In [1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

In [3]:
```
x=pd.read_excel("C:/Users/suma.s.huddar/Documents/VM Forecasting/01_22_January Forecast/Mobile Care January 22
```

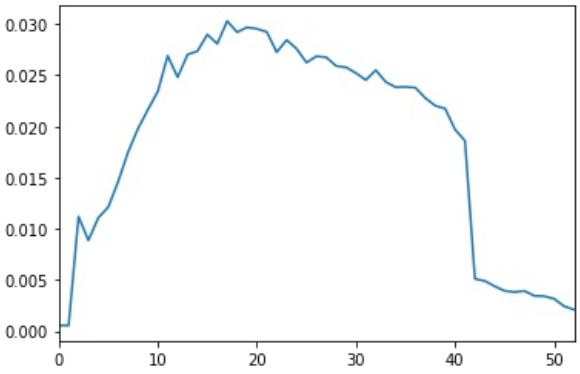
In [4]:
```
x.head()
```

Out[4]:

	Interval	Sun	Mon	Tue	wed	Thurs	Fri	Sat	Unnamed: 8	Interval.1	Sun_sav	Mon_Sav	Tue_Sav	Wed_S
0	07:30:00	0.000545	0.000273	0.000339	0.000537	0.000361	0.000457	0.000309	NaN	07:30:00	0.000630	0.003522	0.004708	0.005
1	07:45:00	0.000540	0.000424	0.000548	0.000786	0.000738	0.000727	0.000588	NaN	07:45:00	0.003623	0.005690	0.006538	0.006
2	08:00:00	0.011183	0.011946	0.012838	0.013319	0.013256	0.013699	0.012537	NaN	08:00:00	0.006431	0.007726	0.008268	0.008
3	08:15:00	0.008869	0.010224	0.010296	0.011300	0.011162	0.011915	0.010769	NaN	08:15:00	0.009057	0.009633	0.009899	0.010
4	08:30:00	0.011078	0.011243	0.011778	0.012252	0.011704	0.012700	0.012107	NaN	08:30:00	0.011505	0.011415	0.011434	0.011

In [5]:
```
x['Sun'].plot()
```

Out[5]:
```
<AxesSubplot:>
```



In [6]:
```
from scipy.signal import savgol_filter
#x=pd.read_excel("C:/Users/suma.s.huddar/Documents/VM Forecasting/June 2021 Forecast/Dialler_Freestyle_0129_21/
yhat=savgol_filter(x['Sun'],53,3) #13(20:30-23:45) # 53(7.30-20.30)
```

In [7]:
```
print(yhat.shape)
yhat[0:100]
```

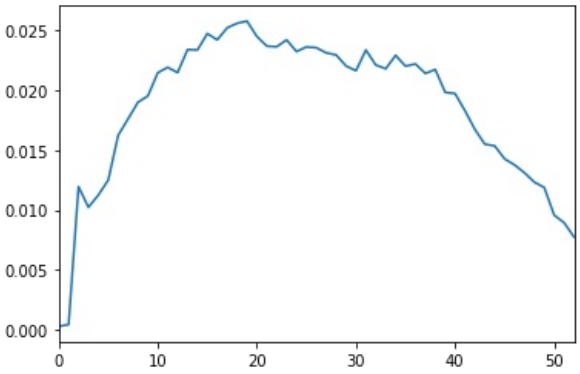
Out[7]:
```
(53,)
array([ 0.00062976,  0.00362333,  0.00643098,  0.00905675,  0.01150467,
        0.01377878,  0.01588309,  0.01782165,  0.01959849,  0.02121763,
        0.02268312,  0.02399897,  0.02516922,  0.0261979 ,  0.02708905,
        0.02784669,  0.02847485,  0.02897758,  0.02935889,  0.02962282,
        0.0297734 ,  0.02981467,  0.02975064,  0.02958536,  0.02932286,
        0.02896717,  0.02852231,  0.02799232,  0.02738124,  0.02669308,
        0.02593189,  0.0251017 ,  0.02420653,  0.02325042,  0.0222374 ,
        0.02117149,  0.02005674,  0.01889717,  0.01769681,  0.0164597 ,
        0.01518987,  0.01389134,  0.01256815,  0.01122433,  0.00986392,
        0.00849093,  0.00710941,  0.00572339,  0.00433689,  0.00295395,
        0.0015786 ,  0.00021487, -0.00113321])
```

In [8]:
```
y=pd.DataFrame(yhat)
y.to_csv('MC_scipy_Sun53.csv')
import os
os.getcwd()
```

