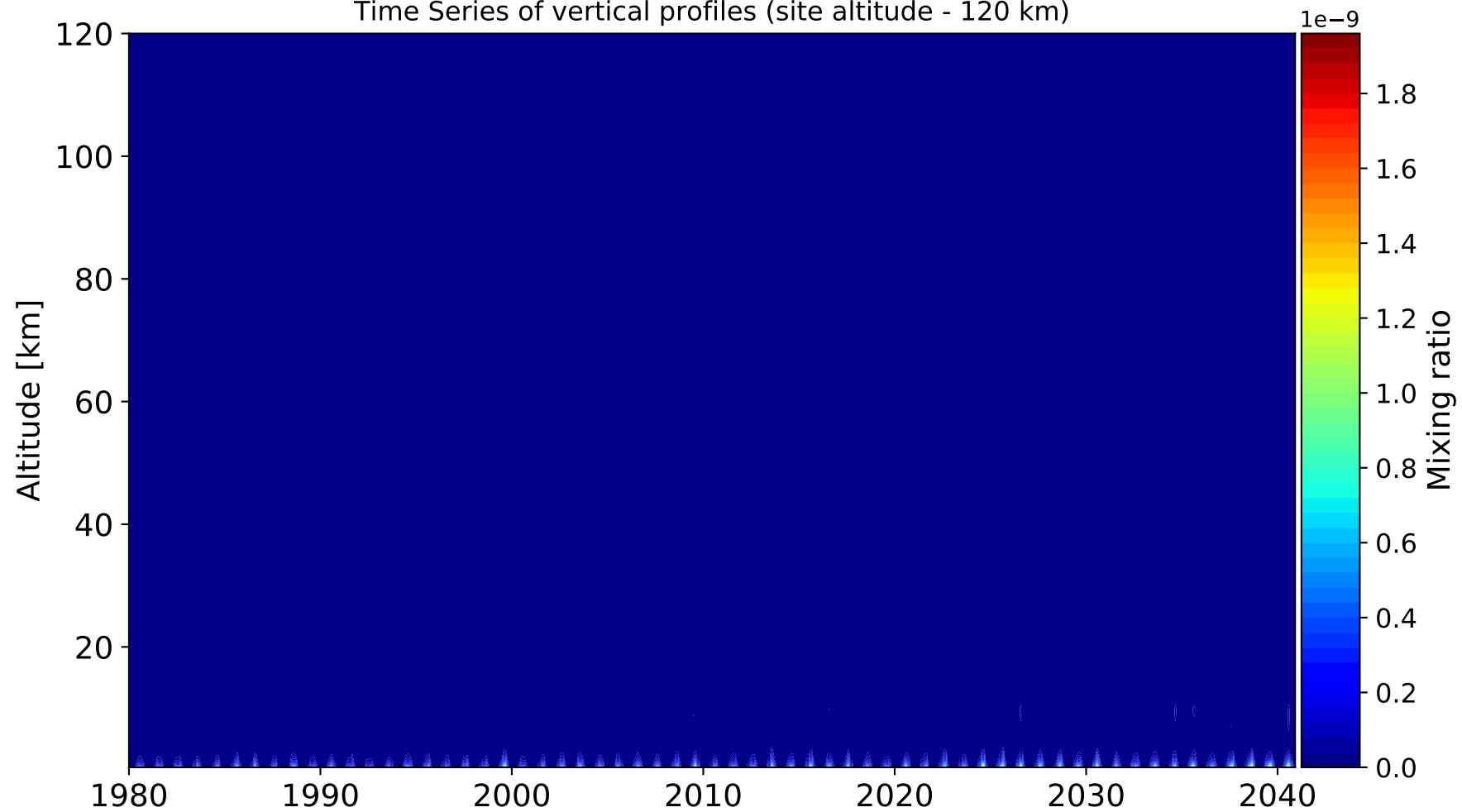
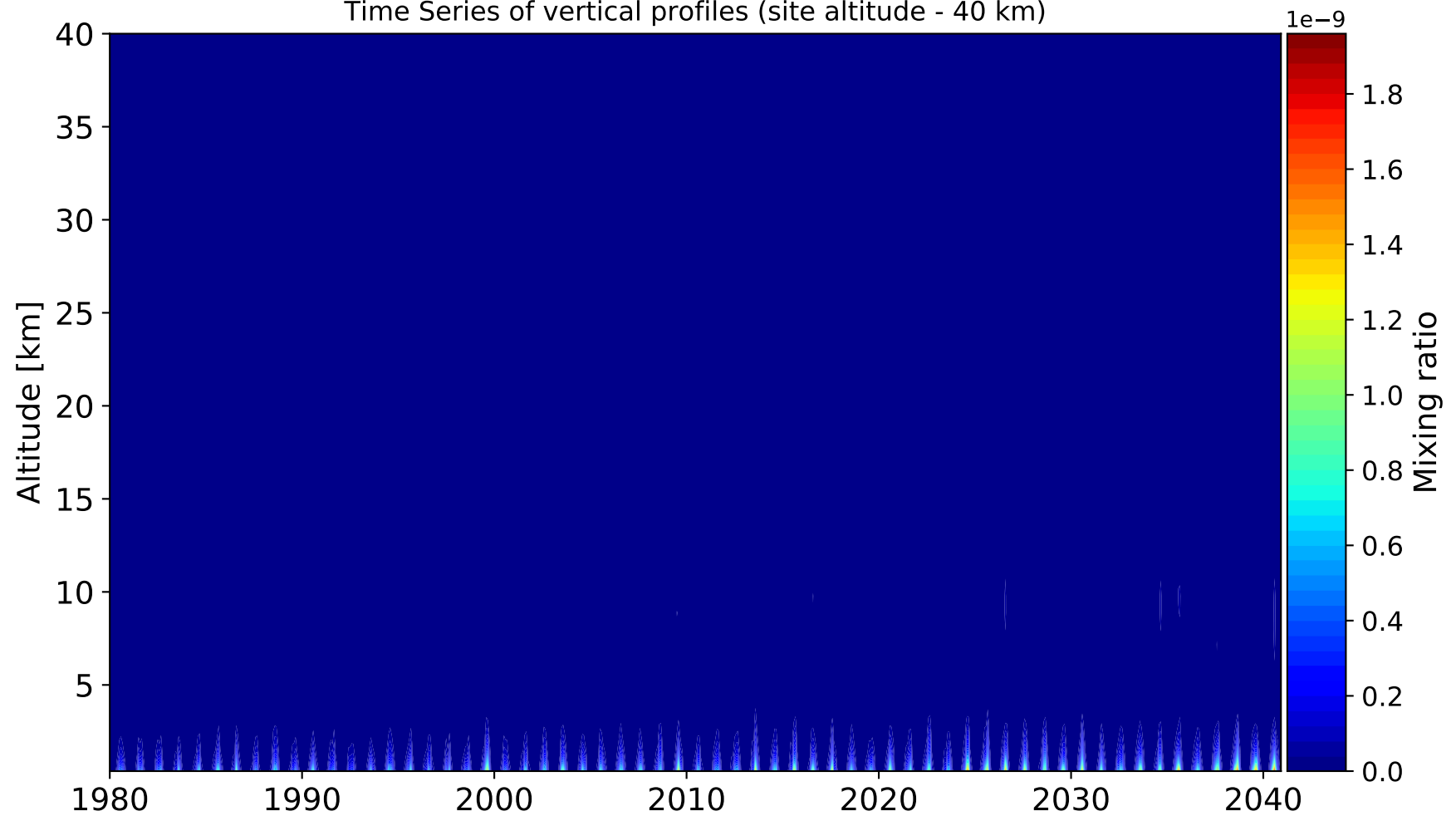


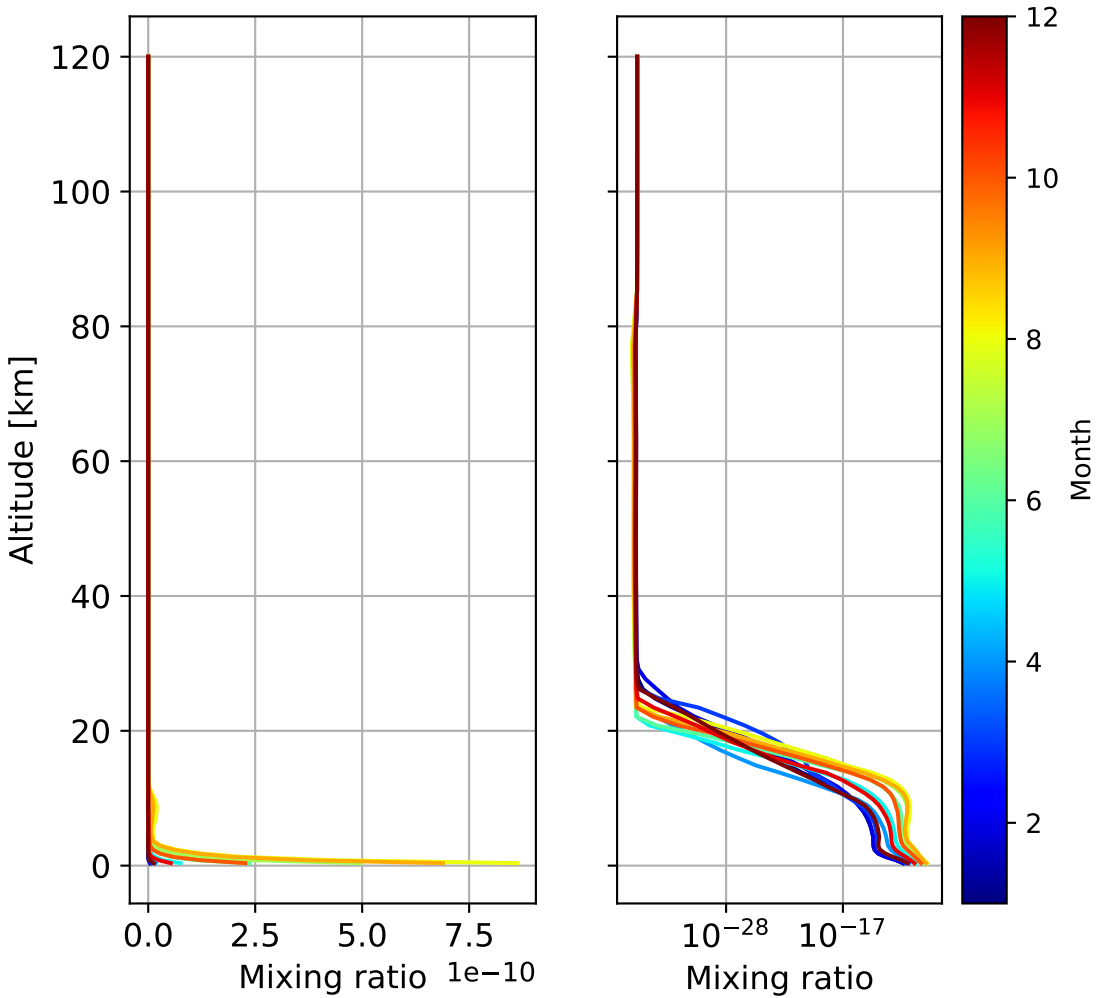
Time Series of vertical profiles (site altitude - 120 km)