Out[8]:
```
'C:\\Users\\suma.s.huddar\\Documents\\Python Scripts'
```

In [18]:
```
x['Mon'].plot()
```

Out[18]:
```
<AxesSubplot:>
```



In [19]:
```
from scipy.signal import savgol_filter
#x=pd.read_excel("C:/Users/suma.s.huddar/Documents/VM Forecasting/June 2021 Forecast/Dialler_Freestyle_0129_21/
yhat=savgol_filter(x['Mon'],53,3) #13(20:30-23:45) # 53(7.30-20.30)
```

In [20]:
```
print(yhat.shape)
yhat[0:100]
```

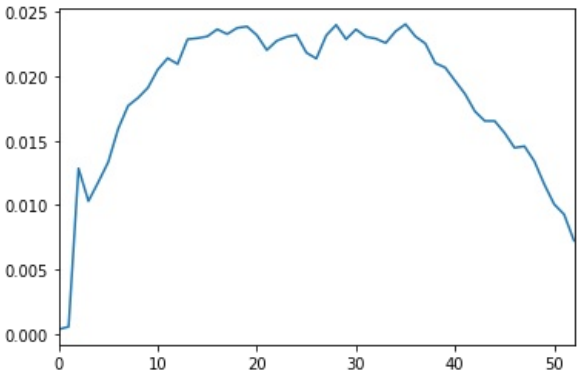
Out[20]:
```
(53,)
array([0.00352193, 0.00568981, 0.00772591, 0.00963331, 0.01141508,
       0.01307428, 0.014614  , 0.01603731, 0.01734728, 0.01854699,
       0.0196395 , 0.0206279 , 0.02151525, 0.02230463, 0.02299911,
       0.02360177, 0.02411568, 0.02454391, 0.02488953, 0.02515562,
       0.02534526, 0.02546151, 0.02550746, 0.02548616, 0.02540071,
       0.02525416, 0.02504959, 0.02479009, 0.02447871, 0.02411854,
       0.02371264, 0.02326409, 0.02277597, 0.02225135, 0.02169329,
       0.02110488, 0.02048919, 0.01984929, 0.01918826, 0.01850916,
       0.01781507, 0.01710907, 0.01639423, 0.01567362, 0.01495031,
       0.01422738, 0.01350791, 0.01279496, 0.01209161, 0.01140093,
       0.010726  , 0.01006988, 0.00943566])
```

In [21]:
```
y=pd.DataFrame(yhat)
y.to_csv('MC_scipy_Mon53.csv')
import os
os.getcwd()
```

Out[21]:
```
'C:\\Users\\suma.s.huddar\\Documents\\Python Scripts'
```

In [22]:
```
x['Tue'].plot()
```

Out[22]:
```
<AxesSubplot:>
```



In [23]:
```
from scipy.signal import savgol_filter
#x=pd.read_excel("C:/Users/suma.s.huddar/Documents/VM Forecasting/June 2021 Forecast/Dialler_Freestyle_0129_21/
yhat=savgol_filter(x['Tue'],53,3) #13(20:30-23:45) # 53(7.30-20.30)
```

In [24]:
```
print(yhat.shape)
yhat[0:100]
```

```
(53,)
```

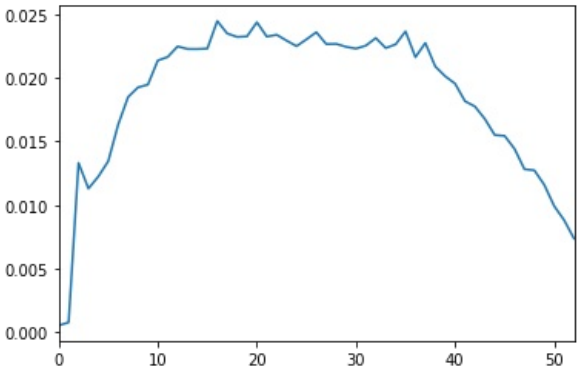
Out[24]:
```
array([0.00470775, 0.00653787, 0.00826773, 0.00989927, 0.01143439,
       0.01287502, 0.01422309, 0.01548051, 0.01664921, 0.0177311 ,
       0.01872811, 0.01964216, 0.02047517, 0.02122907, 0.02190577,
       0.02250719, 0.02303526, 0.02349189, 0.02387902, 0.02419855,
       0.02445242, 0.02464254, 0.02477083, 0.02483922, 0.02484963,
       0.02480398, 0.02470418, 0.02455217, 0.02434986, 0.02409917,
       0.02380203, 0.02346036, 0.02307607, 0.0226511 , 0.02218735,
       0.02168676, 0.02115124, 0.02058271, 0.01998311, 0.01935434,
       0.01869833, 0.01801699, 0.01731227, 0.01658606, 0.0158403 ,
       0.0150769 , 0.0142978 , 0.0135049 , 0.01270013, 0.01188541,
       0.01106267, 0.01023381, 0.00940078])
```

In [25]:
```
y=pd.DataFrame(yhat)
y.to_csv('MC_scipy_Tue53.csv')
import os
os.getcwd()
```

Out[25]:
```
'C:\\Users\\suma.s.huddar\\Documents\\Python Scripts'
```

In [26]:
```
x['wed'].plot()
```

Out[26]:
```
<AxesSubplot:>
```



In [27]:
```
from scipy.signal import savgol_filter
#x=pd.read_excel("C:/Users/suma.s.huddar/Documents/VM Forecasting/June 2021 Forecast/Dialler_Freestyle_0129_21/
yhat=savgol_filter(x['wed'],53,3) #13(20:30-23:45) # 53(7.30-20.30)
```

In [28]:
```
print(yhat.shape)
yhat[0:100]
```

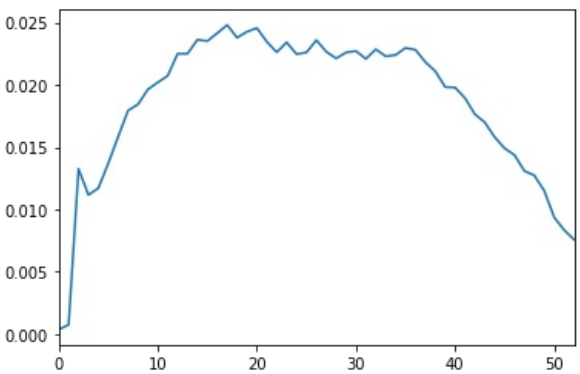
Out[28]:
```
(53,)
array([0.00510589, 0.0069629 , 0.00871424, 0.01036205, 0.01190849,
       0.01335574, 0.01470593, 0.01596124, 0.01712381, 0.01819582,
       0.01917941, 0.02007674, 0.02088998, 0.02162128, 0.0222728 ,
       0.02284669, 0.02334512, 0.02377025, 0.02412423, 0.02440922,
       0.02462738, 0.02478086, 0.02487183, 0.02490245, 0.02487487,
       0.02479125, 0.02465375, 0.02446452, 0.02422573, 0.02393954,
       0.02360809, 0.02323356, 0.0228181 , 0.02236386, 0.02187301,
       0.0213477 , 0.0207901 , 0.02020235, 0.01958663, 0.01894508,
       0.01827986, 0.01759314, 0.01688707, 0.01616381, 0.01542552,
       0.01467436, 0.01391248, 0.01314205, 0.01236521, 0.01158414,
       0.01080099, 0.01001791, 0.00923706])
```

In [29]:
```
y=pd.DataFrame(yhat)
y.to_csv('MC_scipy_Wed53.csv')
import os
os.getcwd()
```

Out[29]:
```
'C:\\Users\\suma.s.huddar\\Documents\\Python Scripts'
```

In [30]:
```
x['Thurs'].plot()
```

Out[30]:
```
<AxesSubplot:>
```



In [31]:
```
from scipy.signal import savgol_filter
```

```
#x=pd.read_excel("C:/Users/suma.s.huddar/Documents/VM Forecasting/June 2021 Forecast/Dialler_Freestyle_0129_21/
yhat=savgol_filter(x['Thurs'],53,3) #13(20:30-23:45) # 53(7.30-20.30)
```

In [32]:
```
print(yhat.shape)
yhat[0:100]
```

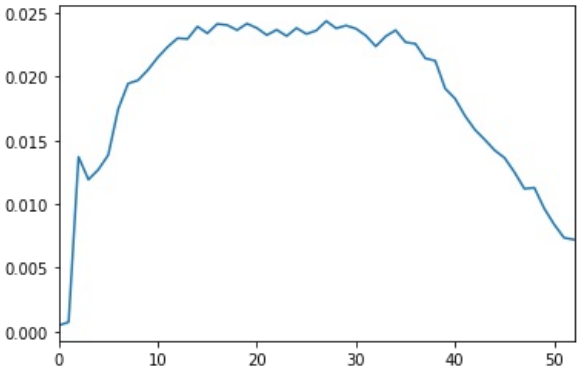
Out[32]:
```
(53,)
array([0.00470192, 0.00661689, 0.00842208, 0.01011976, 0.01171223,
       0.01320177, 0.01459065, 0.01588116, 0.01707558, 0.0181762 ,
       0.0191853 , 0.02010515, 0.02093805, 0.02168628, 0.02235211,
       0.02293784, 0.02344574, 0.02387809, 0.02423718, 0.0245253 ,
       0.02474472, 0.02489772, 0.02498659, 0.02501362, 0.02498108,
       0.02489125, 0.02474643, 0.02454888, 0.0243009 , 0.02400477,
       0.02366277, 0.02327718, 0.02285028, 0.02238437, 0.02188171,
       0.02134459, 0.0207753 , 0.02017612, 0.01954933, 0.01889721,
       0.01822205, 0.01752612, 0.01681172, 0.01608111, 0.0153366 ,
       0.01458045, 0.01381496, 0.01304239, 0.01226505, 0.0114852 ,
       0.01070513, 0.00992713, 0.00915348])
```