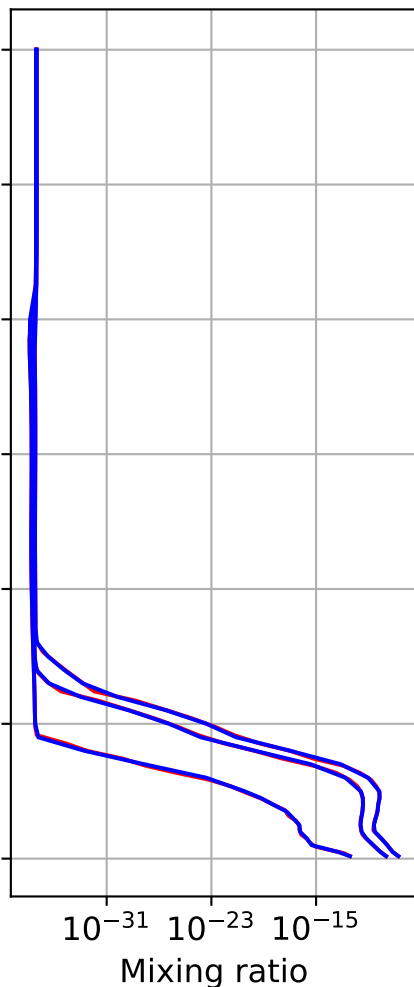
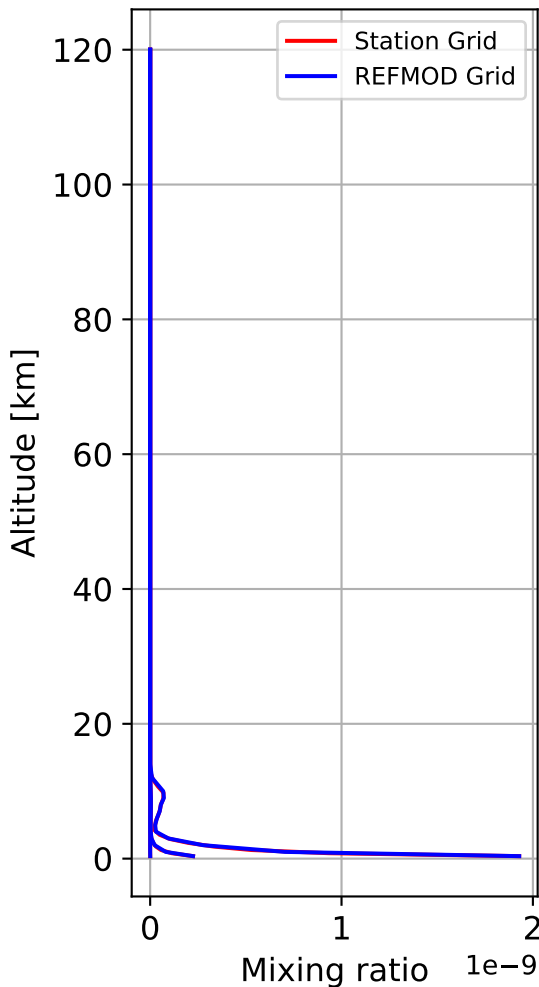
Time Series of vertical profiles (site altitude - 40 km)



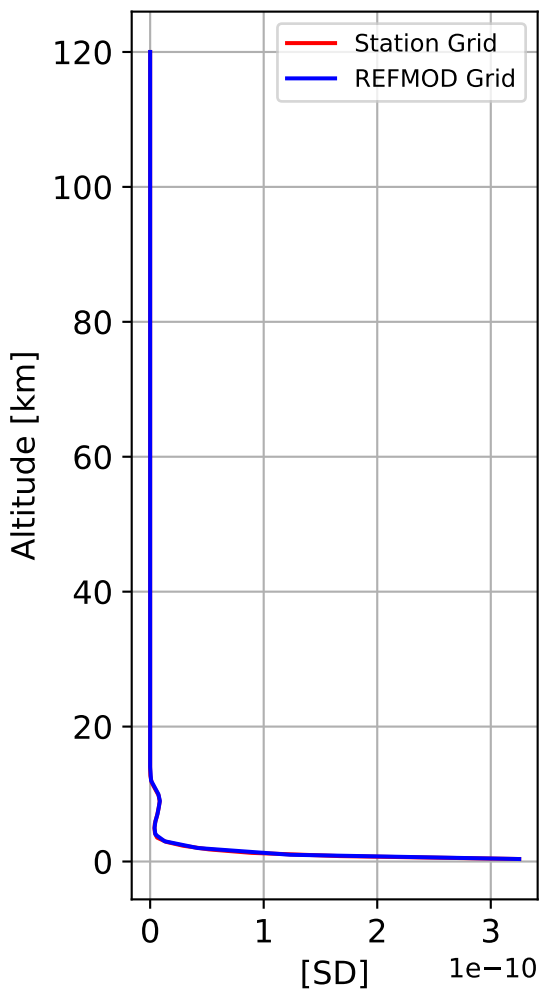
# Monthly mean WACCM profile (interpolated to station grid) Fort\_McMurray, 56.65N, 248.78E, 0.369kmasl



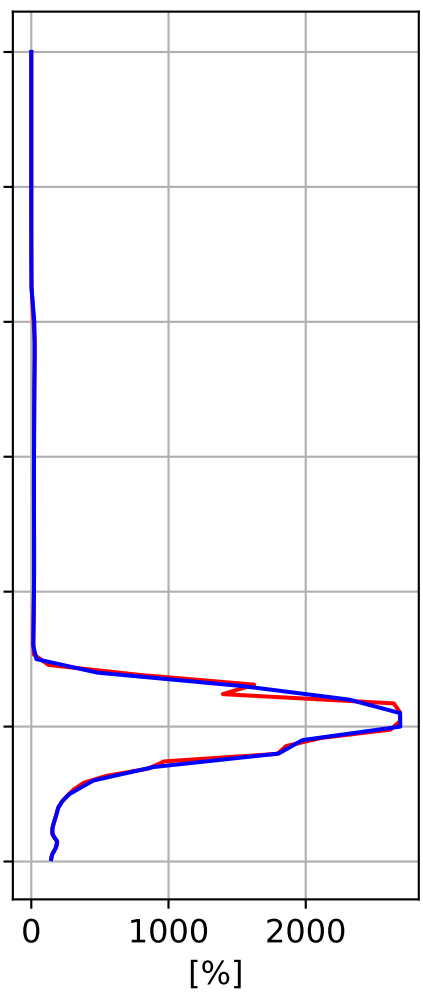
Min, Max, Mean of 732 profiles  
Fort\_McMurray, 56.65N, 248.78E, 0.369kmasl



### Std. Deviation



### Percent Deviation



Level covariance matrix

 $1e-19$ 

Altitude [km]

120  
100  
80  
60  
40  
20

20

Altitude [km]

20

40

60

80

100

1.000

0.875

0.750

0.625

0.500

0.375

0.250

0.125

0.000

Mixing ratio[ $\sim 2$ ]