In [33]:
```
y=pd.DataFrame(yhat)
y.to_csv('MC_scipy_Thurs53.csv')
import os
os.getcwd()
```

Out[33]:
```
'C:\\Users\\suma.s.huddar\\Documents\\Python Scripts'
```

In [34]:
```
x['Fri'].plot()
```

Out[34]:
```
<AxesSubplot:>
```



In [35]:
```
from scipy.signal import savgol_filter
#x=pd.read_excel("C:/Users/suma.s.huddar/Documents/VM Forecasting/June 2021 Forecast/Dialler_Freestyle_0129_21/
yhat=savgol_filter(x['Fri'],53,3) #13(20:30-23:45) # 53(7.30-20.30)
```

In [36]:
```
print(yhat.shape)
yhat[0:100]
```

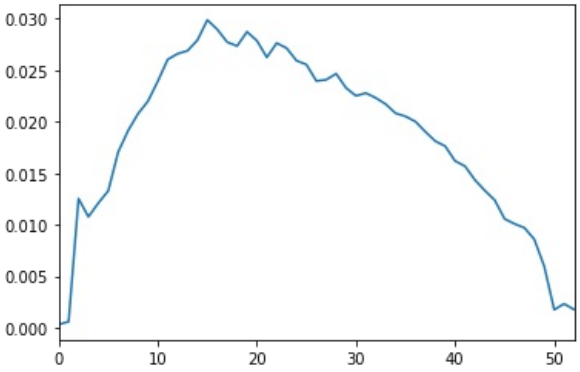
Out[36]:
```
(53,)
array([0.00506007, 0.00704411, 0.00891181, 0.01066561, 0.01230791,
       0.01384114, 0.01526772, 0.01659005, 0.01781057, 0.01893169,
       0.01995582, 0.0208854 , 0.02172282, 0.02247052, 0.02313091,
       0.02370641, 0.02419944, 0.02461242, 0.02494776, 0.02520788,
       0.02539521, 0.02551215, 0.02556114, 0.02554458, 0.0254649 ,
       0.02532451, 0.02512583, 0.02487129, 0.02456329, 0.02420426,
       0.02379662, 0.02334278, 0.02284516, 0.02230619, 0.02172827,
       0.02111384, 0.0204653 , 0.01978507, 0.01907558, 0.01833923,
       0.01757846, 0.01679568, 0.0159933 , 0.01517375, 0.01433944,
       0.0134928 , 0.01263623, 0.01177216, 0.01090301, 0.0100312 ,
       0.00915914, 0.00828925, 0.00742395])
```

In [37]:
```
y=pd.DataFrame(yhat)
y.to_csv('MC_scipy_Fri53.csv')
import os
os.getcwd()
```

Out[37]:
```
'C:\\Users\\suma.s.huddar\\Documents\\Python Scripts'
```

In [38]:
```
x['Sat'].plot()
```

Out[38]:
```
<AxesSubplot:>
```



In [39]:
```
from scipy.signal import savgol_filter
#x=pd.read_excel("C:/Users/suma.s.huddar/Documents/VM Forecasting/June 2021 Forecast/Dialler_Freestyle_0129_21/
yhat=savgol_filter(x['Sat'],53,3) #13(20:30-23:45) # 53(7.30-20.30)
```

In [40]:
```
print(yhat.shape)
yhat[0:100]
```

Out[40]:
```
(53,)
array([0.00267998, 0.00545452, 0.00804509, 0.01045623, 0.01269249,
       0.01475843, 0.01665858, 0.0183975 , 0.01997973, 0.02140983,
       0.02269234, 0.0238318 , 0.02483278, 0.0256998 , 0.02643743,
       0.02705021, 0.02754269, 0.02791942, 0.02818494, 0.0283438 ,
       0.02840055, 0.02835975, 0.02822592, 0.02800364, 0.02769743,
       0.02731186, 0.02685147, 0.0263208 , 0.0257244 , 0.02506683,
       0.02435263, 0.02358635, 0.02277254, 0.02191574, 0.0210205 ,
       0.02009137, 0.01913291, 0.01814964, 0.01714614, 0.01612693,
       0.01509658, 0.01405963, 0.01302062, 0.01198411, 0.01095464,
       0.00993676, 0.00893502, 0.00795396, 0.00699814, 0.00607211,
       0.0051804 , 0.00432757, 0.00351817])
```

In [41]:
```
y=pd.DataFrame(yhat)
y.to_csv('MC_scipy_Sat53.csv')
import os
os.getcwd()
```

Out[41]:
```
'C:\\Users\\suma.s.huddar\\Documents\\Python Scripts'
```

In [ ]: