

# Series de tiempo de Egresos para el proyecto Contaminación

## 2010

```
In [2]: # Se importan las librerias necesarias
import pandas as pd

# Se cargan los datos
columns = ['EGRESO', 'DIAG_INI']
dataframe = pd.read_csv('EGRESO_2010.csv', usecols=columns).dropna()
dataframe
```

Out[2]:

	EGRESO	DIAG_INI
0	19/01/2010	O829
1	16/02/2010	J189
2	23/03/2010	N814
3	17/04/2010	O759
4	22/05/2010	K359
...	...	...
2634334	21/07/2010	O064
2634335	21/05/2010	S822
2634336	23/03/2010	K802
2634337	17/08/2010	O809
2634338	21/12/2010	C629

2634339 rows × 2 columns

```
In [12]: # Se importan las librerias necesarias
from epiweeks import Week, date

# Se convierten los string a objetos datetime en 'dataframe'
strfdtoriginal = '%d/%m/%Y'
dataframe['EGRESO'] = pd.to_datetime(dataframe['EGRESO'], format=strfdtoriginal)

# Se agrega una columna con los numeros de semana
dataframe['sem'] = ''
nrows = len(dataframe.index)
for i in range(nrows):
    dfday = dataframe['EGRESO'][i]
    mydate = date(dfday.year, dfday.month, dfday.day)
    numberweek = Week.fromdate(mydate)
    dataframe['sem'][i] = numberweek.week

dataframe
```

Out[12]:

	EGRESO	DIAG_INI	sem
0	2010-01-19	O829	3
1	2010-02-16	J189	7
2	2010-03-23	N814	12
3	2010-04-17	O759	15
4	2010-05-22	K359	20
...	...	...	...
2634334	2010-07-21	O064	29
2634335	2010-05-21	S822	20
2634336	2010-03-23	K802	12
2634337	2010-08-17	O809	33
2634338	2010-12-21	C629	51

2634339 rows × 3 columns

In [21]: # Se forma el nuevo dataframe 'semanas' con el numero de semana del año y la cantidad de egresos en cada semana  
semanas = dataframe['sem'].value\_counts()  
semanas = semanas.sort\_index()  
semanas

```
Out[21]: 1    43463
         2    48020
         3    49300
         4    50404
         5    46716
         6    50279
         7    49462
         8    50102
         9    51123
        10   52219
        11   48527
        12   51158
        13   46652
        14   48200
        15   49187
        16   49499
        17   51348
        18   48072
        19   50004
        20   50627
        21   51101
        22   51157
        23   51436
        24   49970
        25   49757
        26   49682
        27   50141
        28   50981
        29   50164
        30   50925
        31   51991
        32   52355
        33   52240
        34   53192
        35   54220
        36   55165
        37   48947
        38   54466
        39   54926
        40   54540
        41   54019
        42   54255
        43   52924
        44   47914
        45   52907
        46   50233
        47   52802
        48   51769
        49   51864
        50   51110
        51   52494
        52   40330
Name: sem, dtype: int64
```

```
In [22]: # Se pasa a un nuevo dataframe
newdf = pd.DataFrame()
newdf[ 'sem' ] = semanas.index
newdf[ 'casos' ] = ''
nr = len(newdf.index)
for i in range (nr):
    newdf[ 'casos' ][i] = int(semanas[i+1])
newdf
```

Out[22]:

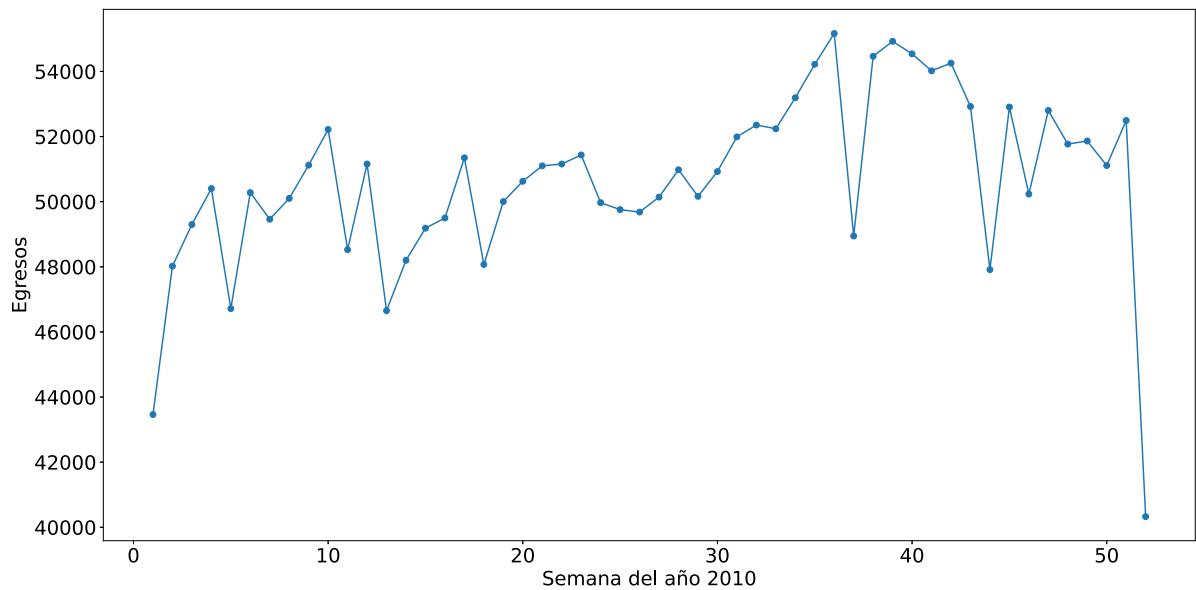
	sem	casos
0	1	43463
1	2	48020
2	3	49300
3	4	50404
4	5	46716
5	6	50279
6	7	49462
7	8	50102
8	9	51123
9	10	52219
10	11	48527
11	12	51158
12	13	46652
13	14	48200
14	15	49187
15	16	49499
16	17	51348
17	18	48072
18	19	50004
19	20	50627
20	21	51101
21	22	51157
22	23	51436
23	24	49970
24	25	49757
25	26	49682
26	27	50141
27	28	50981
28	29	50164
29	30	50925
30	31	51991
31	32	52355
32	33	52240
33	34	53192
34	35	54220

sem	casos
<b>35</b>	36 55165
<b>36</b>	37 48947
<b>37</b>	38 54466
<b>38</b>	39 54926
<b>39</b>	40 54540
<b>40</b>	41 54019
<b>41</b>	42 54255
<b>42</b>	43 52924
<b>43</b>	44 47914
<b>44</b>	45 52907
<b>45</b>	46 50233
<b>46</b>	47 52802
<b>47</b>	48 51769
<b>48</b>	49 51864
<b>49</b>	50 51110
<b>50</b>	51 52494
<b>51</b>	52 40330

```
In [127]: # Se importan las librerías necesarias
import matplotlib.pyplot as plt

año = '2010'
print('Egresos ' + año)
# Se establece el tamaño de la figura
plt.rcParams.update({'font.size': 20})
plt.figure(figsize=(20, 10))
# Se define que se unan los puntos en la gráfica
plt.scatter(semanas.index, newdf.casos)
# Se definen las coordenadas 'x' y 'y'
plt.plot(semanas.index, newdf.casos)
# Se coloca un título para el eje x
plt.xlabel("Semana del año " + año)
# Se coloca un título para el eje y
plt.ylabel("Egresos")
# Se guarda la figura como un archivo
plt.savefig(año + '/Egresos' + año + '.jpg', format='jpg')
# Se muestra la figura en la terminal
plt.show()
```

Egresos 2010



```
In [128]: # Se crea el dataframe 'diagnosticos' con los nombre de los diferentes diagnosticos sin repeticion
diagnosticos = dataframe['DIAG_INI'].value_counts()
# Se ordena del diagnostico con mayore numero de egresos al diagnostico con menor numero de egresos
diagnosticos = diagnosticos.sort_values(ascending = False)
# Se crea el dataframe 'cie' con los nombres de los diagnosticos, los numeros de las semanas, y la cantidad de diagnosticos de dicha enfermedad en cada semana
cie = dataframe.groupby(['DIAG_INI', 'sem']).count()

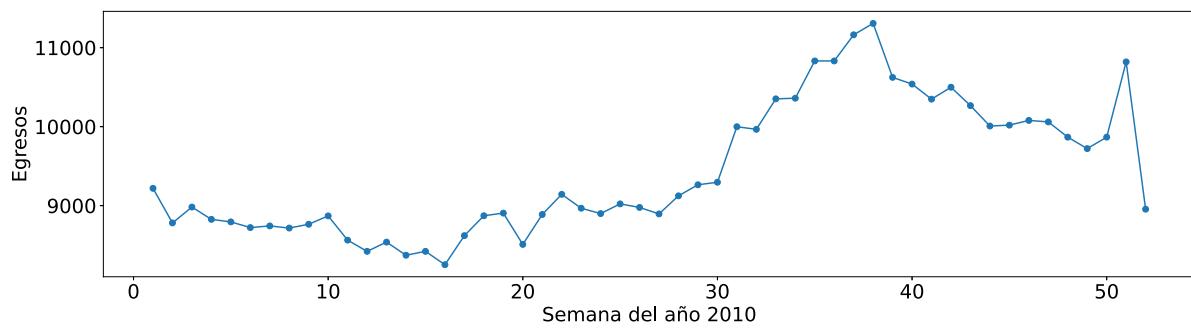
# Se importa la libreria necesaria para la figura
import matplotlib.pyplot as plt

plt.rcParams.update({'font.size': 20})

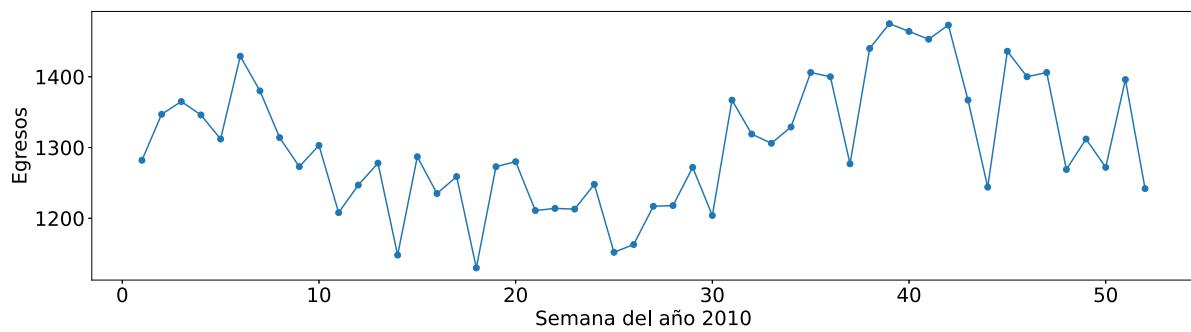
print('Año ' + año + '\n')
# Se inicia un contador para controlar la cantidad de graficos a generar
i = 0
ndiagnosticos = len(diagnosticos.index)
maximo = ndiagnosticos-5
# Proceso de generación de las figuras
for name in diagnosticos.index:
    if i < 25 or i >= maximo:
        y = []
        for index in semanas.index:
            try:
                y.append(cie['EGRESO'][name, index])
            except:
                y.append(0)
        print('\n' + name)
        plt.figure(figsize=(20, 5))
        plt.scatter(semanas.index, y)
        plt.plot(semanas.index, y)
        plt.xlabel("Semana del año " + año)
        plt.ylabel("Egresos")
        plt.savefig(año + '/' + name + '_' + año + '.jpg', format='jpg')
        plt.show()
    i = i+1
```

Año 2010

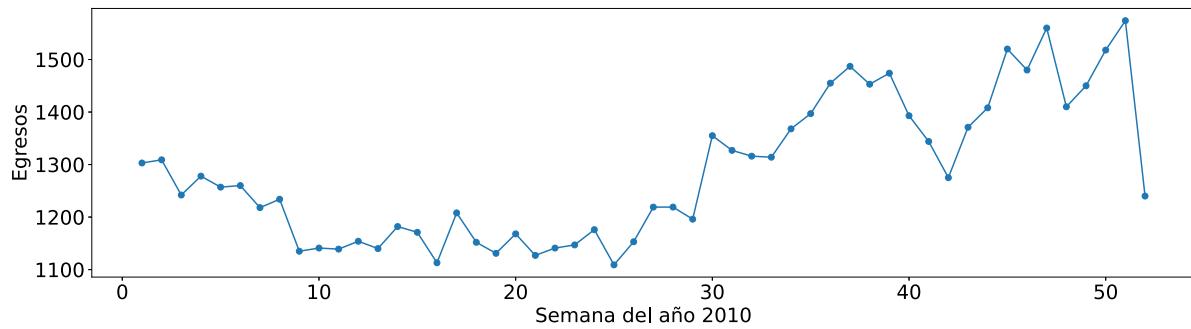
0809



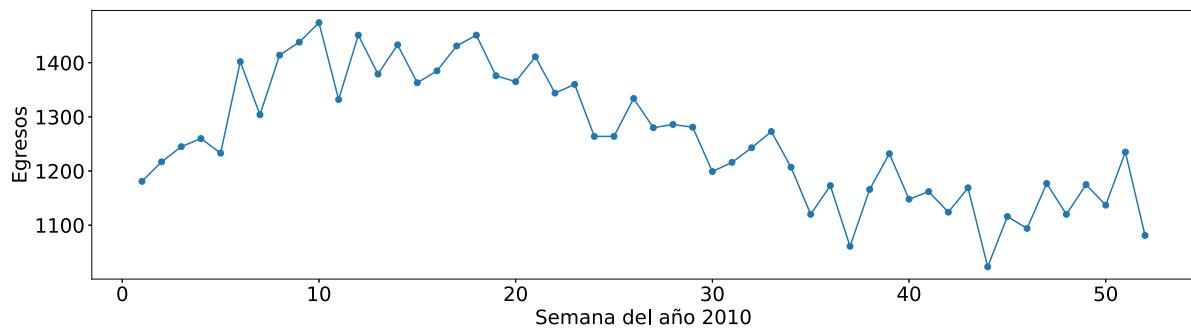
0829



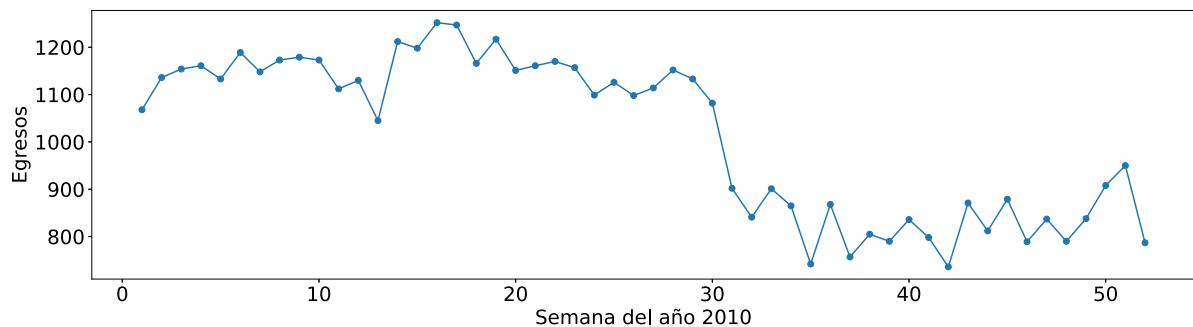
0800



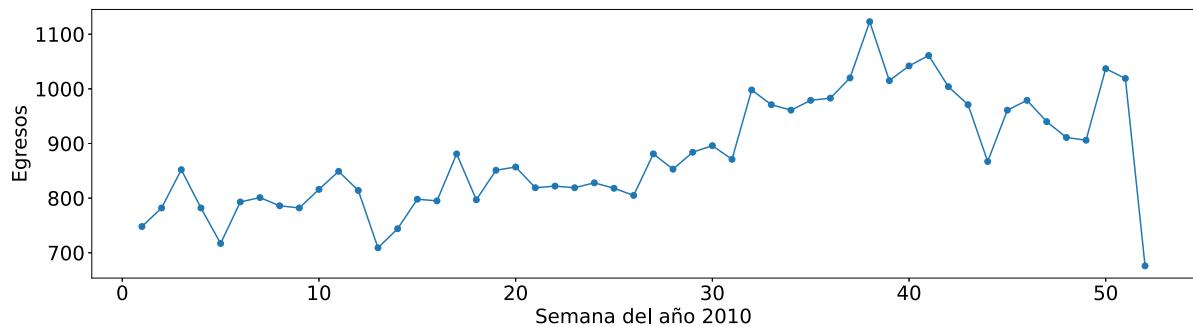
0064



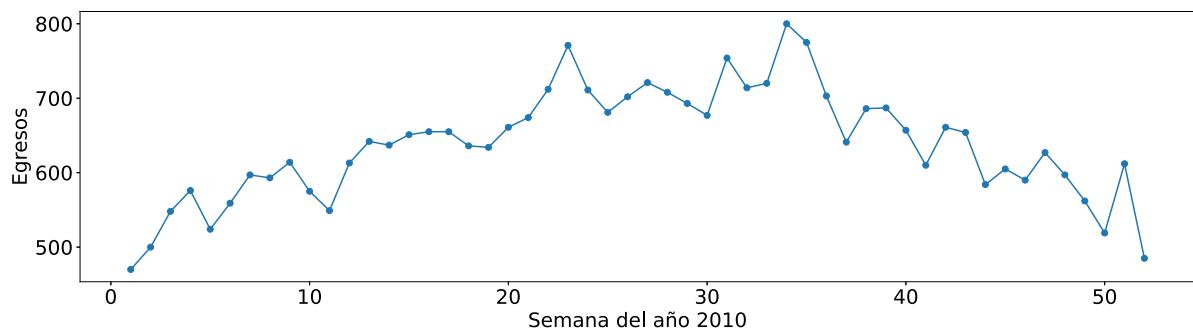
N189



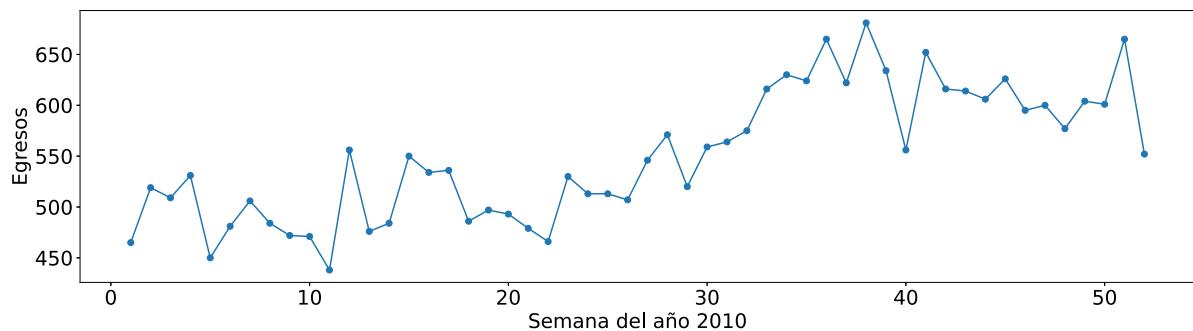
0342



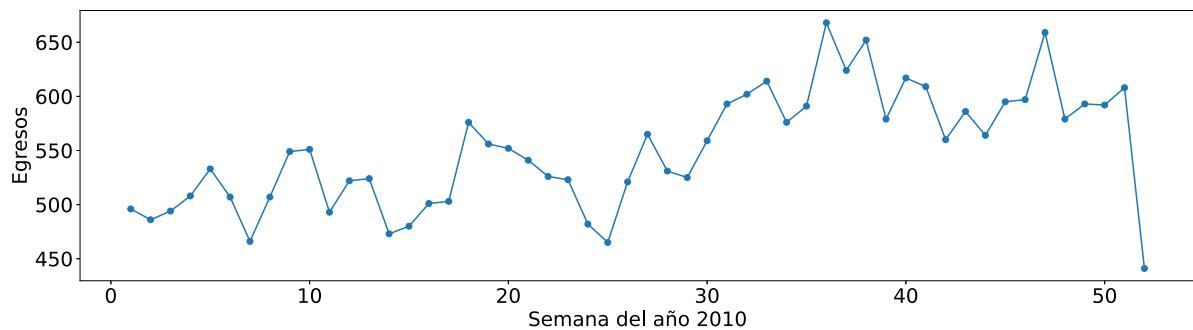
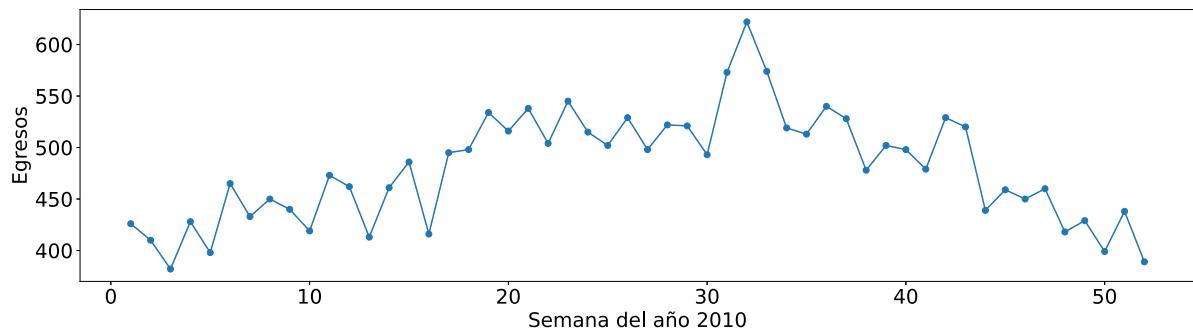
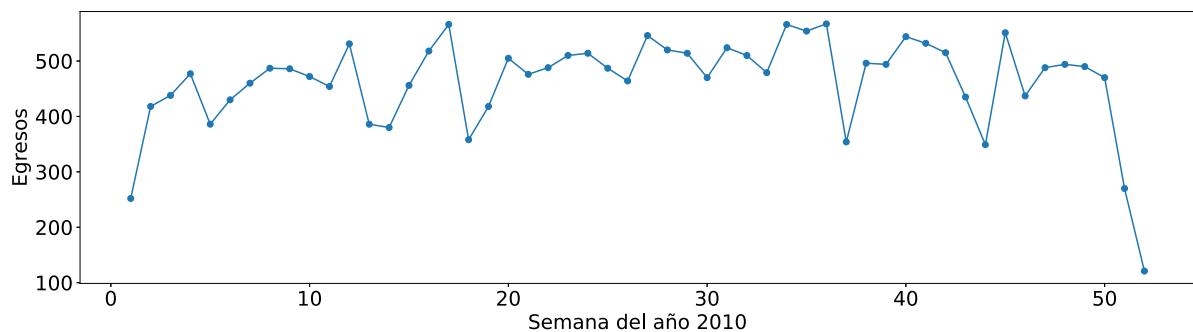
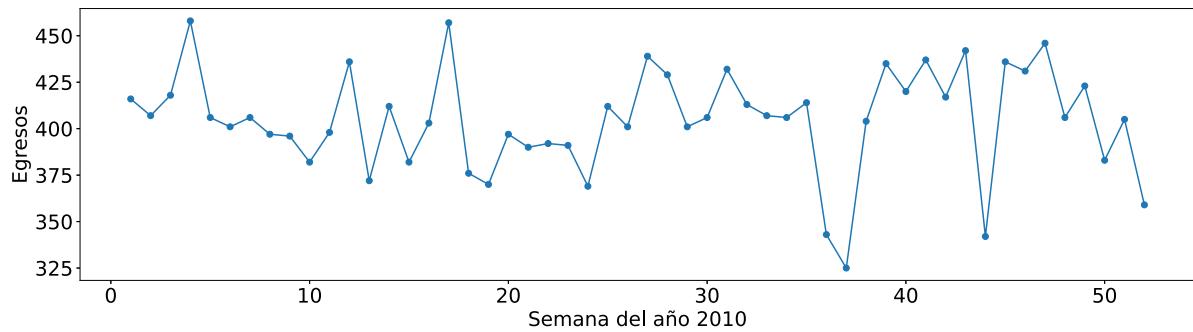
K359

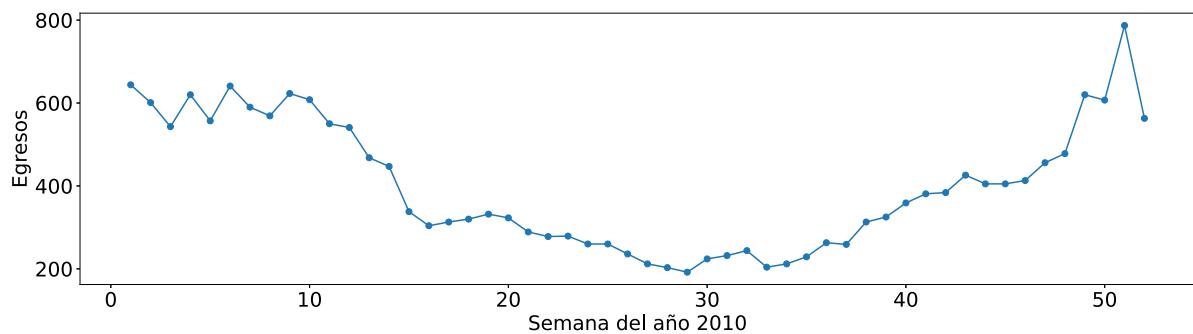


0429

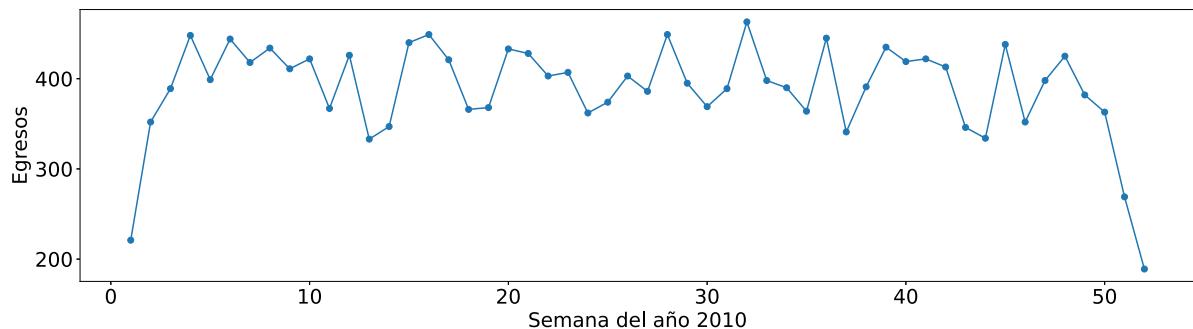


0339

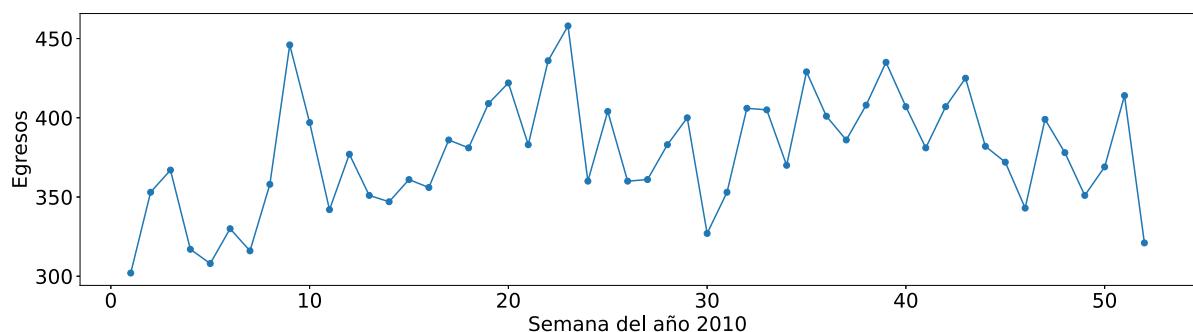
**0470****K409****N180****J189**



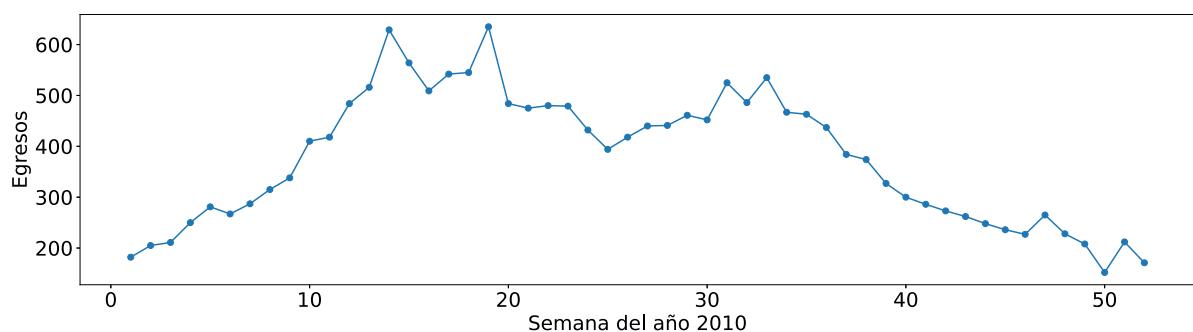
K801



0410

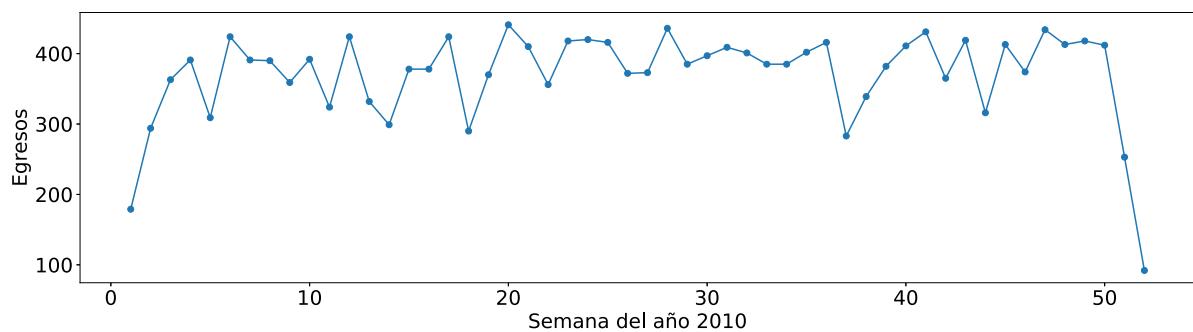


A09X

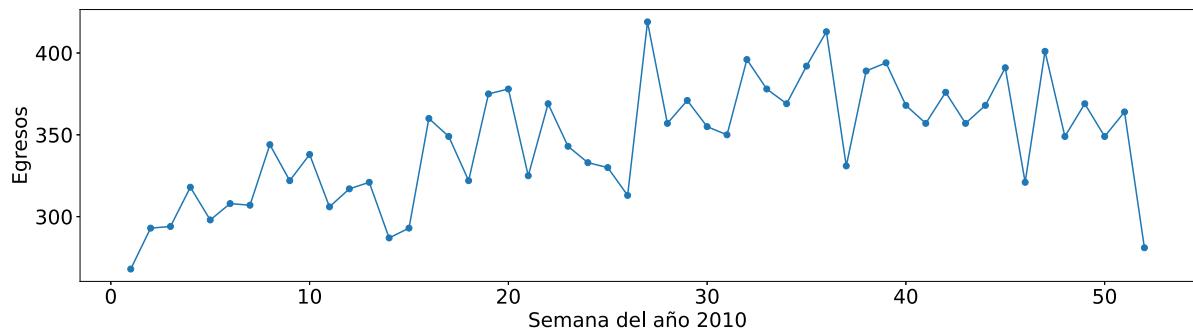


D259

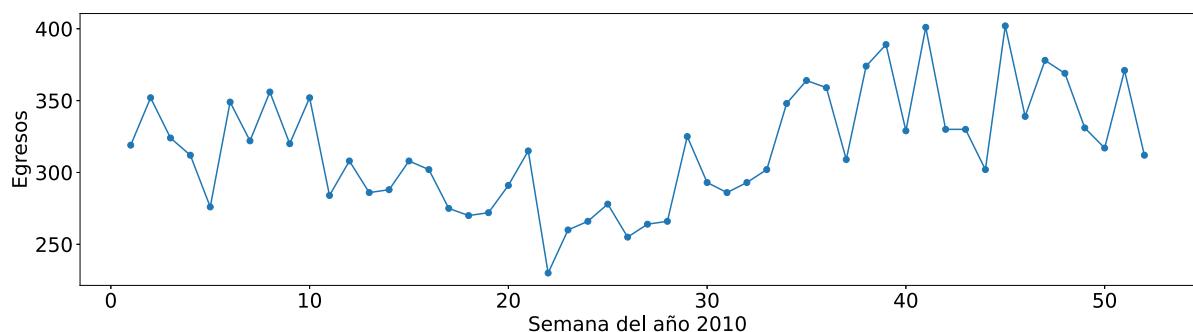
## series\_de\_tiempo\_egresos2



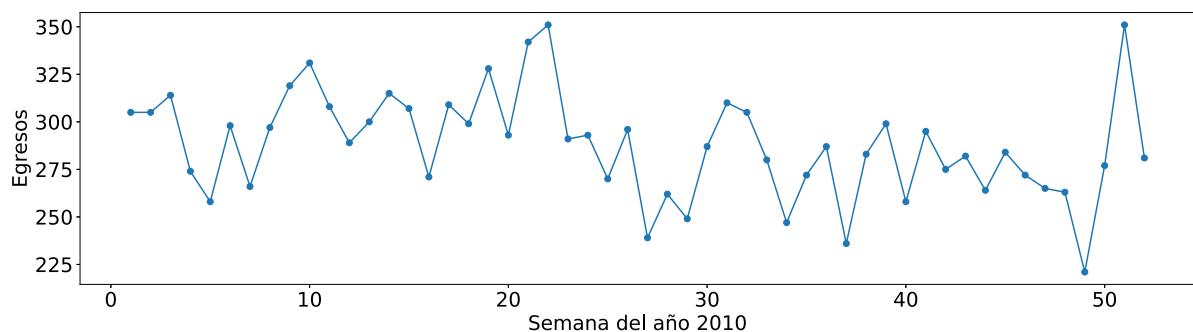
P073



013X

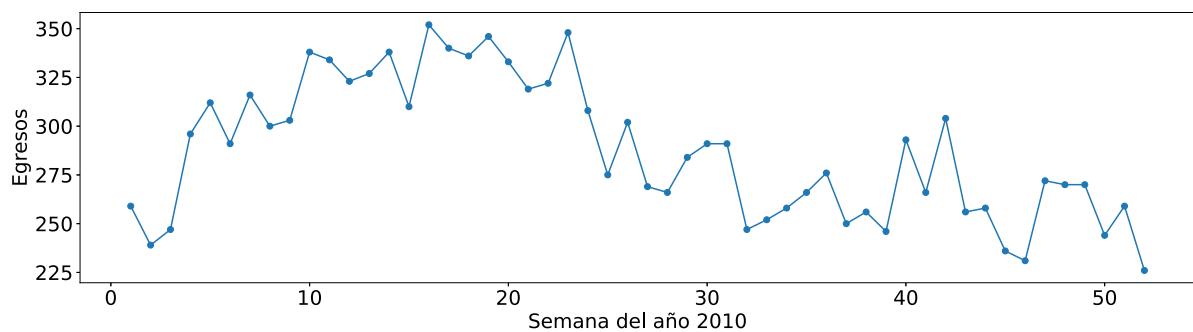


E119

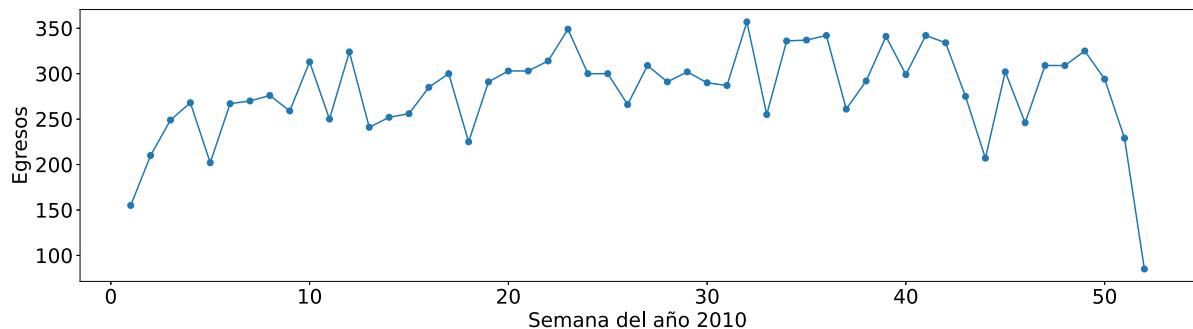


0200

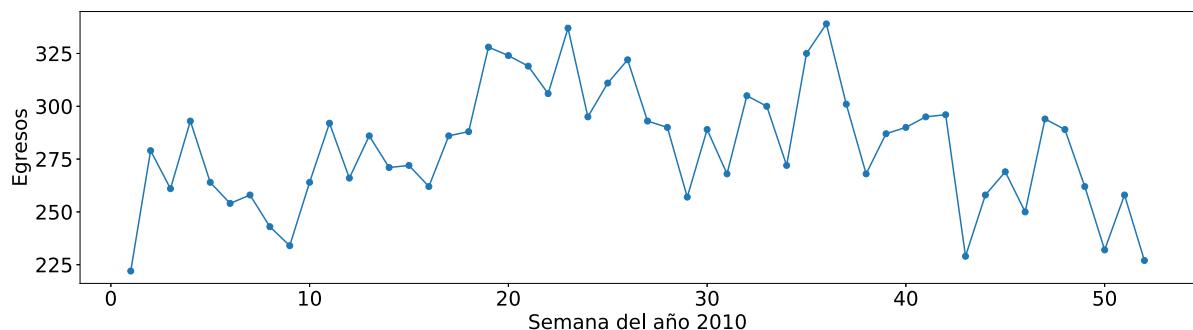
## series\_de\_tiempo\_egresos2



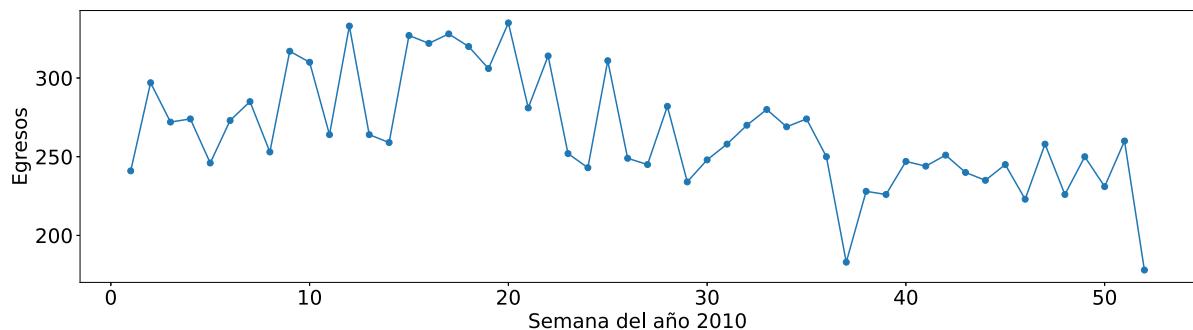
K811



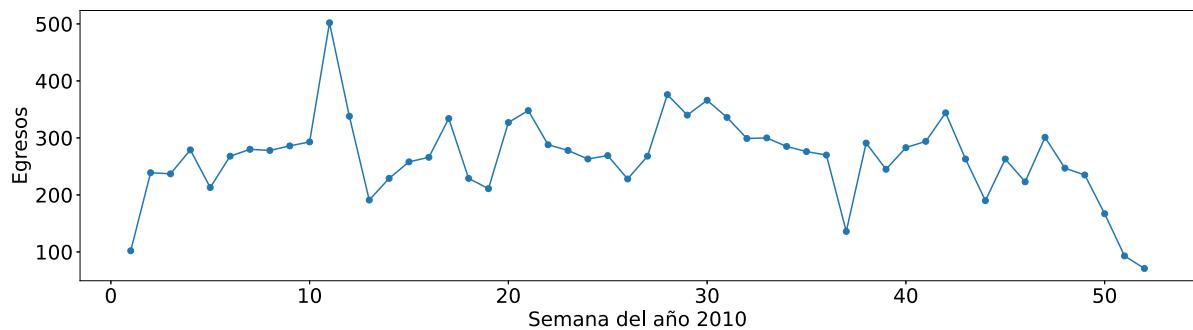
K37X



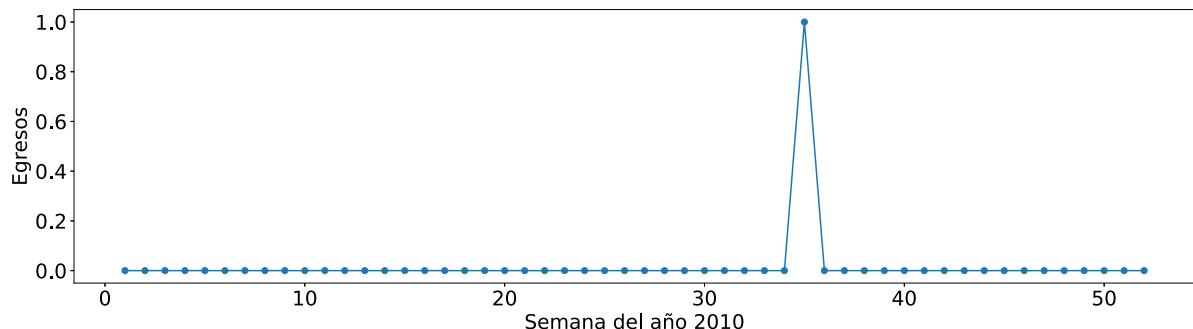
0021



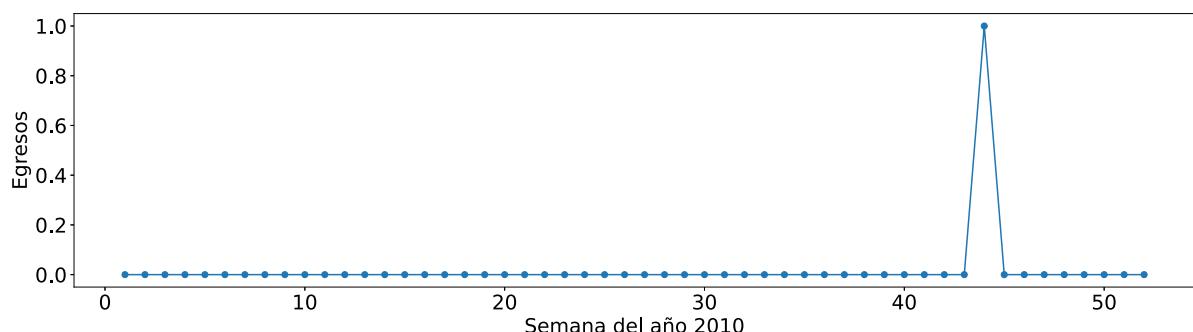
Z302



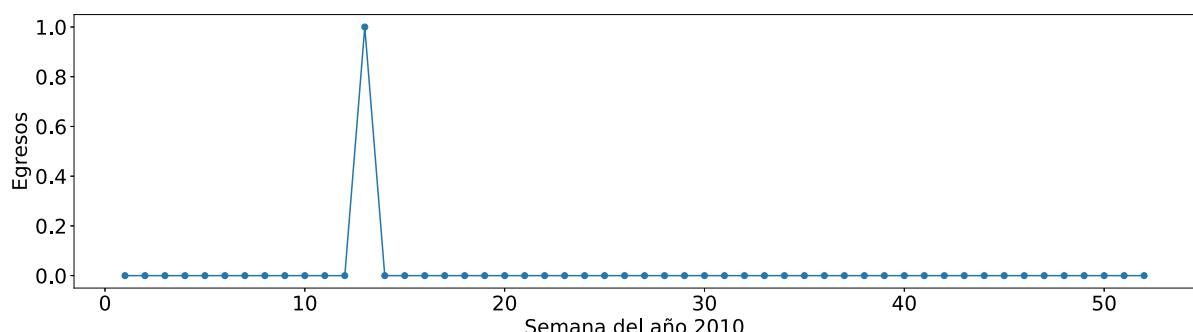
Q779



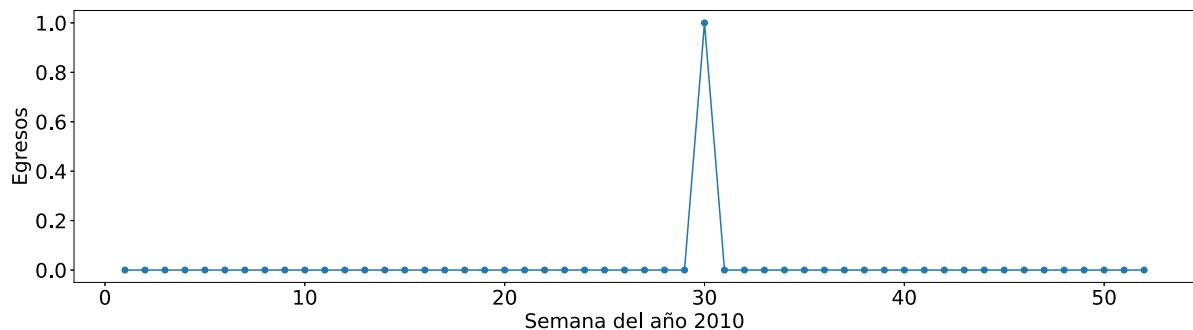
Q160



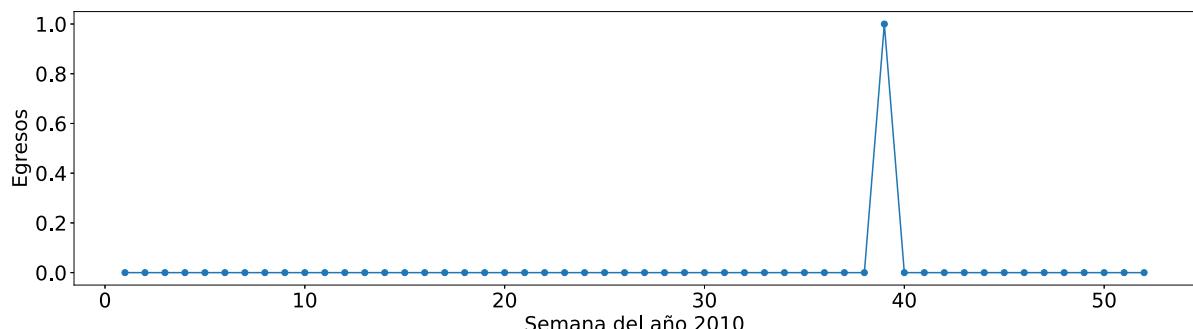
S448



G051



A660

**2011**

In [4]: `import pandas as pd`

```
# Se cargan los datos
columns1 = ['EGRESO', 'DIAG_INI']
dataframe1 = pd.read_csv('EGRESO_2011.csv', usecols=columns1).dropna()
dataframe1
```

Out[4]:

	EGRESO	DIAG_INI
0	22/03/2011	T311
1	22/03/2011	K579
2	22/03/2011	L039
3	04/04/2011	K359
4	05/04/2011	J189
...	...	...
<b>1048567</b>	21/09/2011	I091
<b>1048568</b>	21/09/2011	I350
<b>1048569</b>	22/09/2011	I471
<b>1048570</b>	22/09/2011	I739
<b>1048571</b>	23/09/2011	I258

1048559 rows × 2 columns

```
In [13]: # Se importan las librerias necesarias
from epiweeks import Week, date

# Se convierten los string a objetos datetime en 'dataframe'
strfdtoriginal1 = '%d/%m/%Y'
dataframe1['EGRESO'] = pd.to_datetime(dataframe1['EGRESO'], errors='coerce', format=strfdtoriginal1)
dataframe1 = dataframe1.dropna()
dataframe1 = dataframe1.reset_index(drop=True)

# Se agrega una columna con los numeros de semana
dataframe1['sem'] = ''
nrows1 = len(dataframe1.index)
for i in range(nrows1):
    dfday1 = dataframe1['EGRESO'][i]
    if dfday1.year == 2011:
        mydate1 = date(dfday1.year, dfday1.month, dfday1.day)
        numberweek1 = Week.fromdate(mydate1)
        dataframe1['sem'][i] = numberweek1.week

dataframe1 = dataframe1.dropna()
dataframe1 = dataframe1.reset_index(drop=True)
dataframe1
```

Out[13]:

	EGRESO	DIAG_INI	sem
<b>0</b>	2011-03-22	T311	12
<b>1</b>	2011-03-22	K579	12
<b>2</b>	2011-03-22	L039	12
<b>3</b>	2011-04-04	K359	14
<b>4</b>	2011-04-05	J189	14
...	...	...	...
<b>1048549</b>	2011-09-21	I091	38
<b>1048550</b>	2011-09-21	I350	38
<b>1048551</b>	2011-09-22	I471	38
<b>1048552</b>	2011-09-22	I739	38
<b>1048553</b>	2011-09-23	I258	38

1048554 rows × 3 columns

In [48]: # Se forma el nuevo dataframe 'semanas' con el numero de semana del año y la cantidad de egresos en cada semana

```
semanas1 = dataframe1['sem'].value_counts()
semanas1 = semanas1.drop('', axis = 0)
semanas1 = semanas1.sort_index()
semanas1
```

```
Out[48]: 1    17352
         2    18696
         3    19496
         4    19507
         5    19332
         6    18294
         7    19327
         8    19752
         9    19824
        10   19289
        11   19828
        12   18756
        13   19630
        14   19820
        15   19684
        16   17260
        17   18346
        18   17878
        19   18577
        20   19349
        21   19384
        22   19016
        23   19569
        24   19636
        25   19737
        26   19807
        27   19845
        28   20238
        29   20570
        30   20463
        31   20628
        32   21214
        33   21237
        34   21296
        35   21472
        36   21765
        37   20779
        38   21674
        39   23011
        40   22644
        41   22416
        42   22546
        43   22094
        44   20010
        45   22360
        46   21769
        47   21130
        48   21236
        49   20987
        50   20903
        51   19862
        52   3091
Name: sem, dtype: int64
```

```
In [49]: # Se pasa a un nuevo dataframe
newdf1 = pd.DataFrame()
newdf1['sem'] = semanas1.index
newdf1['casos'] = ''
nr1 = len(newdf1.index)
for i in range (nr1):
    newdf1['casos'][i] = int(semanas1[i+1])
newdf1
```

Out[49]:

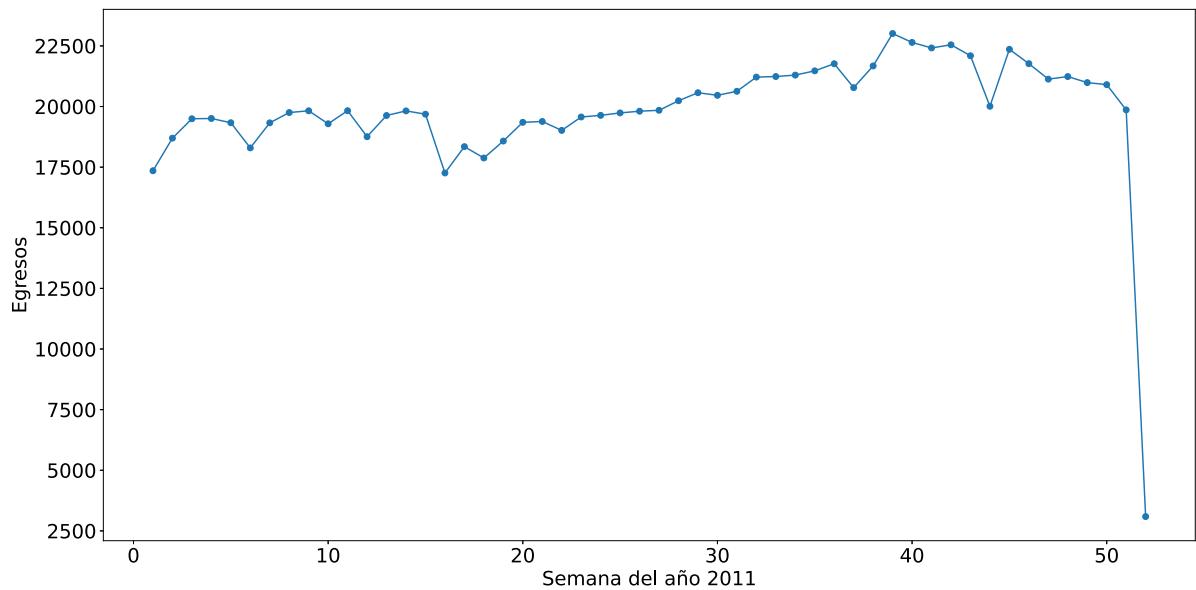
	sem	casos
0	1	17352
1	2	18696
2	3	19496
3	4	19507
4	5	19332
5	6	18294
6	7	19327
7	8	19752
8	9	19824
9	10	19289
10	11	19828
11	12	18756
12	13	19630
13	14	19820
14	15	19684
15	16	17260
16	17	18346
17	18	17878
18	19	18577
19	20	19349
20	21	19384
21	22	19016
22	23	19569
23	24	19636
24	25	19737
25	26	19807
26	27	19845
27	28	20238
28	29	20570
29	30	20463
30	31	20628
31	32	21214
32	33	21237
33	34	21296
34	35	21472

sem	casos
<b>35</b>	36 21765
<b>36</b>	37 20779
<b>37</b>	38 21674
<b>38</b>	39 23011
<b>39</b>	40 22644
<b>40</b>	41 22416
<b>41</b>	42 22546
<b>42</b>	43 22094
<b>43</b>	44 20010
<b>44</b>	45 22360
<b>45</b>	46 21769
<b>46</b>	47 21130
<b>47</b>	48 21236
<b>48</b>	49 20987
<b>49</b>	50 20903
<b>50</b>	51 19862
<b>51</b>	52 3091

```
In [129]: # Se importan las librerías necesarias
import matplotlib.pyplot as plt

año1 = '2011'
print('Egresos ' + año1)
# Se establece el tamaño de la figura
plt.rcParams.update({'font.size': 20})
plt.figure(figsize=(20, 10))
# Se define que se unan los puntos en la gráfica
plt.scatter(semanas1.index, newdf1.casos)
# Se definen las coordenadas 'x' y 'y'
plt.plot(semanas1.index, newdf1.casos)
# Se coloca un título para el eje x
plt.xlabel("Semana del año " + año1)
# Se coloca un título para el eje y
plt.ylabel("Egresos")
# Se guarda la figura como un archivo
plt.savefig(año1 + '/Egresos' + año1 + '.jpg', format='jpg')
# Se muestra la figura en la terminal
plt.show()
```

Egresos 2011



```
In [130]: # Se crea el dataframe 'diagnosticos' con los nombre de los diferentes diagnosticos sin repeticion
diagnosticos1 = dataframe1['DIAG_INI'].value_counts()
# Se ordena del diagnostico con mayore numero de egresos al diagnostico con menor numero de egresos
diagnosticos1 = diagnosticos1.sort_values(ascending = False)
# Se crea el dataframe 'cie' con los nombres de los diagnosticos, los numeros de las semanas, y la cantidad de diagnosticos de dicha enfermedad en cada semana
cie1 = dataframe1.groupby(['DIAG_INI', 'sem']).count()

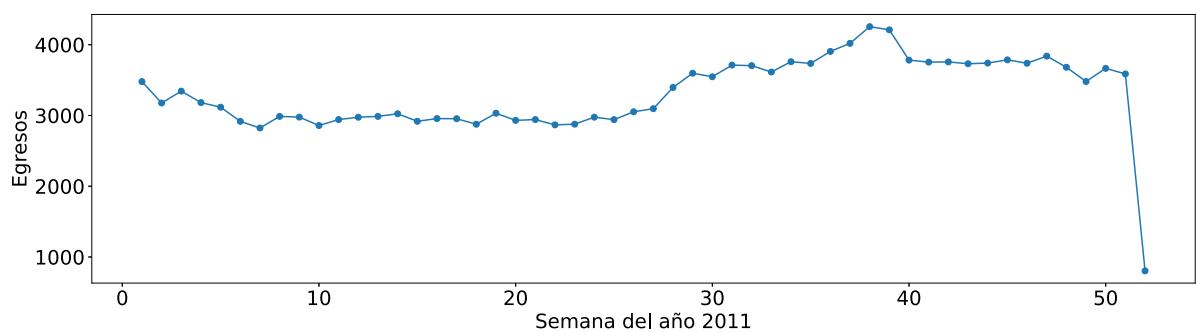
# Se importa la libreria necesaria para la figura
import matplotlib.pyplot as plt

plt.rcParams.update({'font.size': 20})

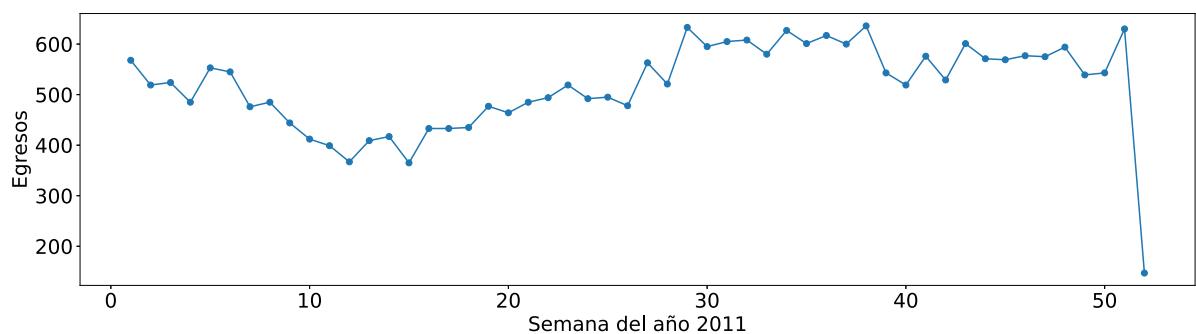
print('Año ' + año1 + '\n')
# Se inicia un contador para controlar la cantidad de graficos a generar
i1 = 0
ndiagnosticos1 = len(diagnosticos1.index)
maximo1 = ndiagnosticos1-5
# Proceso de generación de las figuras
for name1 in diagnosticos1.index:
    if i1 < 25 or i1 >= maximo1:
        y1 = []
        for index1 in semanas1.index:
            try:
                y1.append(cie1['EGRESO'][name1, index1])
            except:
                y1.append(0)
        print('\n' + name1)
        plt.figure(figsize=(20, 5))
        plt.scatter(semanas1.index, y1)
        plt.plot(semanas1.index, y1)
        plt.xlabel("Semana del año " + año1)
        plt.ylabel("Egresos")
        plt.savefig(año1 + '/' + name1 + '_' + año1 + '.jpg', format='jpg')
        plt.show()
    i1 = i1+1
```

Año 2011

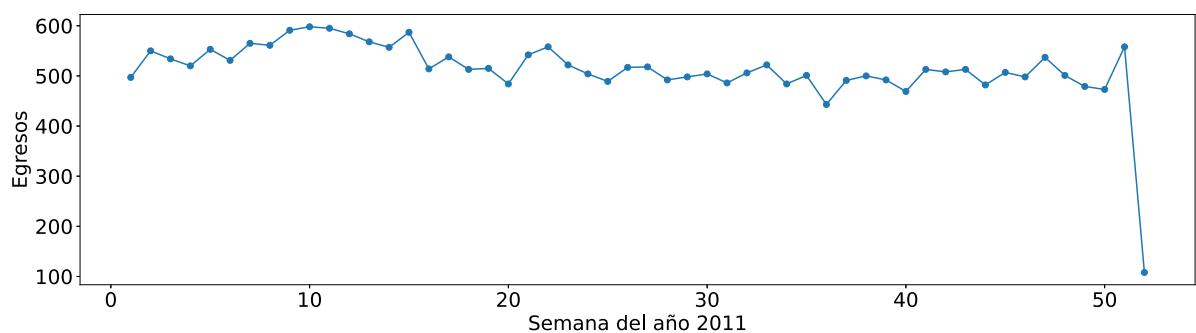
0809



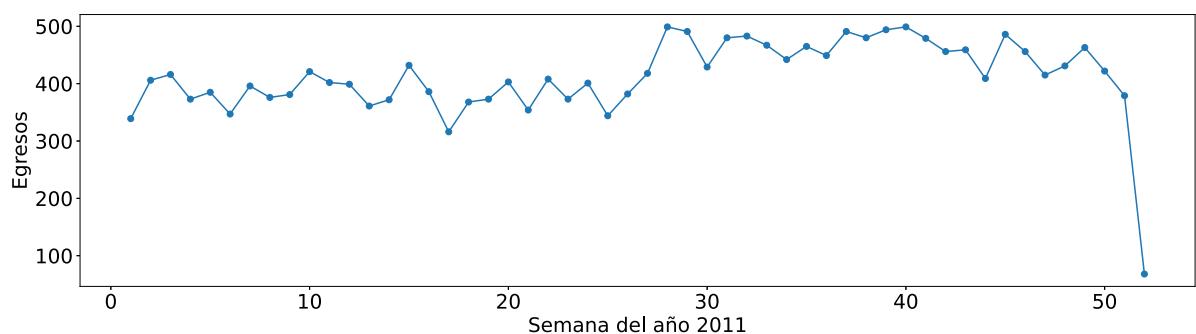
0800



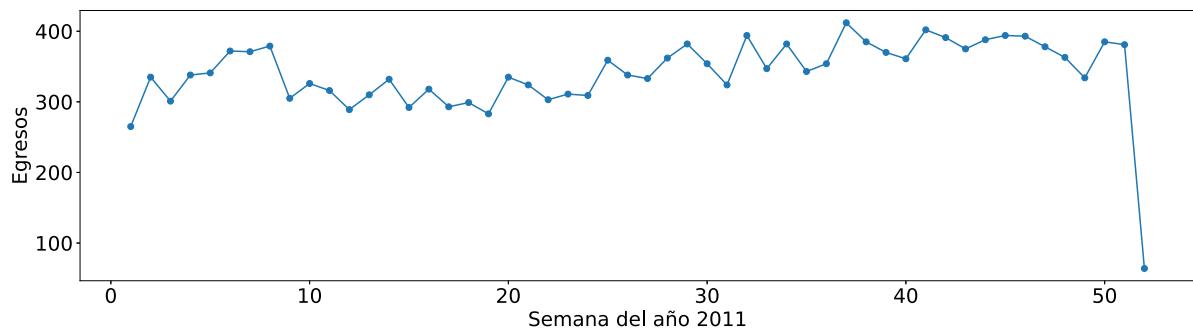
0064



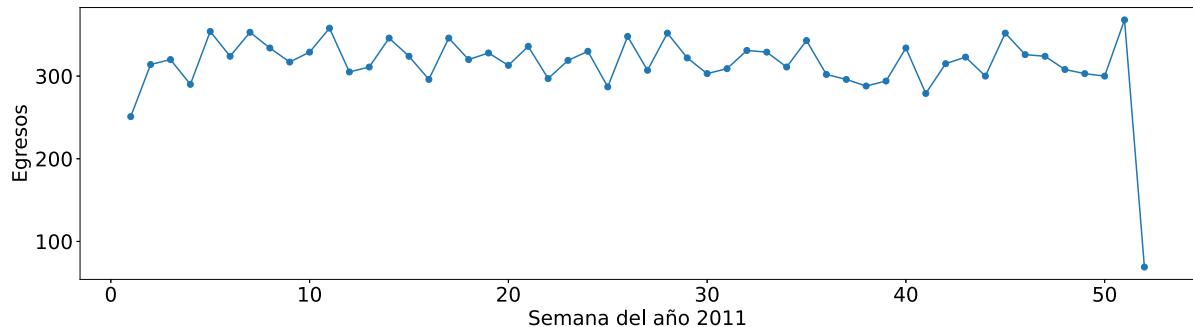
0342



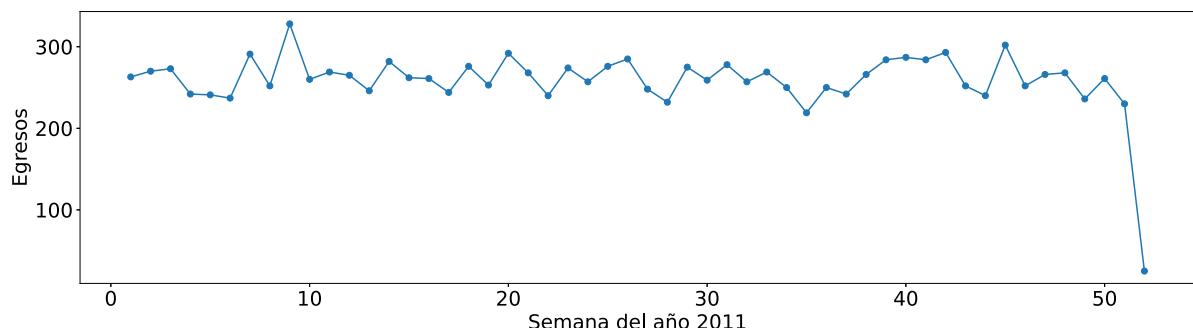
0829



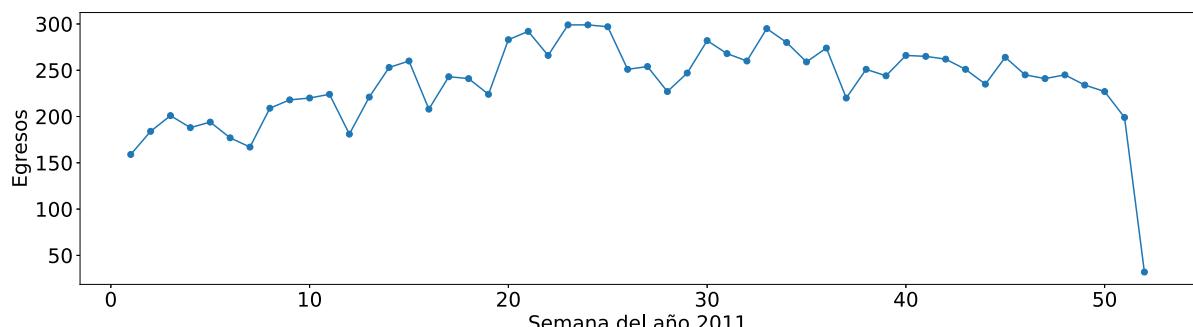
N189



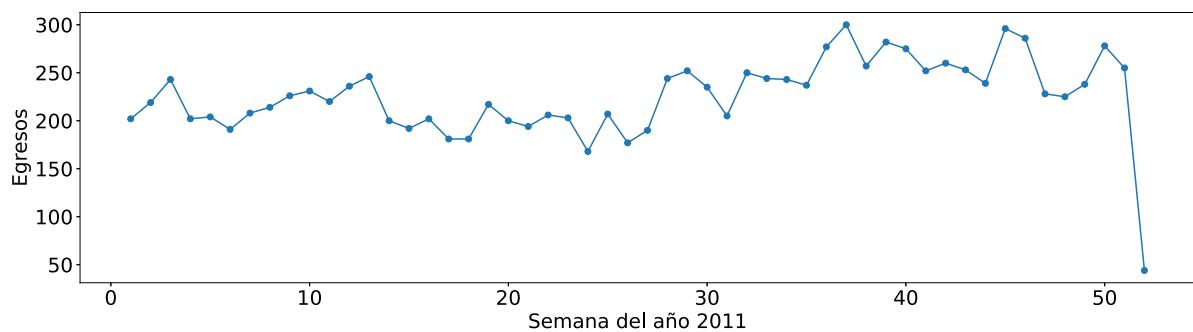
N180



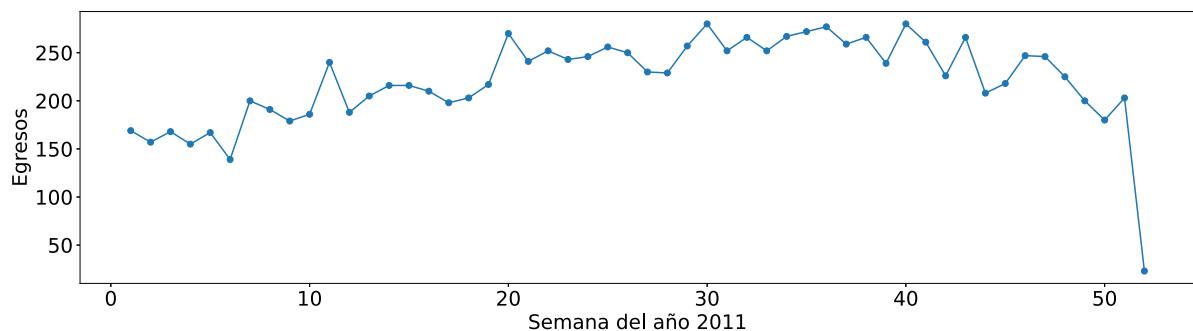
K359



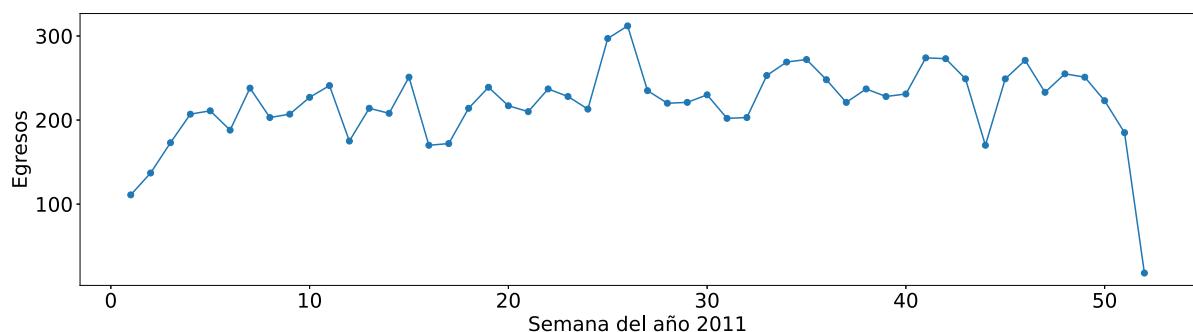
0339



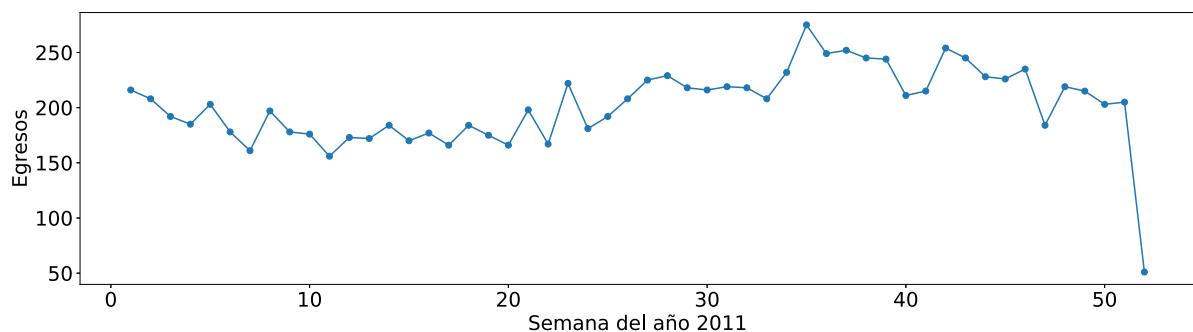
0470



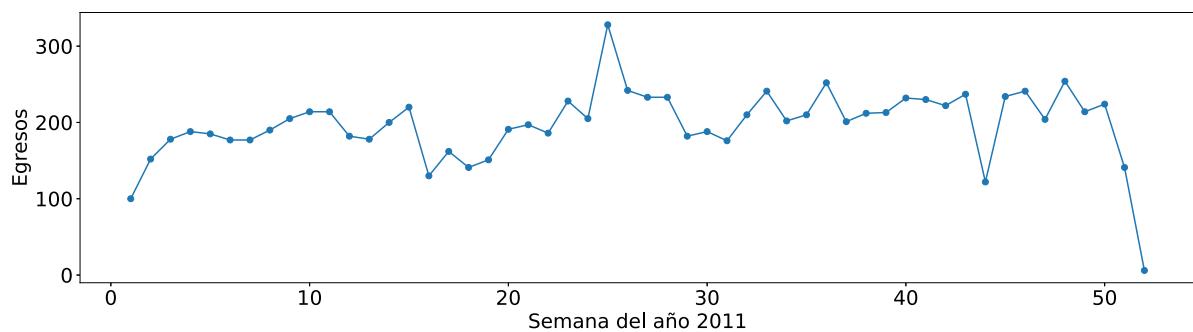
K801



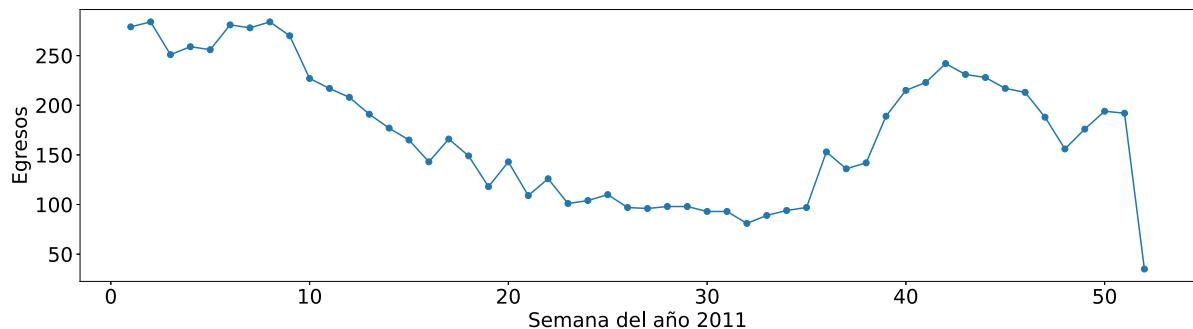
0429



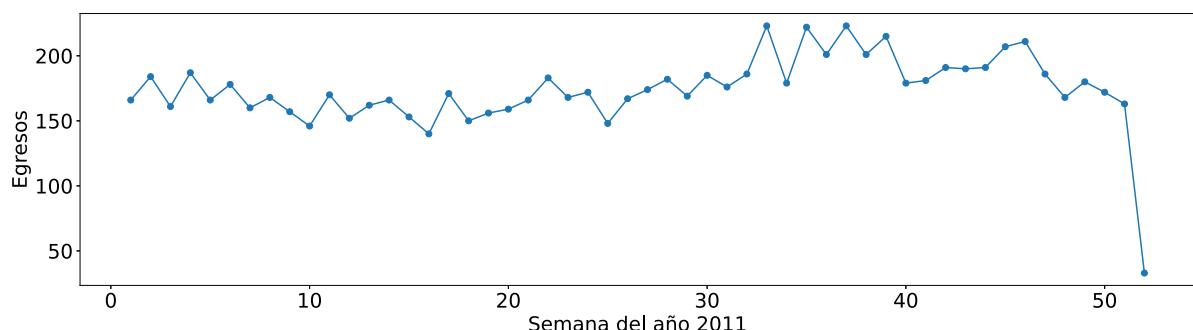
K409



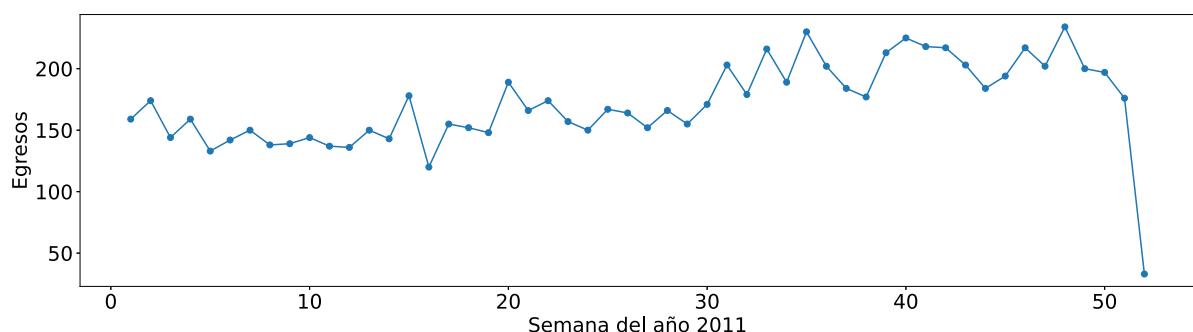
J189



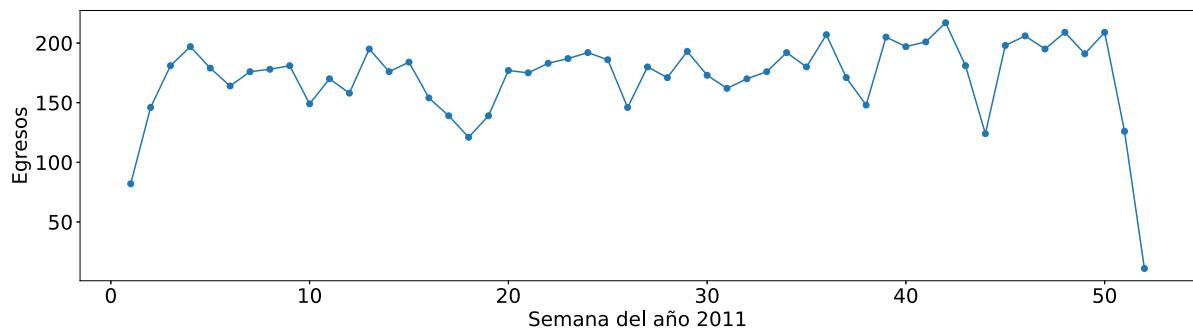
013X



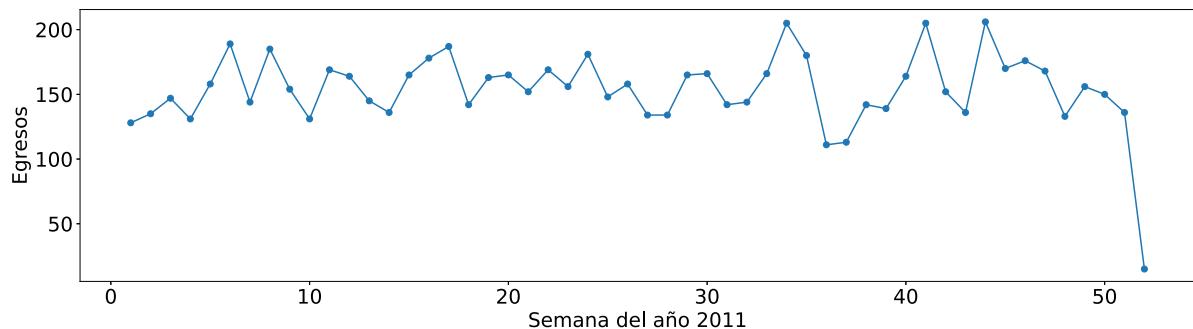
0410



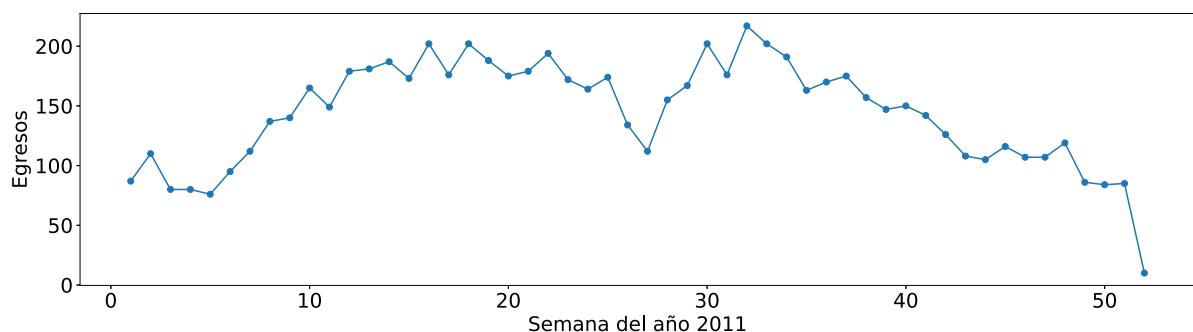
D259



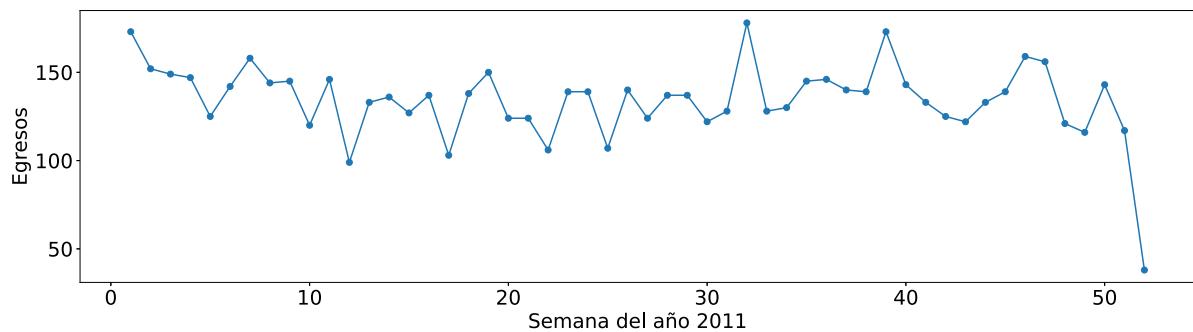
E119



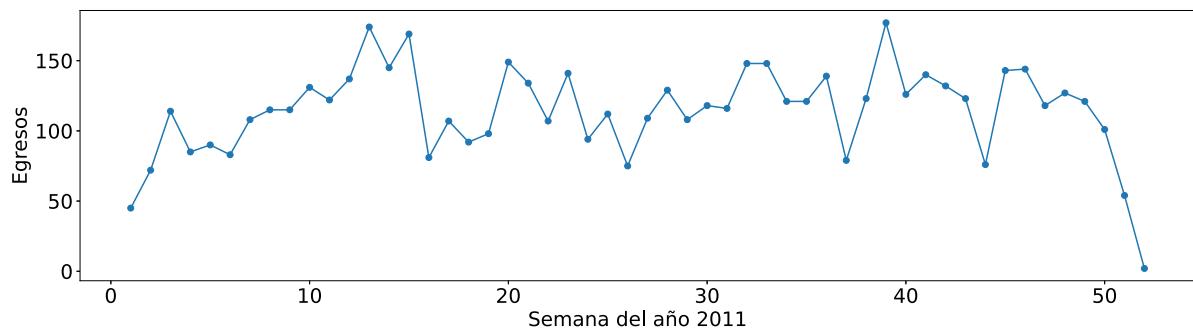
A09X



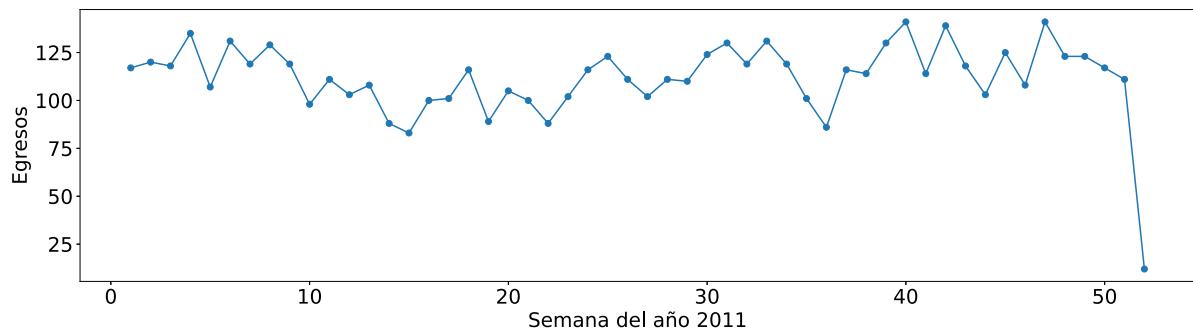
0335



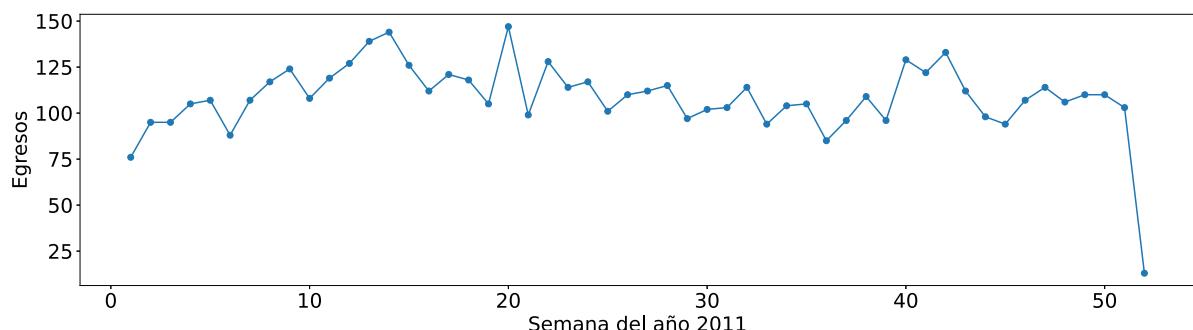
Z302



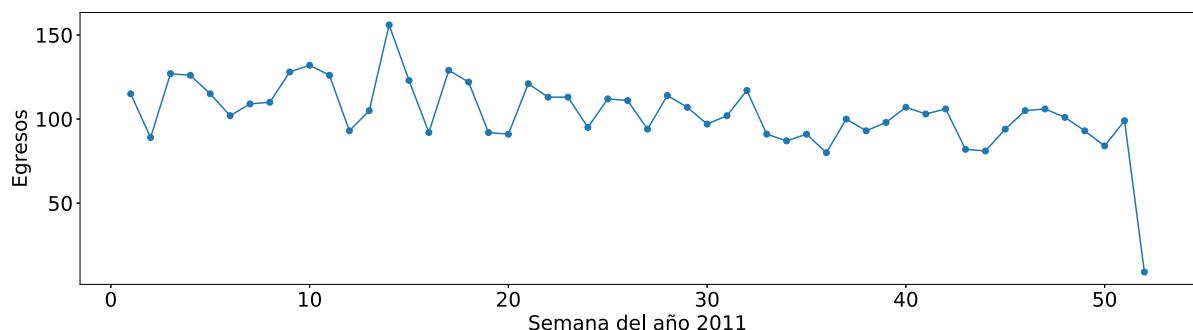
P073



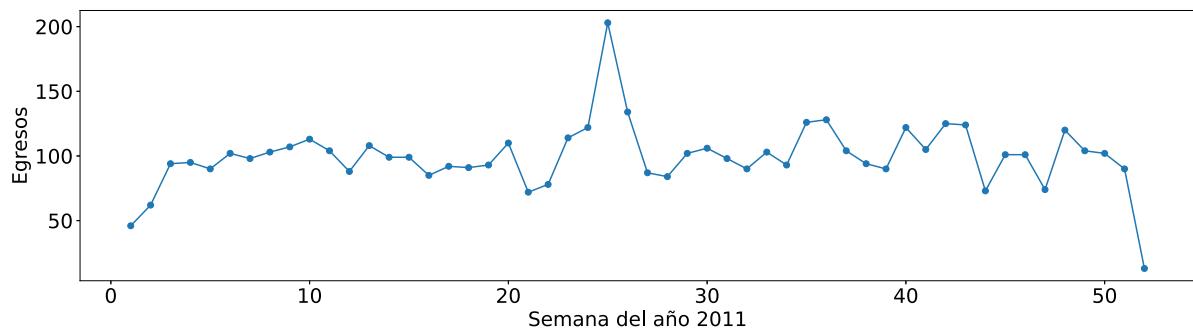
0200



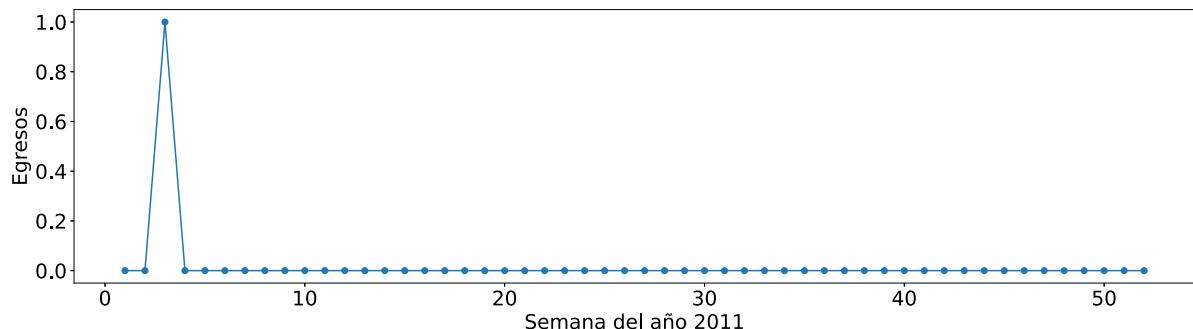
0021



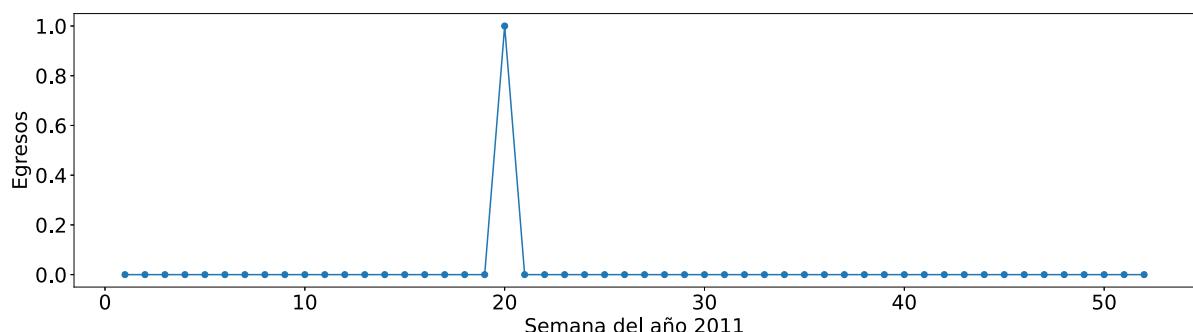
K811



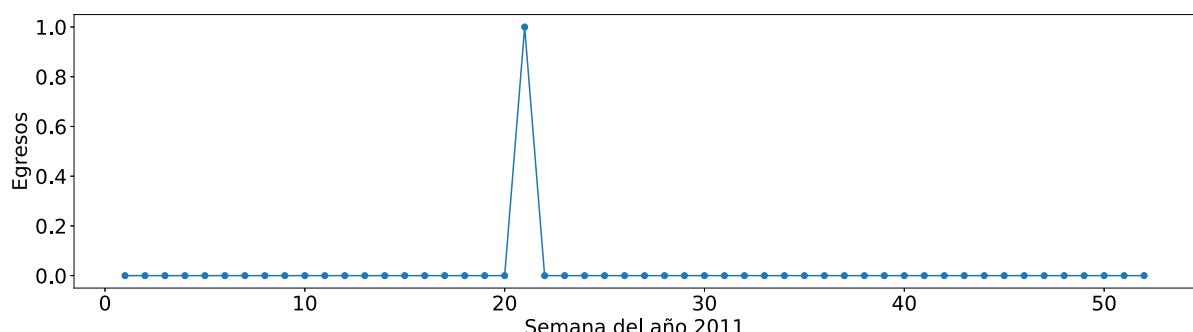
K143



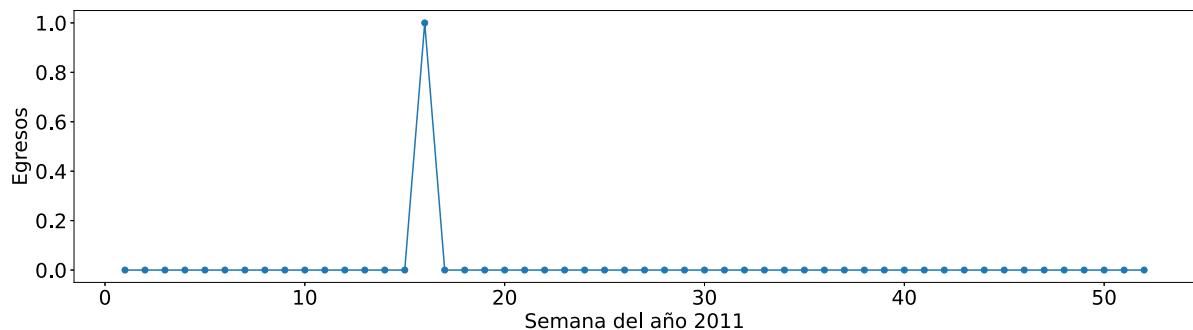
T406



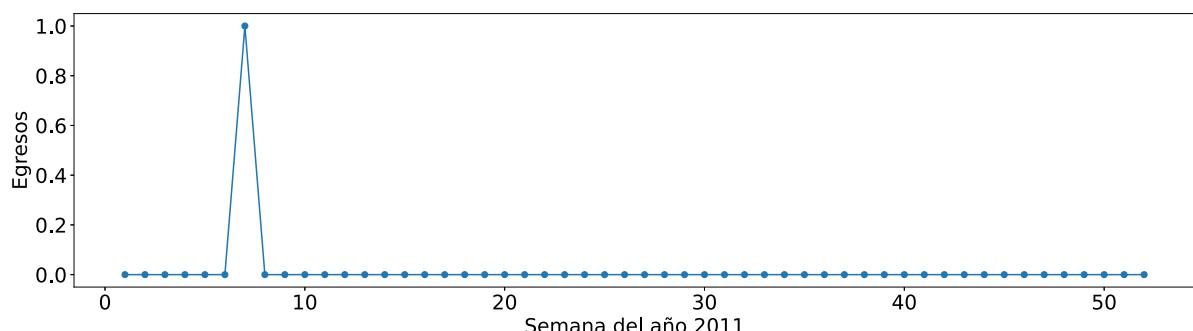
A240



0872



Z350

**2012**

In [5]: `import pandas as pd`

```
# Se cargan los datos
columns2 = ['EGRESO', 'DIAG_INI']
dataframe2 = pd.read_csv('EGRESO_2012.csv', usecols=columns2).dropna()
dataframe2
```

Out[5]:

	EGRESO	DIAG_INI
0	31/01/2012	N879
1	31/01/2012	O829
2	30/01/2012	O809
3	29/01/2012	O600
4	27/01/2012	O809
...	...	...
<b>1048570</b>	20/08/2012	C509
<b>1048571</b>	20/08/2012	C509
<b>1048572</b>	20/08/2012	C509
<b>1048573</b>	20/08/2012	C504
<b>1048574</b>	20/08/2012	C349

1048553 rows × 2 columns

```
In [14]: # Se importan las librerias necesarias
from epiweeks import Week, date

# Se convierten los string a objetos datetime en 'dataframe'
strfdtoriginal2 = '%d/%m/%Y'
dataframe2['EGRESO'] = pd.to_datetime(dataframe2['EGRESO'], errors='coerce', f
ormat=strfdtoriginal2)
dataframe2 = dataframe2.dropna()
dataframe2 = dataframe2.reset_index(drop=True)

# Se agrega una columna con los numeros de semana
dataframe2['sem'] = ''
nrows2 = len(dataframe2.index)
for i in range(nrows2):
    dfday2 = dataframe2['EGRESO'][i]
    if dfday2.year == 2012:
        mydate2 = date(dfday2.year, dfday2.month, dfday2.day)
        numberweek2 = Week.fromdate(mydate2)
        dataframe2['sem'][i] = numberweek2.week

dataframe2 = dataframe2.dropna()
dataframe2 = dataframe2.reset_index(drop=True)
dataframe2
```

Out[14]:

	EGRESO	DIAG_INI	sem
<b>0</b>	2012-01-31	N879	5
<b>1</b>	2012-01-31	O829	5
<b>2</b>	2012-01-30	O809	5
<b>3</b>	2012-01-29	O600	5
<b>4</b>	2012-01-27	O809	4
...	...	...	...
<b>1048539</b>	2012-08-20	C509	34
<b>1048540</b>	2012-08-20	C509	34
<b>1048541</b>	2012-08-20	C509	34
<b>1048542</b>	2012-08-20	C504	34
<b>1048543</b>	2012-08-20	C349	34

1048544 rows × 3 columns

In [52]: # Se forma el nuevo dataframe 'semanas' con el numero de semana del año y la cantidad de egresos en cada semana

```
semanas2 = dataframe2['sem'].value_counts()
semanas2 = semanas2.drop('', axis = 0)
semanas2 = semanas2.sort_index()
semanas2
```

```
Out[52]: 1    18779
         2    21239
         3    21814
         4    21843
         5    21599
         6    20500
         7    21971
         8    21587
         9    22496
        10   22702
        11   22764
        12   21001
        13   22828
        14   20586
        15   21345
        16   22002
        17   22369
        18   21219
        19   22078
        20   22397
        21   22780
        22   22819
        23   22913
        24   22732
        25   22251
        26   19190
        27   18462
        28   18710
        29   18718
        30   18512
        31   18944
        32   18725
        33   18393
        34   18694
        35   19395
        36   19720
        37   19381
        38   18956
        39   19045
        40   18645
        41   18980
        42   18468
        43   18446
        44   17378
        45   17753
        46   18327
        47   16771
        48   18050
        49   17672
        50   17094
        51   16777
        52   5539
Name: sem, dtype: int64
```

```
In [53]: # Se pasa a un nuevo dataframe
newdf2 = pd.DataFrame()
newdf2['sem'] = semanas2.index
newdf2['casos'] = ''
nr2 = len(newdf2.index)
for i in range (nr2):
    newdf2['casos'][i] = int(semanas2[i+1])
newdf2
```

Out[53]:

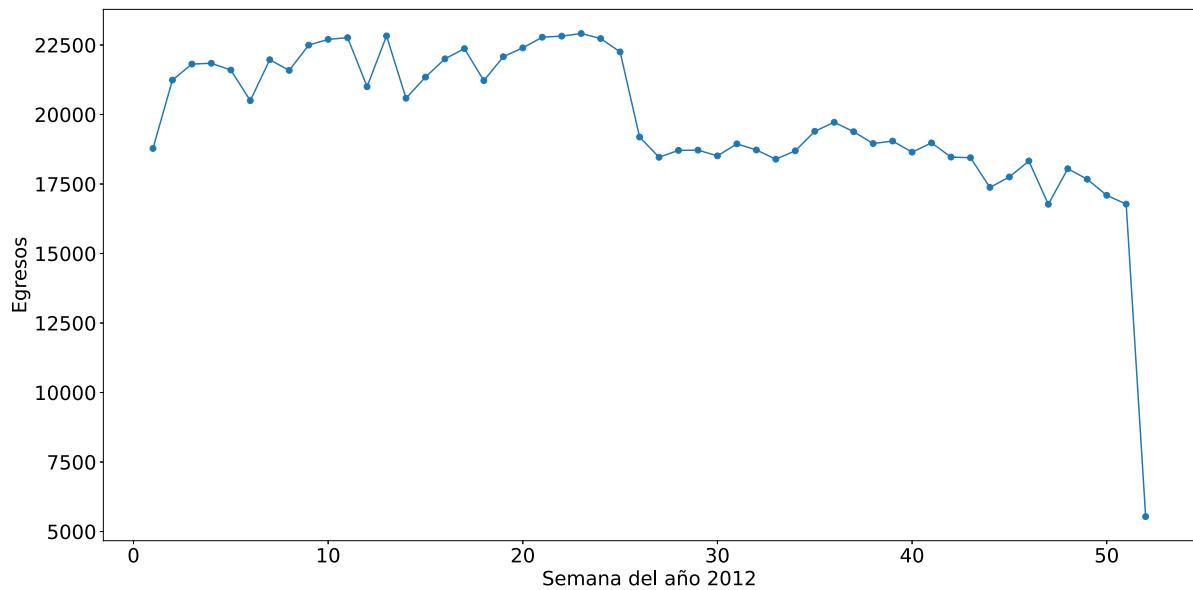
	sem	casos
0	1	18779
1	2	21239
2	3	21814
3	4	21843
4	5	21599
5	6	20500
6	7	21971
7	8	21587
8	9	22496
9	10	22702
10	11	22764
11	12	21001
12	13	22828
13	14	20586
14	15	21345
15	16	22002
16	17	22369
17	18	21219
18	19	22078
19	20	22397
20	21	22780
21	22	22819
22	23	22913
23	24	22732
24	25	22251
25	26	19190
26	27	18462
27	28	18710
28	29	18718
29	30	18512
30	31	18944
31	32	18725
32	33	18393
33	34	18694
34	35	19395

sem	casos
<b>35</b>	36 19720
<b>36</b>	37 19381
<b>37</b>	38 18956
<b>38</b>	39 19045
<b>39</b>	40 18645
<b>40</b>	41 18980
<b>41</b>	42 18468
<b>42</b>	43 18446
<b>43</b>	44 17378
<b>44</b>	45 17753
<b>45</b>	46 18327
<b>46</b>	47 16771
<b>47</b>	48 18050
<b>48</b>	49 17672
<b>49</b>	50 17094
<b>50</b>	51 16777
<b>51</b>	52 5539

```
In [131]: # Se importan las librerías necesarias
import matplotlib.pyplot as plt

año2 = '2012'
print('Egresos ' + año2)
# Se establece el tamaño de la figura
plt.rcParams.update({'font.size': 20})
plt.figure(figsize=(20, 10))
# Se define que se unan los puntos en la gráfica
plt.scatter(semanas2.index, newdf2.casos)
# Se definen las coordenadas 'x' y 'y'
plt.plot(semanas2.index, newdf2.casos)
# Se coloca un título para el eje x
plt.xlabel("Semana del año " + año2)
# Se coloca un título para el eje y
plt.ylabel("Egresos")
# Se guarda la figura como un archivo
plt.savefig(año2 + '/Egresos' + año2 + '.jpg', format='jpg')
# Se muestra la figura en la terminal
plt.show()
```

Egresos 2012



```
In [132]: # Se crea el dataframe 'diagnosticos' con los nombre de los diferentes diagnosticos sin repeticion
diagnosticos2 = dataframe2['DIAG_INI'].value_counts()
# Se ordena del diagnostico con mayore numero de egresos al diagnostico con menor numero de egresos
diagnosticos2 = diagnosticos2.sort_values(ascending = False)
# Se crea el dataframe 'cie' con los nombres de los diagnosticos, los numeros de las semanas, y la cantidad de diagnosticos de dicha enfermedad en cada semana
cie2 = dataframe2.groupby(['DIAG_INI', 'sem']).count()

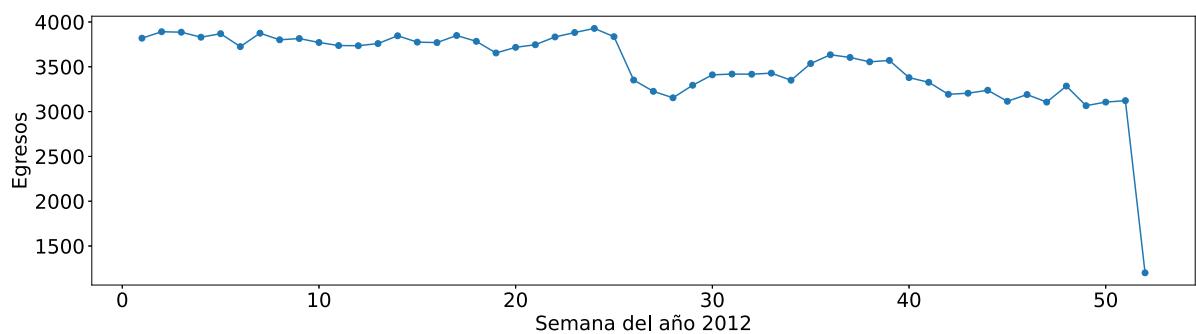
# Se importa la libreria necesaria para la figura
import matplotlib.pyplot as plt

plt.rcParams.update({'font.size': 20})

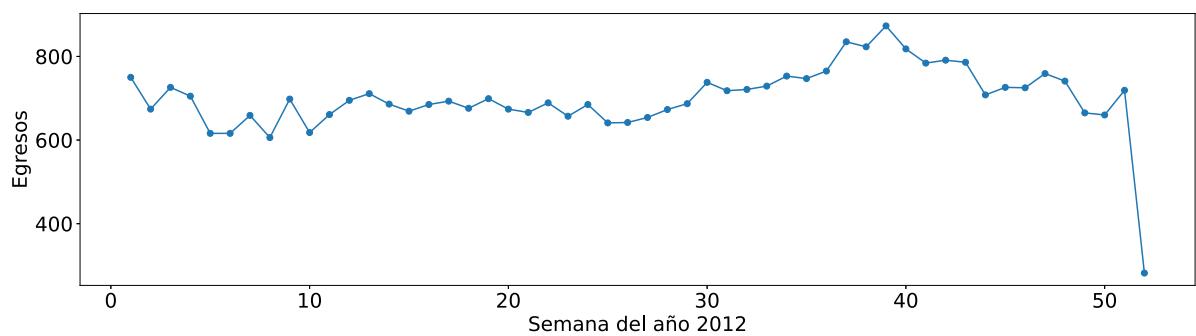
print('Año ' + año2 + '\n')
# Se inicia un contador para controlar la cantidad de graficos a generar
i2 = 0
ndiagnosticos2 = len(diagnosticos2.index)
maximo2 = ndiagnosticos2-5
# Proceso de generación de las figuras
for name2 in diagnosticos2.index:
    if i2 < 25 or i2 >= maximo2:
        y2 = []
        for index2 in semanas2.index:
            try:
                y2.append(cie2['EGRESO'][name2, index2])
            except:
                y2.append(0)
        print('\n' + name2)
        plt.figure(figsize=(20, 5))
        plt.scatter(semanas2.index, y2)
        plt.plot(semanas2.index, y2)
        plt.xlabel("Semana del año " + año2)
        plt.ylabel("Egresos")
        plt.savefig(año2 + '/' + name2 + '_' + año2 + '.jpg', format='jpg')
        plt.show()
    i2 = i2+1
```

Año 2012

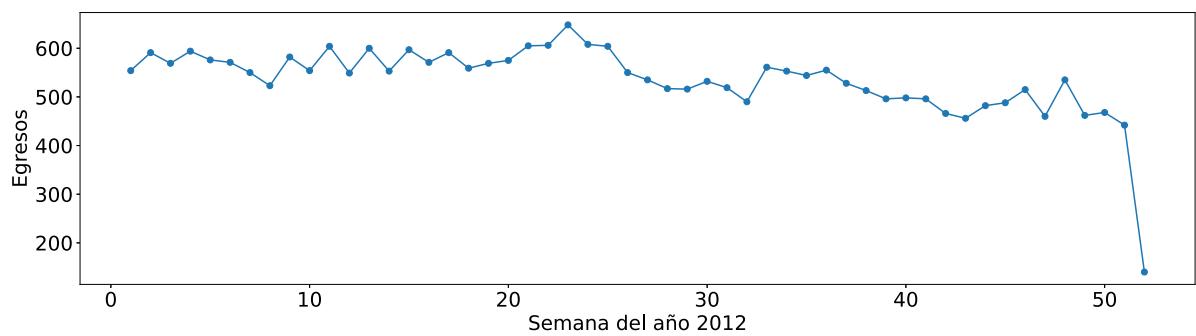
0809



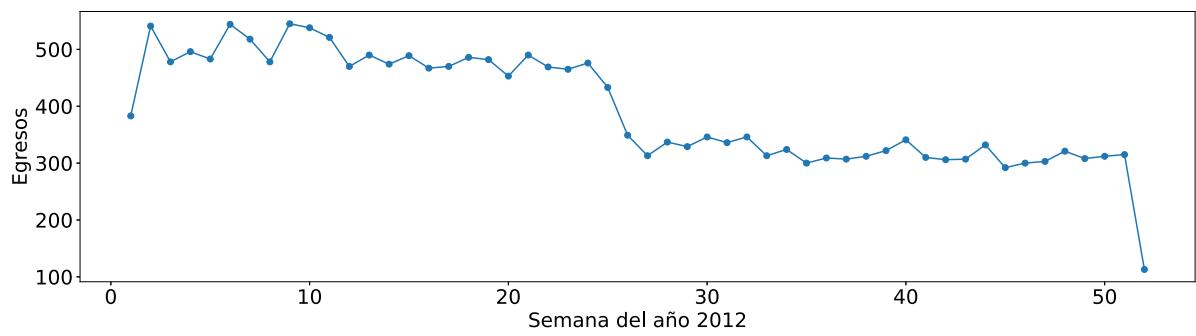
0800



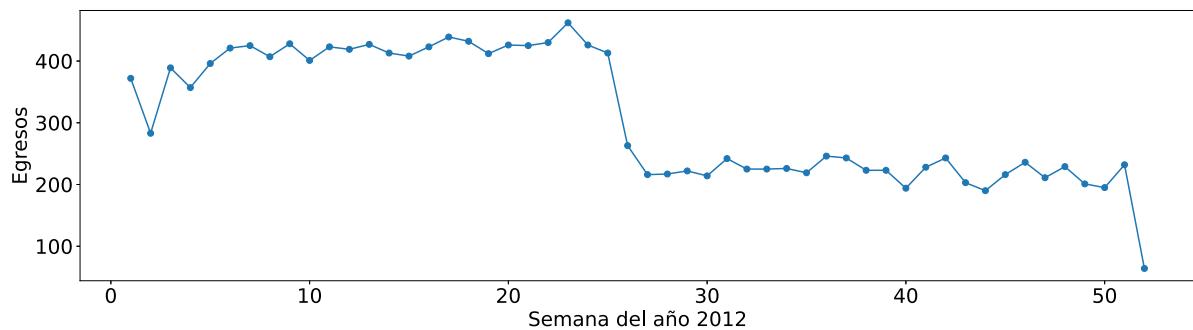
0829



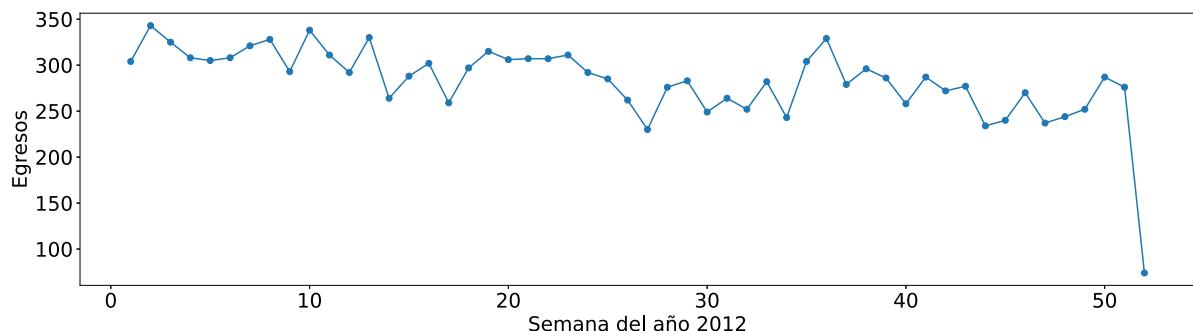
0064



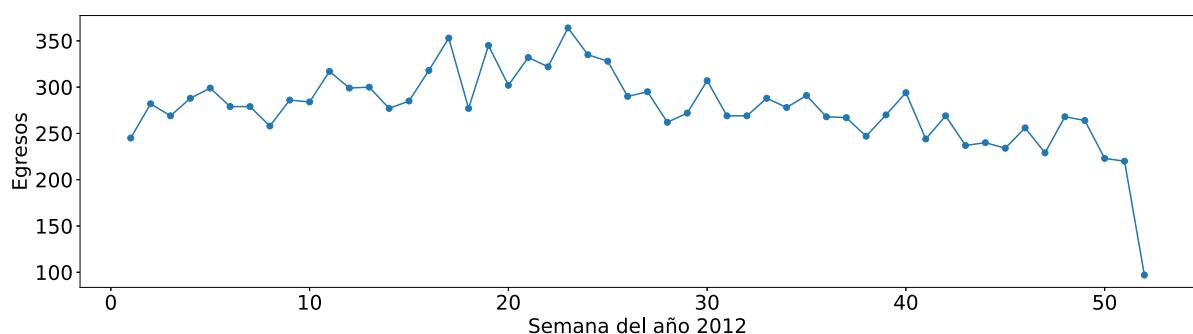
N189



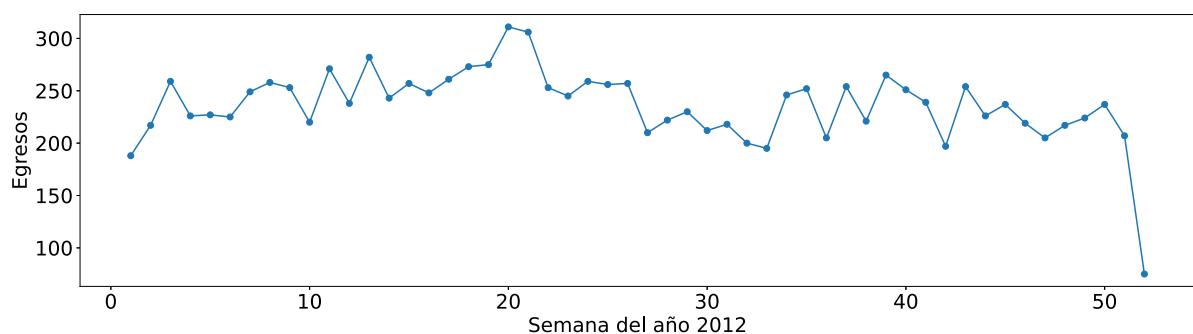
0342



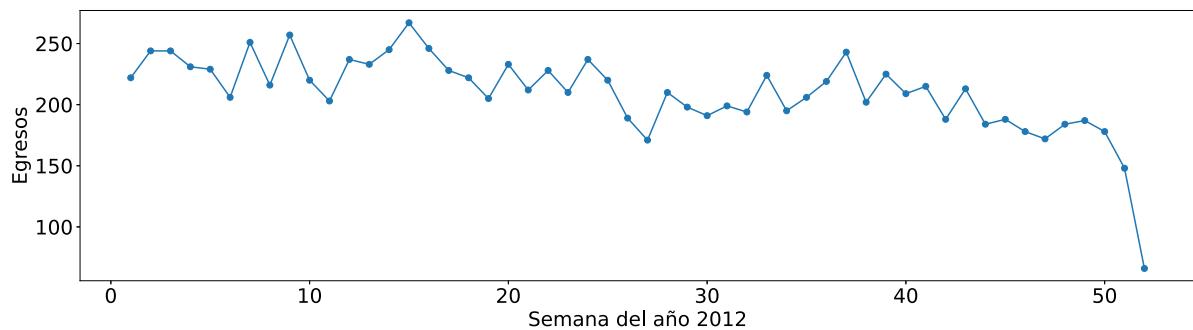
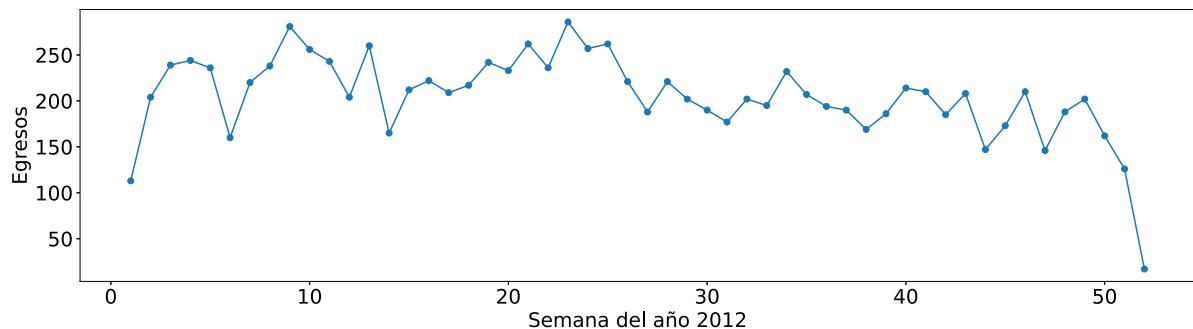
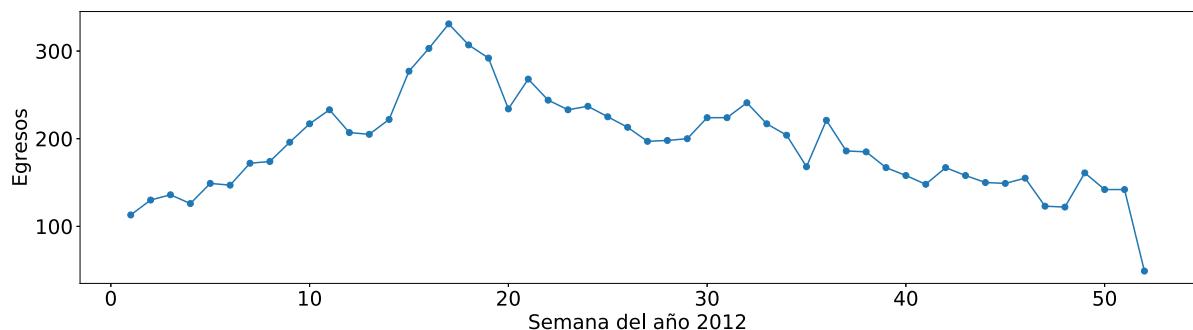
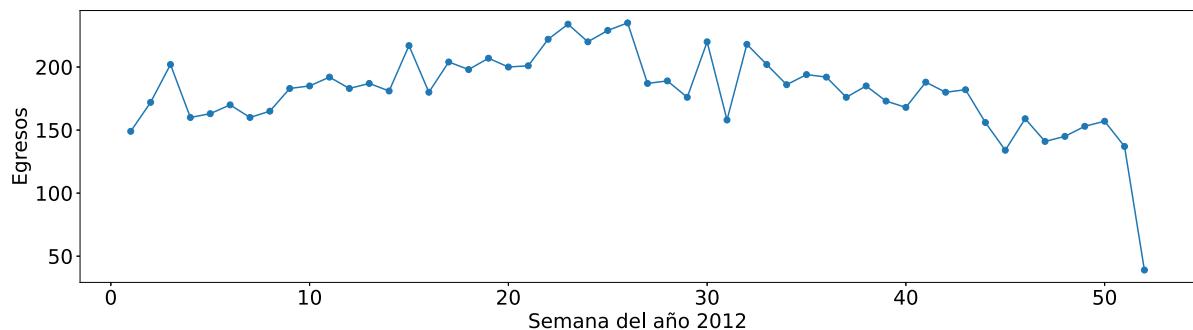
K359

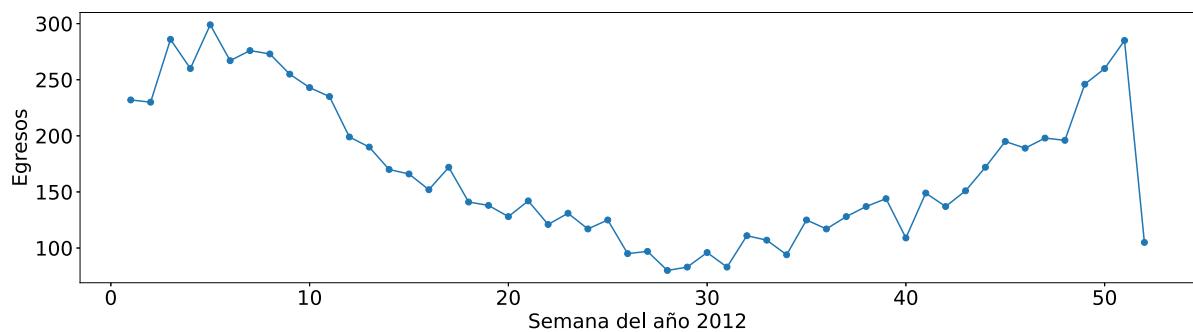


0339

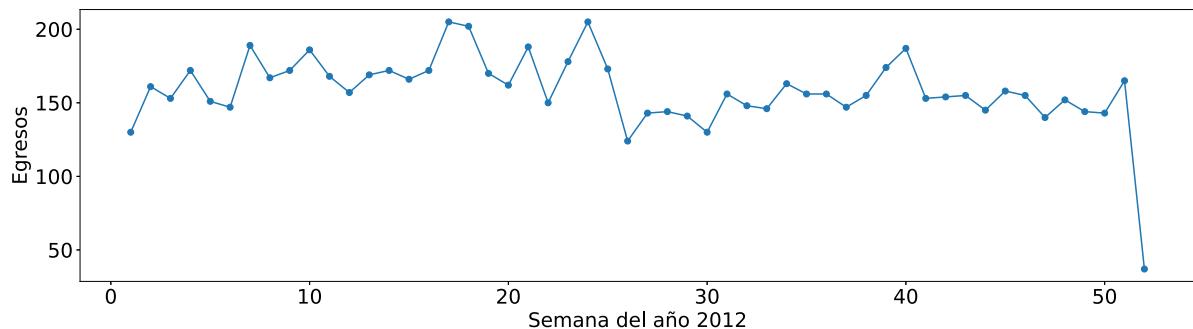


0429

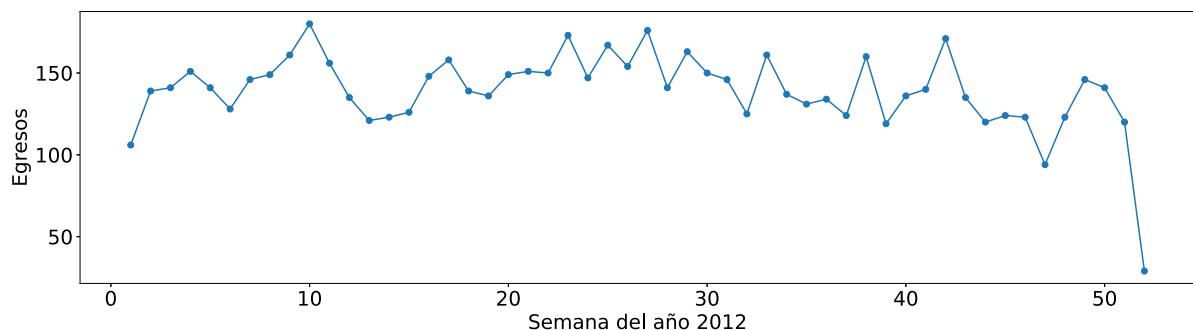
**K409****A09X****0470****J189**



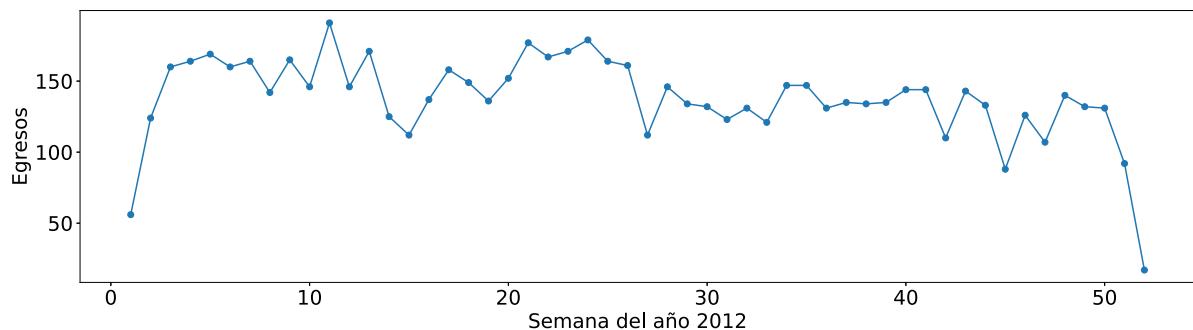
0410



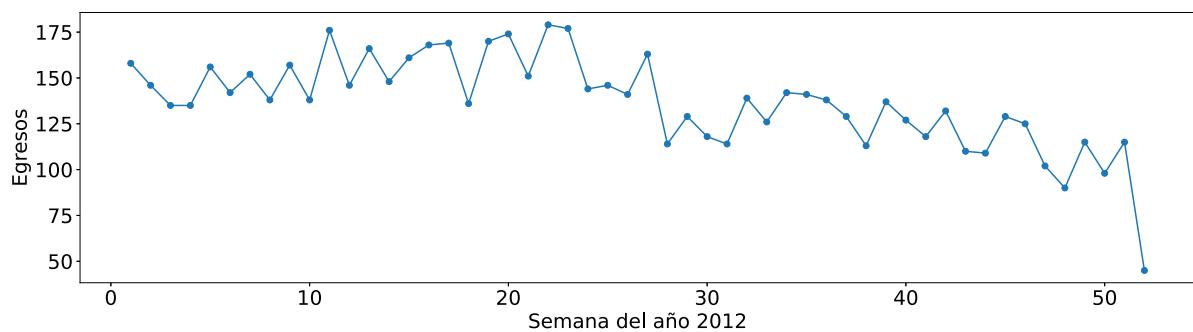
R69X



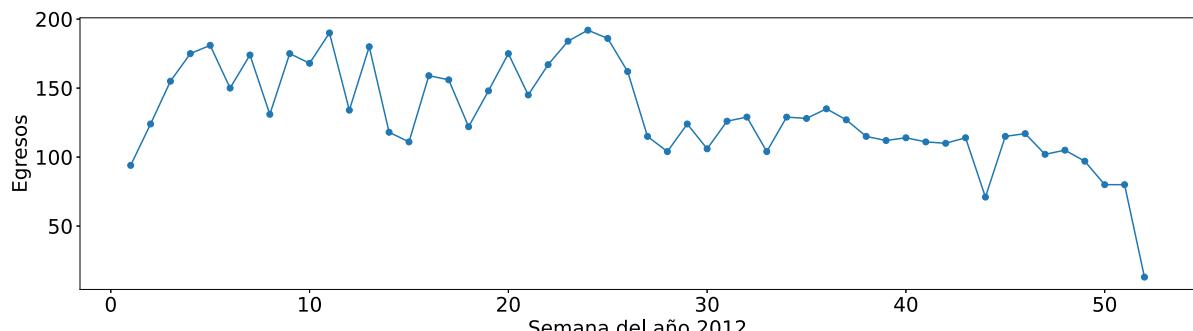
D259



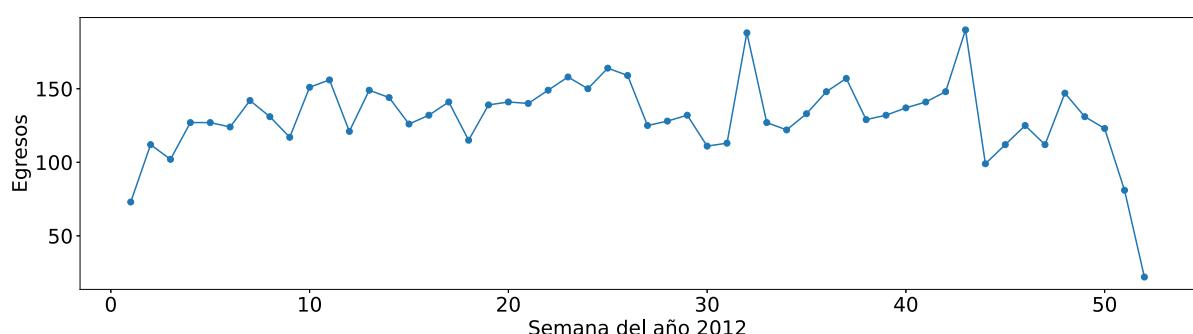
P073



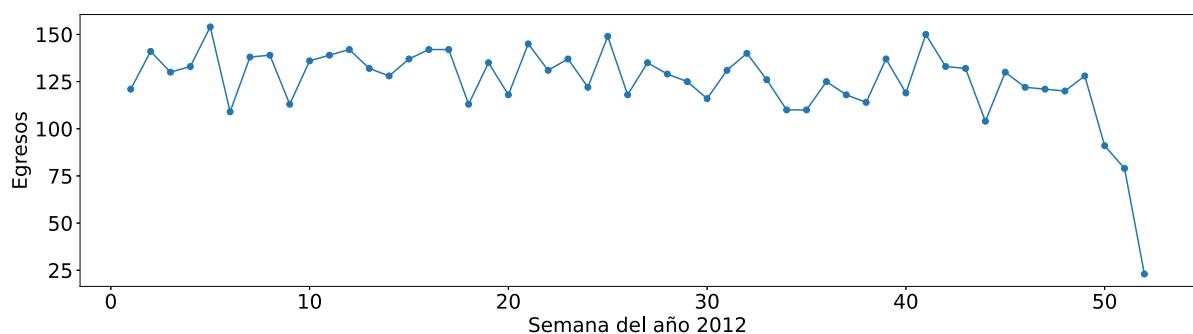
K802



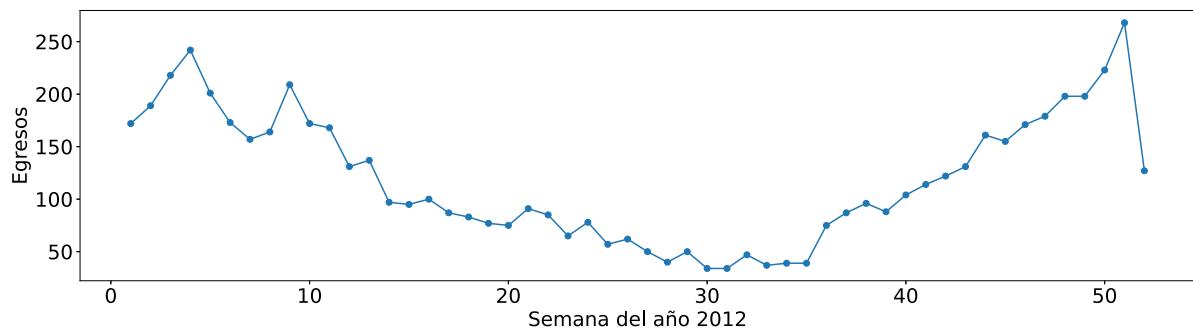
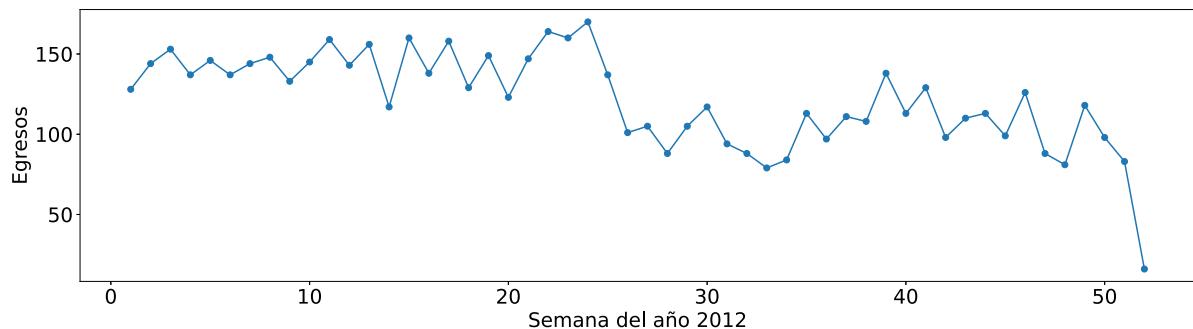
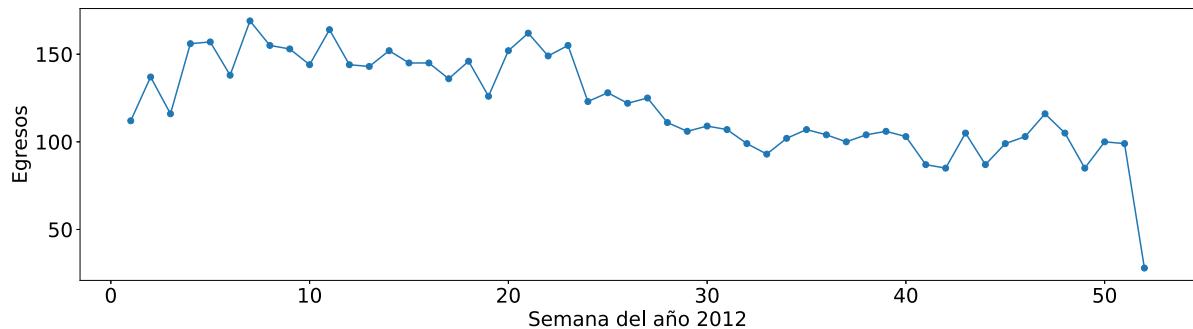
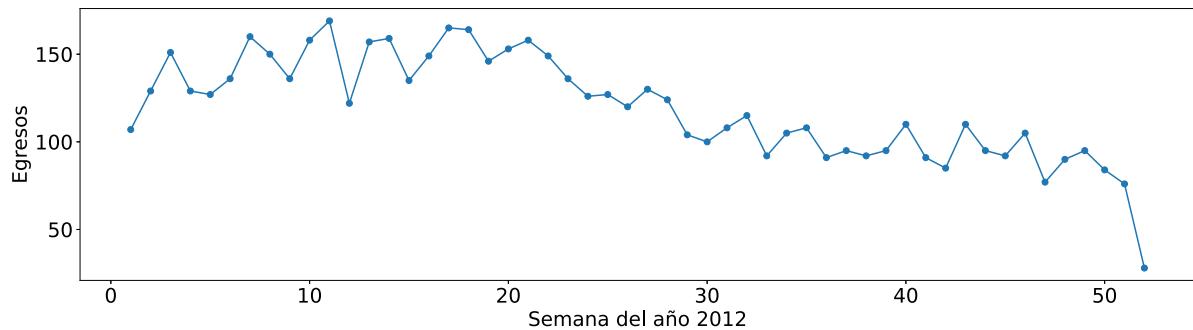
K811

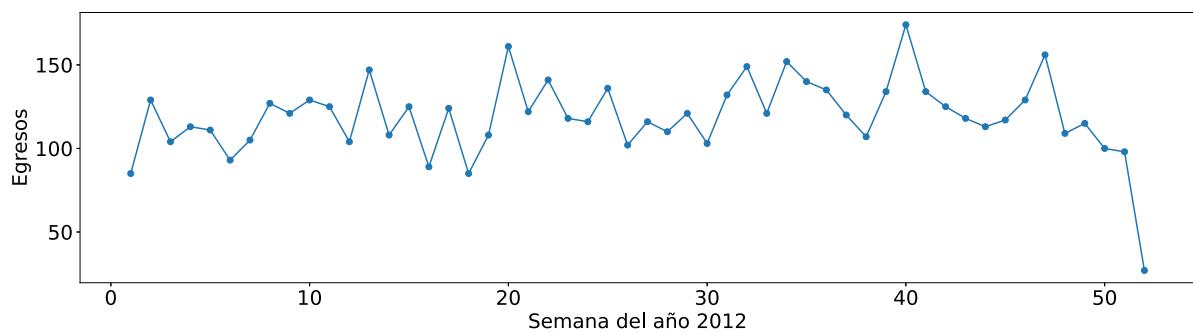


0820

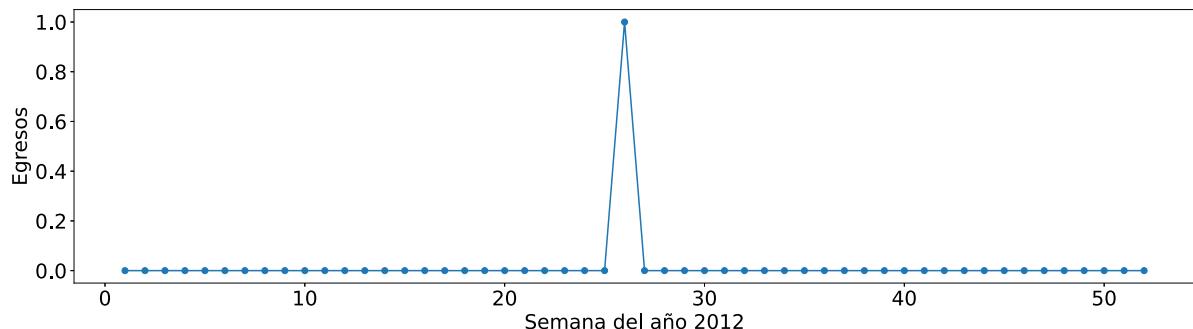


J219

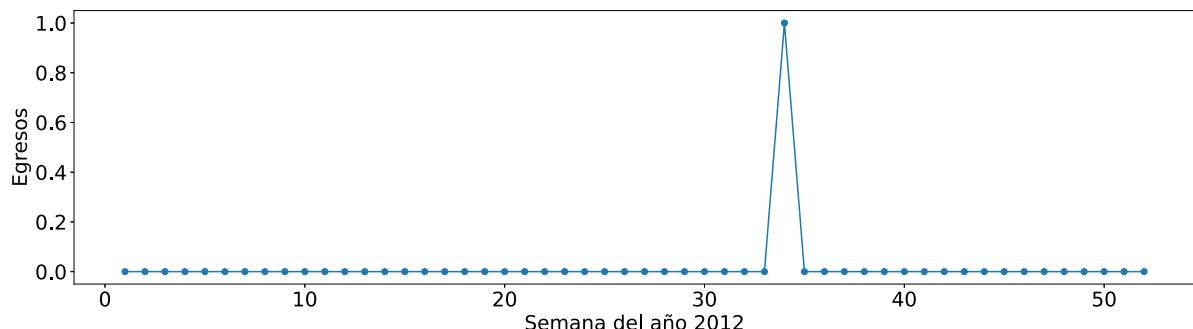
**N180****0021****0200****K801**



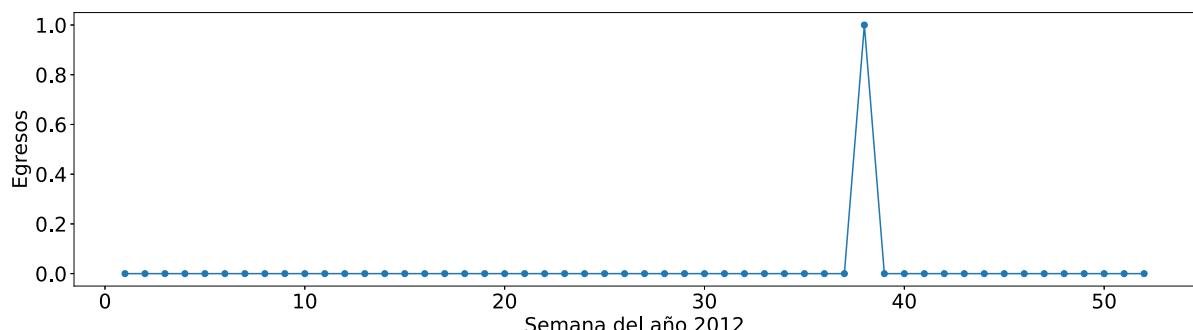
G020



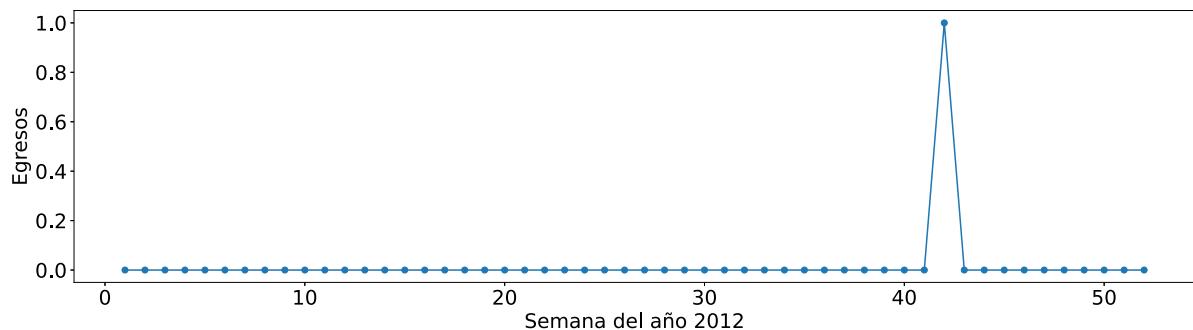
K003



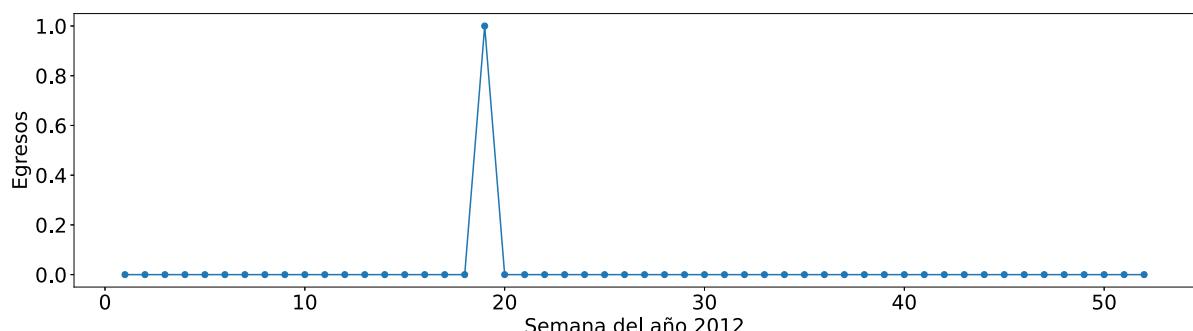
K009



Q434



T573



# 2013

In [6]: `import pandas as pd`

```
# Se cargan los datos
columns3 = ['EGRESO', 'DIAG_INI']
dataframe3 = pd.read_csv('EGRESO_2013.csv', usecols=columns3).dropna()
dataframe3
```

Out[6]:

	EGRESO	DIAG_INI
0	26/12/2012	O821
1	26/12/2012	O010
2	26/12/2012	O821
3	26/12/2012	O809
4	26/12/2012	O620
...	...	...
2879308	04/08/2013	E145
2879309	03/08/2013	J459
2879310	04/08/2013	S720
2879311	05/07/2013	D443
2879312	26/08/2013	N189

2879313 rows × 2 columns

```
In [15]: # Se importan las librerias necesarias
from epiweeks import Week, date

# Se convierten los string a objetos datetime en 'dataframe'
strfdtoriginal3 = '%d/%m/%Y'
dataframe3['EGRESO'] = pd.to_datetime(dataframe3['EGRESO'], errors='coerce', f
ormat=strfdtoriginal3)
dataframe3 = dataframe3.dropna()
dataframe3 = dataframe3.reset_index(drop=True)

# Se agrega una columna con los numeros de semana
dataframe3['sem'] = ''
nrows3 = len(dataframe3.index)
for i in range(nrows3):
    dfday3 = dataframe3['EGRESO'][i]
    if dfday3.year==2013:
        mydate3 = date(dfday3.year, dfday3.month, dfday3.day)
        numberweek3 = Week.fromdate(mydate3)
        dataframe3['sem'][i] = numberweek3.week

dataframe3 = dataframe3.dropna()
dataframe3 = dataframe3.reset_index(drop=True)
dataframe3
```

Out[15]:

	EGRESO	DIAG_INI	sem
<b>0</b>	2012-12-26	O821	
<b>1</b>	2012-12-26	O010	
<b>2</b>	2012-12-26	O821	
<b>3</b>	2012-12-26	O809	
<b>4</b>	2012-12-26	O620	
...	...	...	...
<b>2879308</b>	2013-08-04	E145	32
<b>2879309</b>	2013-08-03	J459	31
<b>2879310</b>	2013-08-04	S720	32
<b>2879311</b>	2013-07-05	D443	27
<b>2879312</b>	2013-08-26	N189	35

2879313 rows × 3 columns

In [57]: # Se forma el nuevo dataframe 'semanas' con el numero de semana del año y la cantidad de egresos en cada semana

```
semanas3 = dataframe3['sem'].value_counts()
semanas3 = semanas3.drop('', axis = 0)
semanas3 = semanas3.sort_index()
semanas3
```

```
Out[57]: 1    30917
         2    51944
         3    54767
         4    55143
         5    56515
         6    53178
         7    56002
         8    55853
         9    55571
        10   56491
        11   56657
        12   53958
        13   51466
        14   52506
        15   54445
        16   55322
        17   55199
        18   51481
        19   54249
        20   54902
        21   56010
        22   55427
        23   55435
        24   55423
        25   54589
        26   54972
        27   54102
        28   55326
        29   54767
        30   55215
        31   55467
        32   56402
        33   57405
        34   57124
        35   58985
        36   58378
        37   59142
        38   55204
        39   59186
        40   59148
        41   59384
        42   58773
        43   57475
        44   56153
        45   57378
        46   57442
        47   53195
        48   56061
        49   55459
        50   54729
        51   53190
        52   24679
Name: sem, dtype: int64
```

```
In [58]: # Se pasa a un nuevo dataframe
newdf3 = pd.DataFrame()
newdf3[ 'sem' ] = semanas3.index
newdf3[ 'casos' ] = ''
nr3 = len(newdf3.index)
for i in range (nr3):
    newdf3[ 'casos' ][i] = int(semanas3[i+1])
newdf3
```

Out[58]:

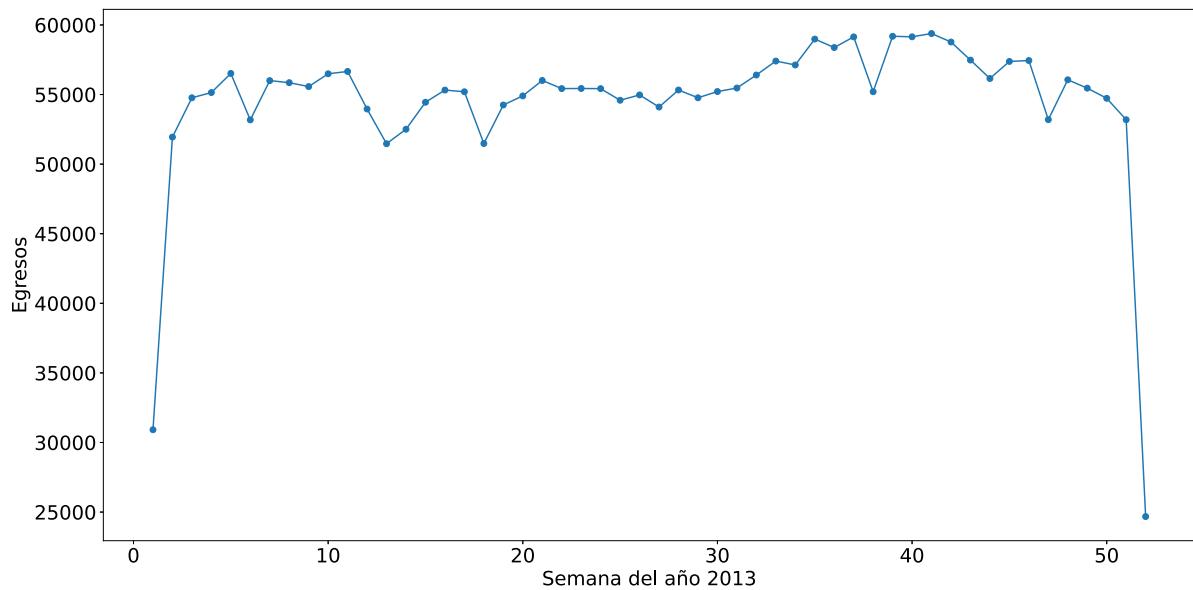
	sem	casos
0	1	30917
1	2	51944
2	3	54767
3	4	55143
4	5	56515
5	6	53178
6	7	56002
7	8	55853
8	9	55571
9	10	56491
10	11	56657
11	12	53958
12	13	51466
13	14	52506
14	15	54445
15	16	55322
16	17	55199
17	18	51481
18	19	54249
19	20	54902
20	21	56010
21	22	55427
22	23	55435
23	24	55423
24	25	54589
25	26	54972
26	27	54102
27	28	55326
28	29	54767
29	30	55215
30	31	55467
31	32	56402
32	33	57405
33	34	57124
34	35	58985

sem	casos
<b>35</b>	36 58378
<b>36</b>	37 59142
<b>37</b>	38 55204
<b>38</b>	39 59186
<b>39</b>	40 59148
<b>40</b>	41 59384
<b>41</b>	42 58773
<b>42</b>	43 57475
<b>43</b>	44 56153
<b>44</b>	45 57378
<b>45</b>	46 57442
<b>46</b>	47 53195
<b>47</b>	48 56061
<b>48</b>	49 55459
<b>49</b>	50 54729
<b>50</b>	51 53190
<b>51</b>	52 24679

```
In [133]: # Se importan las librerías necesarias
import matplotlib.pyplot as plt

año3 = '2013'
print('Egresos ' + año3)
# Se establece el tamaño de la figura
plt.rcParams.update({'font.size': 20})
plt.figure(figsize=(20, 10))
# Se define que se unan los puntos en la gráfica
plt.scatter(semanas3.index, newdf3.casos)
# Se definen las coordenadas 'x' y 'y'
plt.plot(semanas3.index, newdf3.casos)
# Se coloca un título para el eje x
plt.xlabel("Semana del año " + año3)
# Se coloca un título para el eje y
plt.ylabel("Egresos")
# Se guarda la figura como un archivo
plt.savefig(año3 + '/Egresos' + año3 + '.jpg', format='jpg')
# Se muestra la figura en la terminal
plt.show()
```

Egresos 2013



```
In [134]: # Se crea el dataframe 'diagnosticos' con los nombre de los diferentes diagnosticos sin repeticion
diagnosticos3 = dataframe3['DIAG_INI'].value_counts()
# Se ordena del diagnostico con mayore numero de egresos al diagnostico con menor numero de egresos
diagnosticos3 = diagnosticos3.sort_values(ascending = False)
# Se crea el dataframe 'cie' con los nombres de los diagnosticos, los numeros de las semanas, y la cantidad de diagnosticos de dicha enfermedad en cada semana
cie3 = dataframe3.groupby(['DIAG_INI', 'sem']).count()

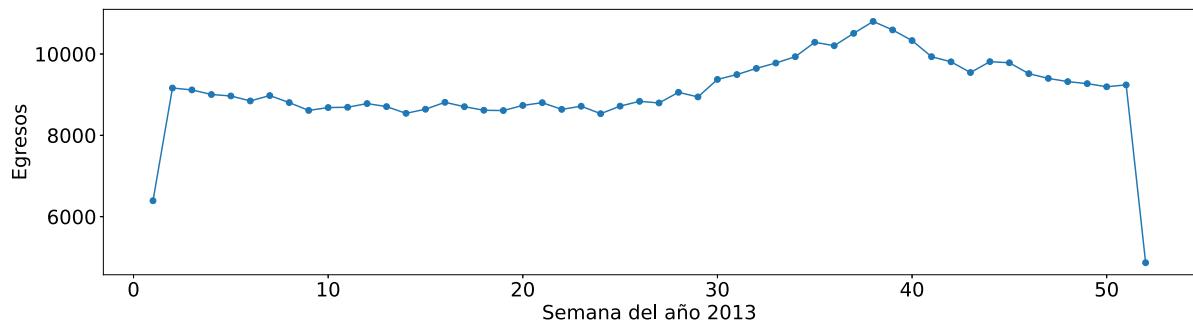
# Se importa la libreria necesaria para la figura
import matplotlib.pyplot as plt

plt.rcParams.update({'font.size': 20})

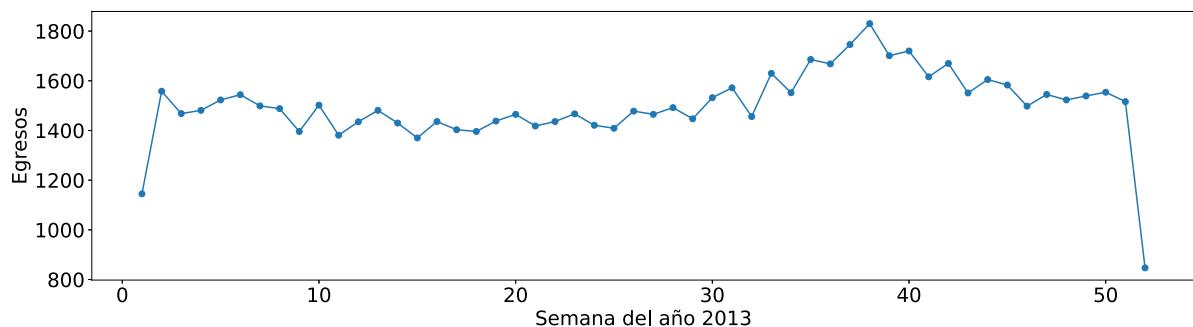
print('Año ' + año3 + '\n')
# Se inicia un contador para controlar la cantidad de graficos a generar
i3 = 0
ndiagnosticos3 = len(diagnosticos3.index)
maximo3 = ndiagnosticos3-5
# Proceso de generación de las figuras
for name3 in diagnosticos3.index:
    if i3 < 25 or i3 >= maximo3:
        y3 = []
        for index3 in semanas3.index:
            try:
                y3.append(cie3['EGRESO'][name3, index3])
            except:
                y3.append(0)
        print('\n' + name3)
        plt.figure(figsize=(20, 5))
        plt.scatter(semanas3.index, y3)
        plt.plot(semanas3.index, y3)
        plt.xlabel("Semana del año " + año3)
        plt.ylabel("Egresos")
        plt.savefig(año3 + '/' + name3 + '_' + año3 + '.jpg', format='jpg')
        plt.show()
    i3 = i3+1
```

Año 2013

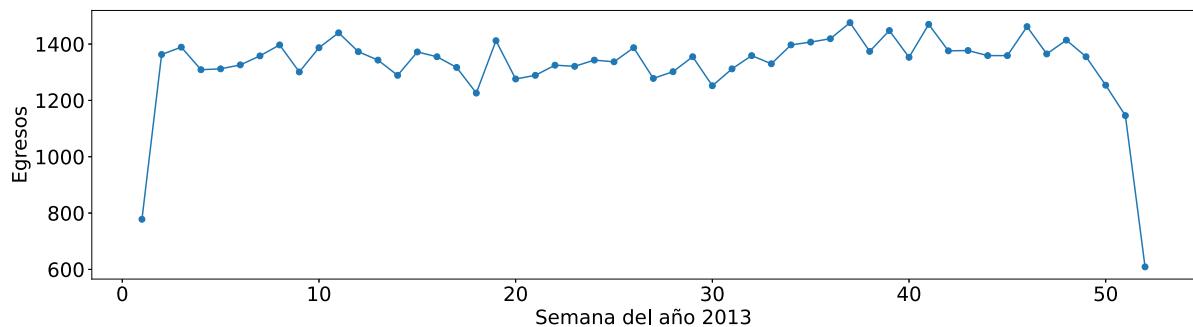
0809



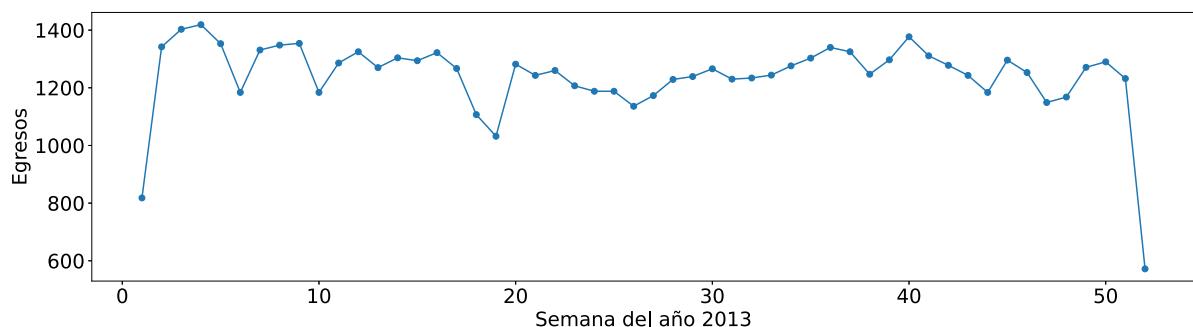
0800



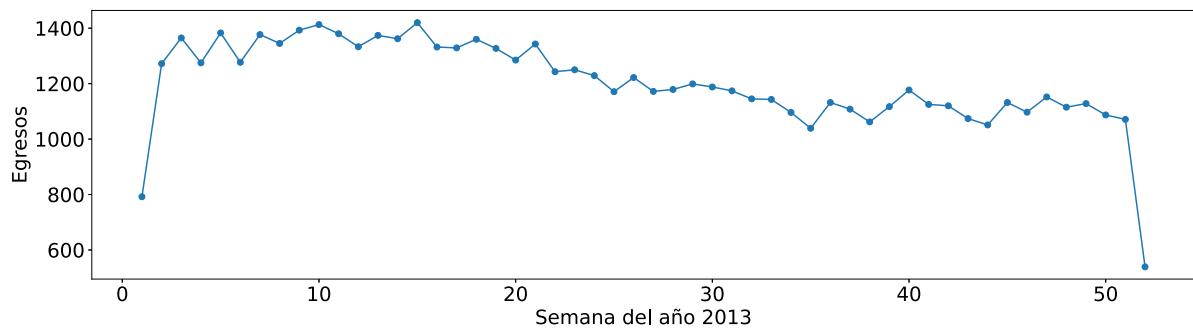
0829



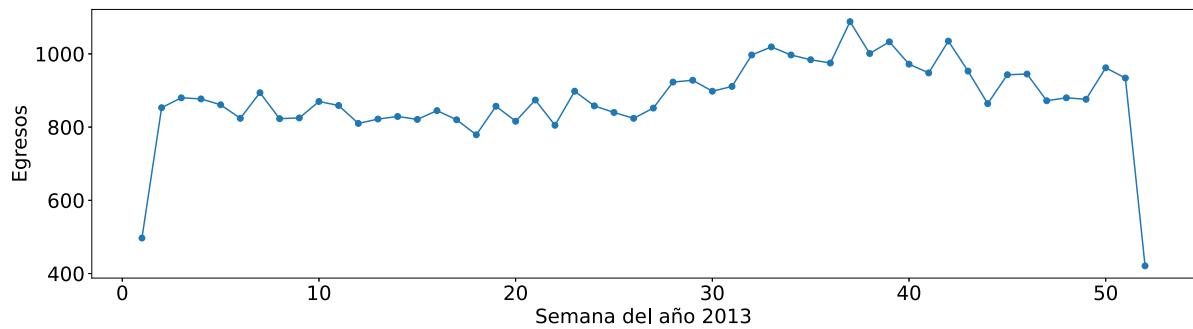
N189



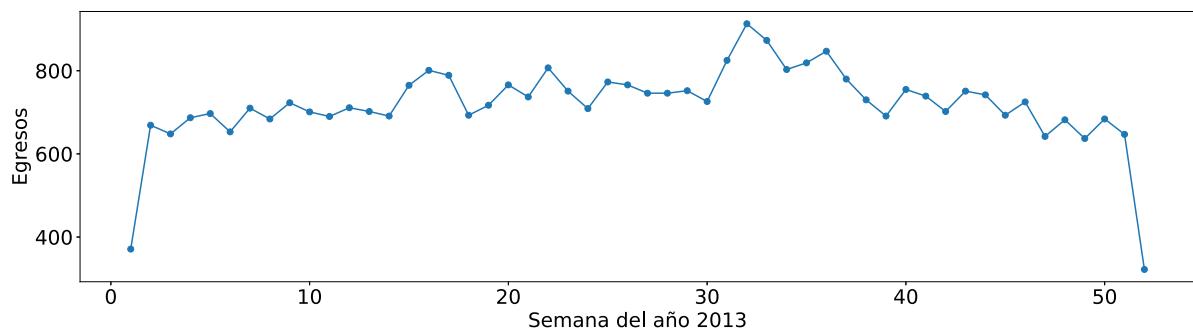
0064



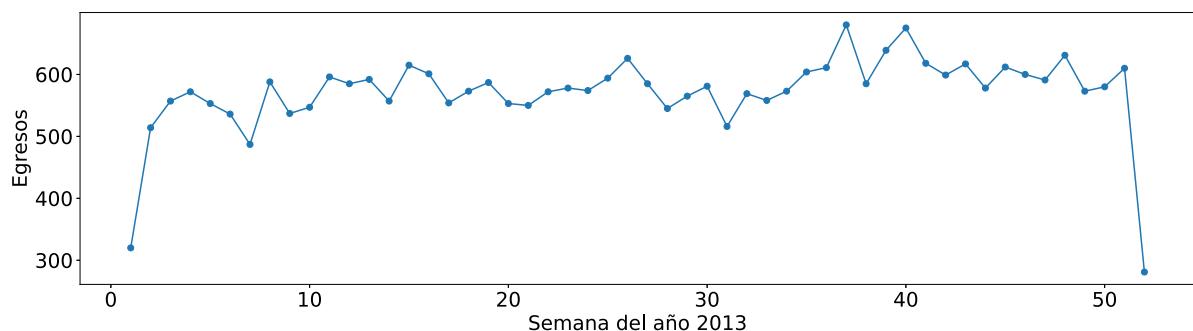
0342



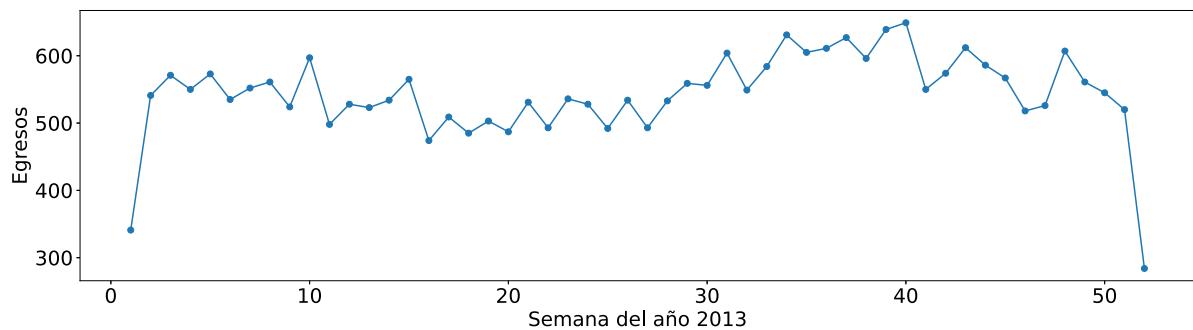
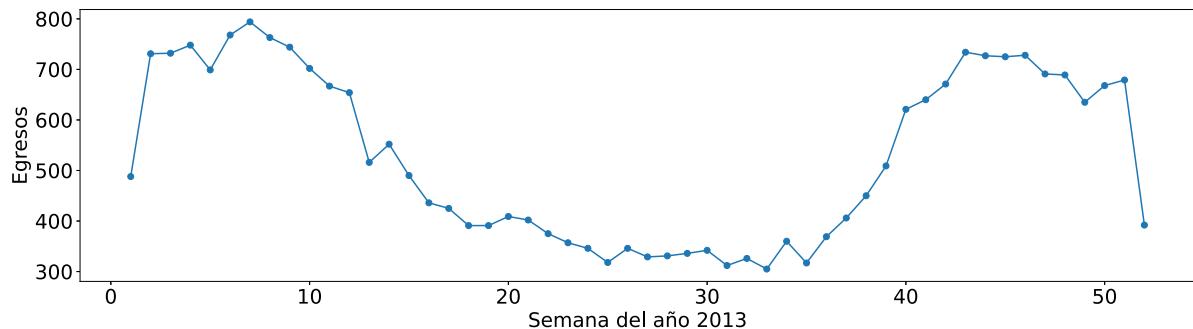
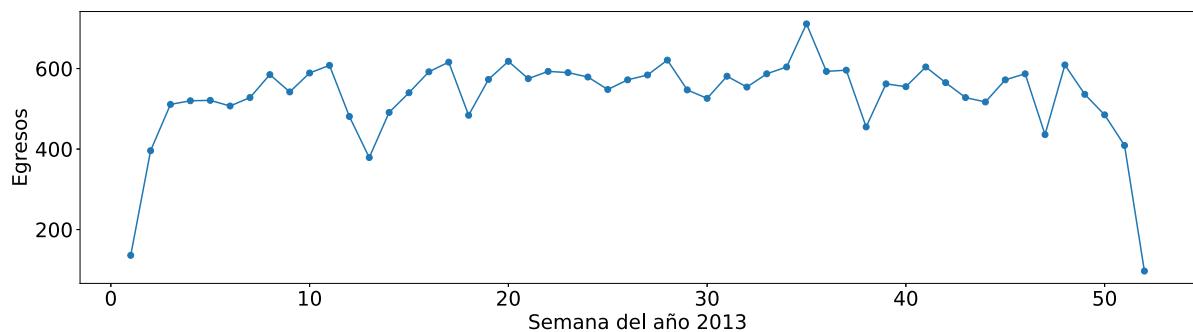
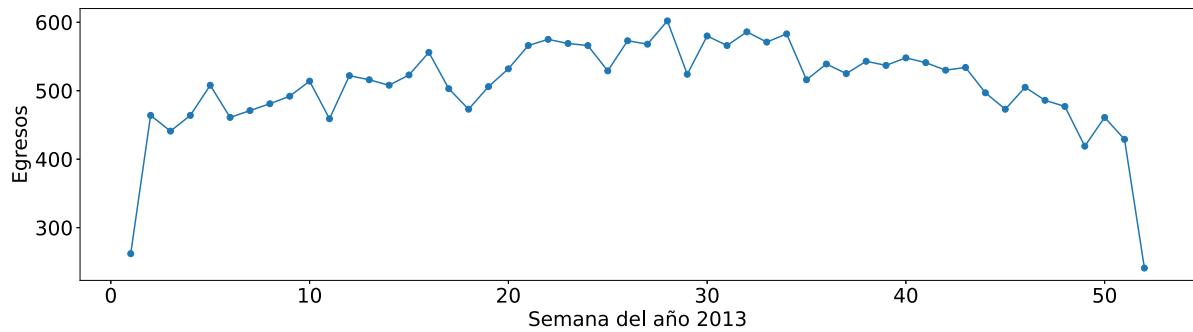
K359

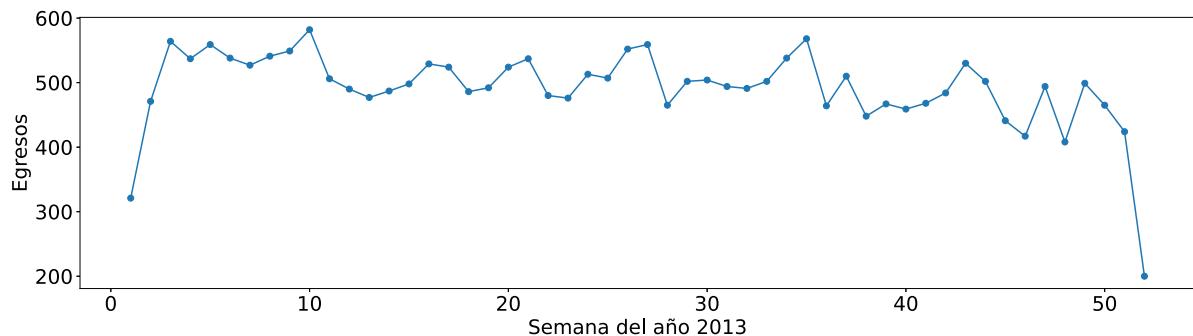


0339

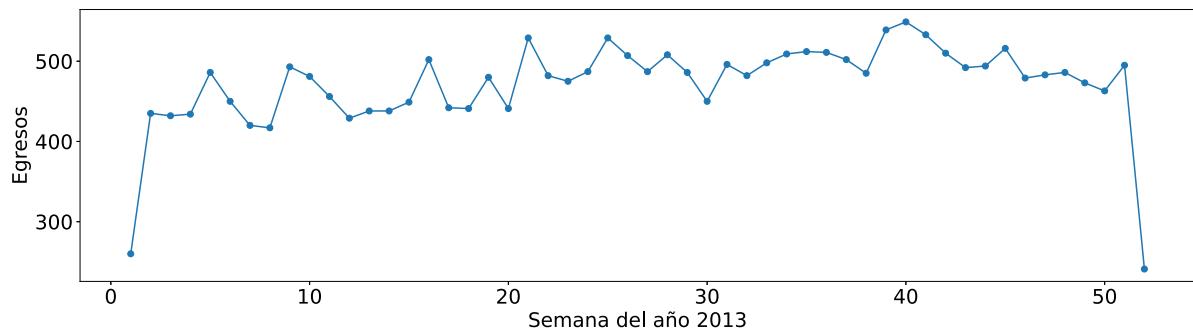


0429

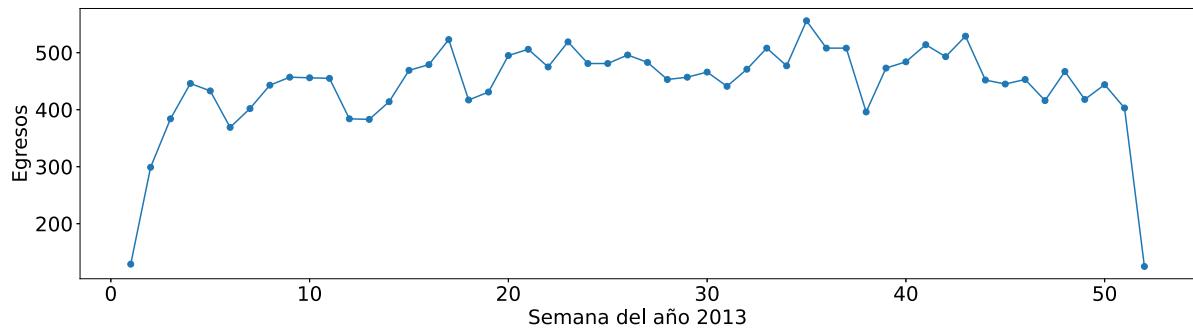
**J189****K409****0470****N180**



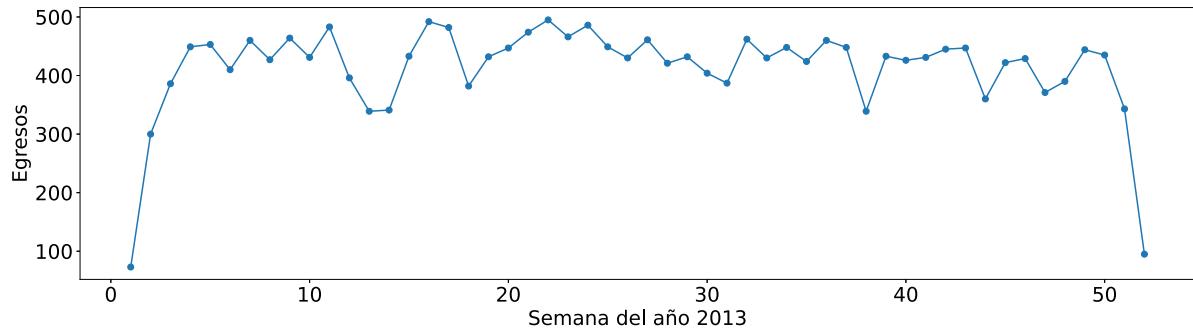
0410



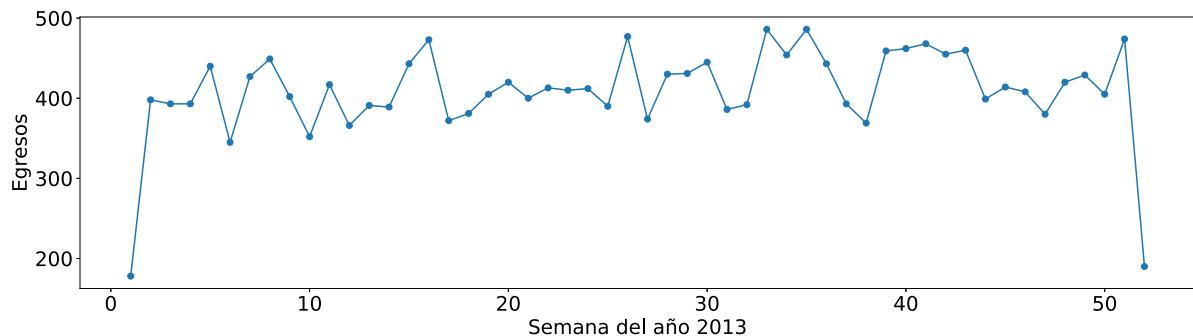
K801



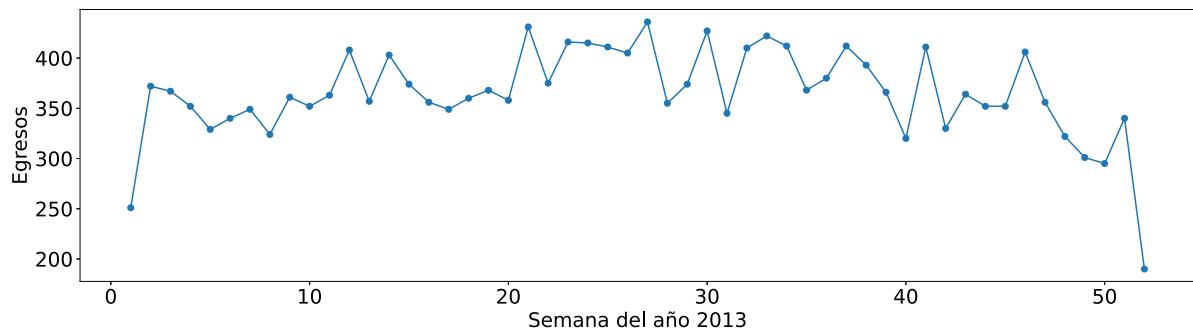
D259



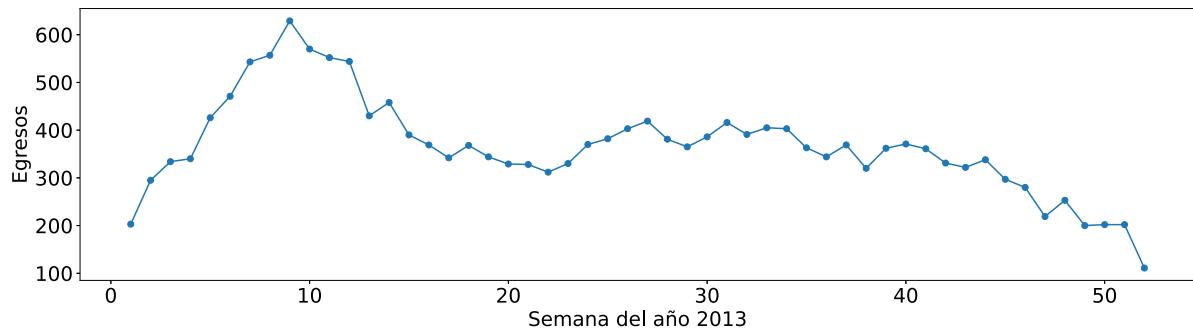
R69X



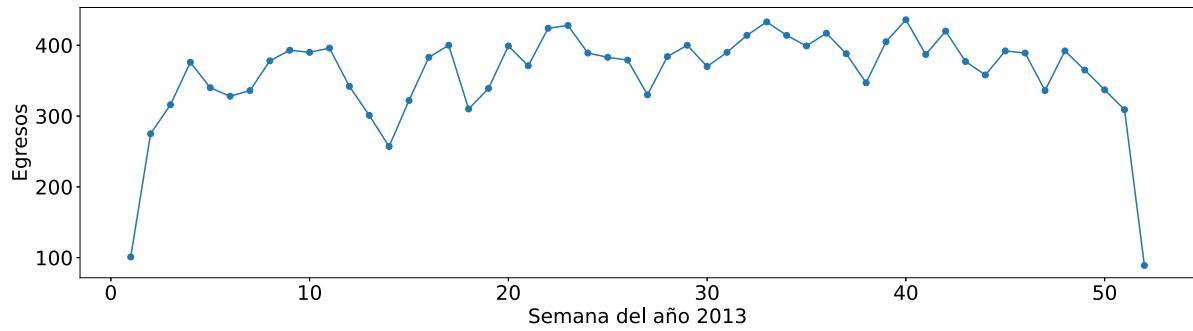
P073



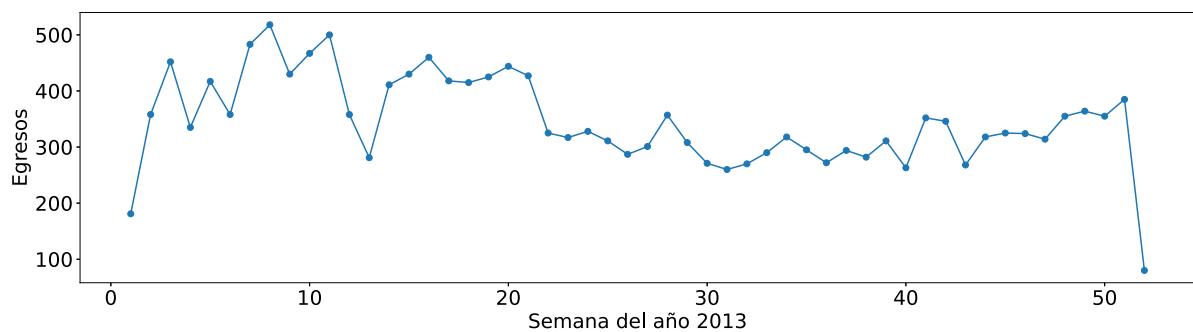
A09X



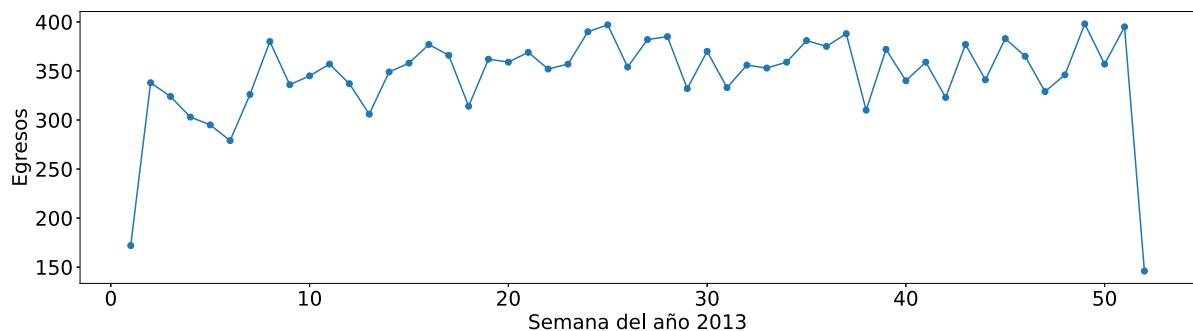
K811



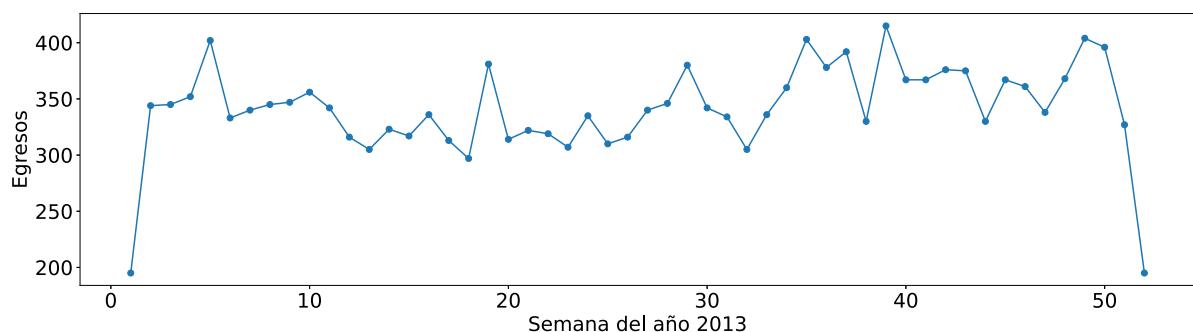
C509



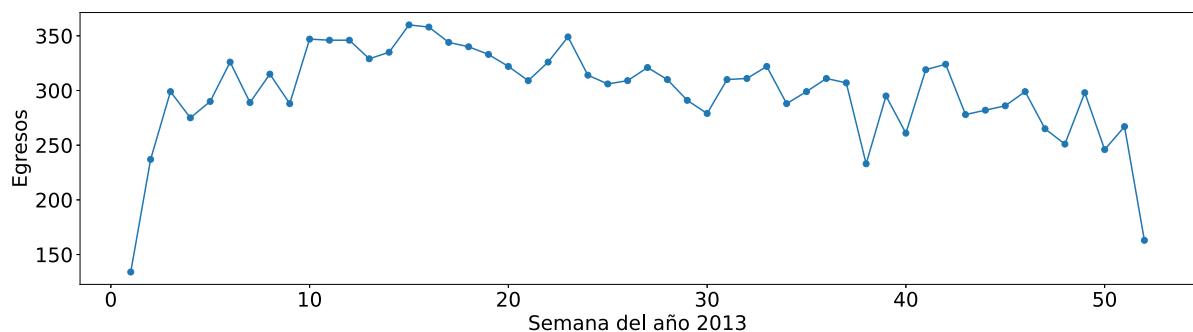
C910



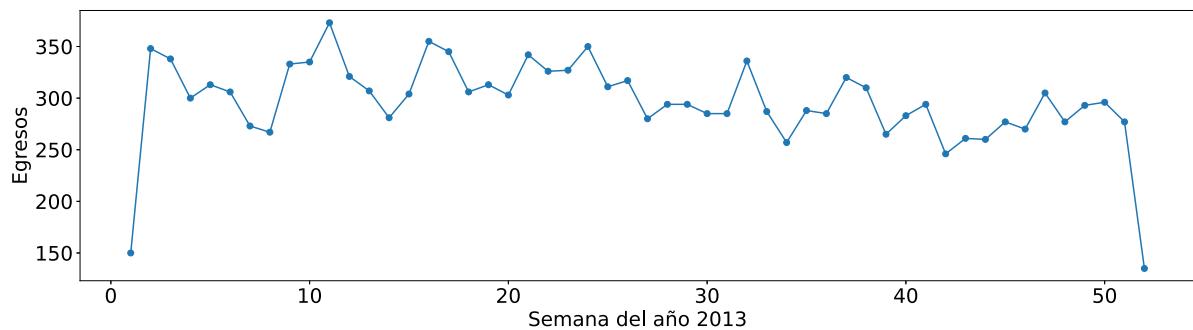
013X



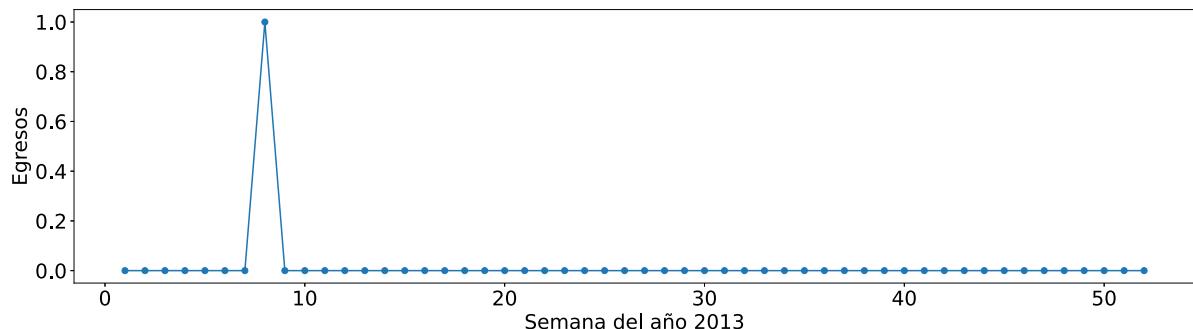
0200



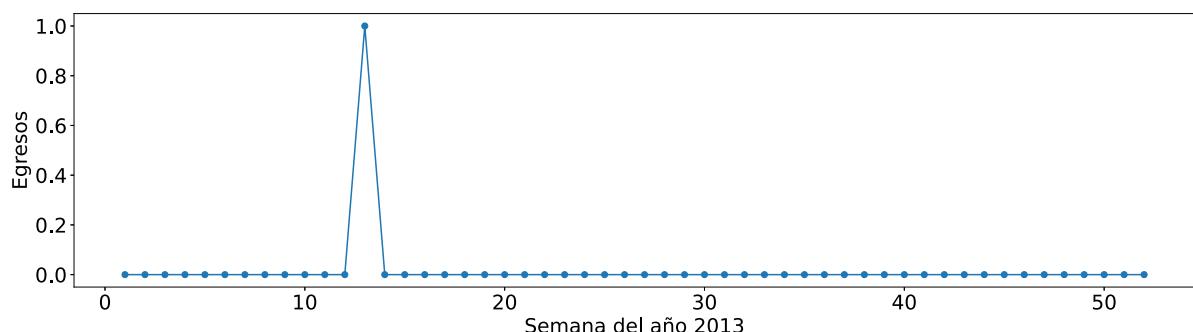
E119



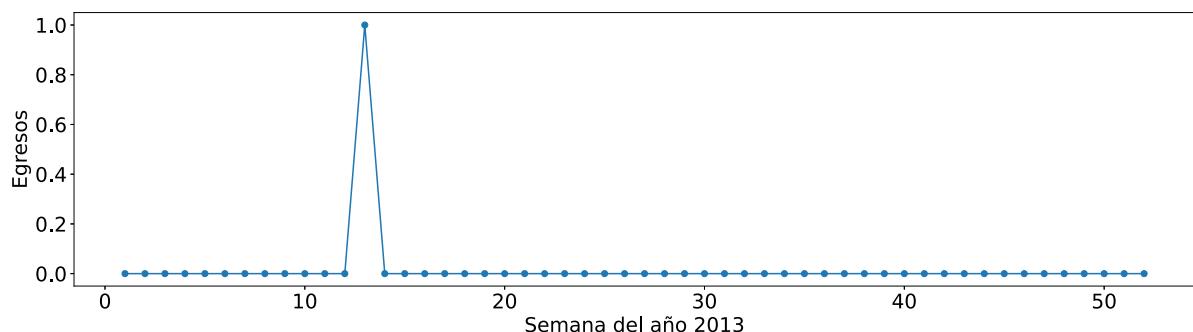
G590



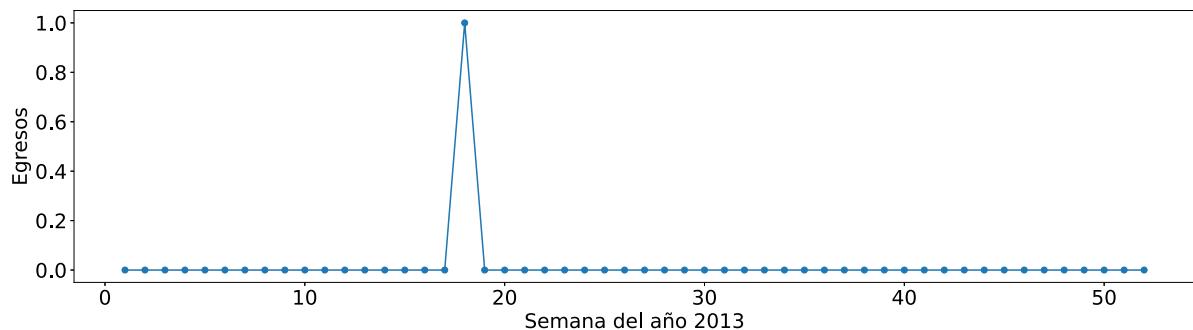
L683



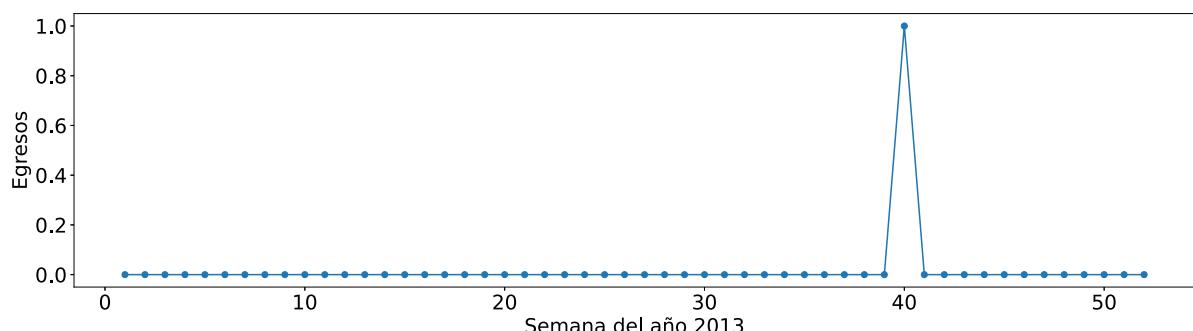
T593



M051



Z749

**2014**

In [7]: `import pandas as pd`

```
# Se cargan los datos
columns4 = ['EGRESO', 'DIAG_INI']
dataframe4 = pd.read_csv('EGRESO_2014.csv', usecols=columns4).dropna()
dataframe4
```

Out[7]:

	EGRESO	DIAG_INI
0	2014-11-20 00:00:00	P220
1	2014-09-17 00:00:00	O829
2	2014-09-10 00:00:00	O809
3	2014-09-05 00:00:00	O689
4	2014-09-04 00:00:00	O809
...	...	...
2959192	2014-10-02 00:00:00	O649
2959193	2014-11-18 00:00:00	O809
2959194	2014-12-19 00:00:00	O470
2959195	2014-01-14 00:00:00	O809
2959196	2014-02-17 00:00:00	I10X

2959197 rows × 2 columns

```
In [16]: # Se importan las librerias necesarias
from epiweeks import Week, date

# Se convierten los string a objetos datetime en 'dataframe'
strfdtoriginal4 = '%Y-%m-%d %H:%M:%S'
dataframe4['EGRESO'] = pd.to_datetime(dataframe4['EGRESO'], errors='coerce', format=strfdtoriginal4)
dataframe4 = dataframe4.dropna()
dataframe4 = dataframe4.reset_index(drop=True)

# Se agrega una columna con los numeros de semana
dataframe4['sem'] = ''
nrows4 = len(dataframe4.index)
for i in range(nrows4):
    dfday4 = dataframe4['EGRESO'][i]
    if dfday4.year==2014:
        mydate4 = date(dfday4.year, dfday4.month, dfday4.day)
        numberweek4 = Week.fromdate(mydate4)
        dataframe4['sem'][i] = numberweek4.week

dataframe4 = dataframe4.dropna()
dataframe4 = dataframe4.reset_index(drop=True)
dataframe4
```

Out[16]:

	EGRESO	DIAG_INI	sem
0	2014-11-20	P220	47
1	2014-09-17	O829	38
2	2014-09-10	O809	37
3	2014-09-05	O689	36
4	2014-09-04	O809	36
...	...	...	...
2959192	2014-10-02	O649	40
2959193	2014-11-18	O809	47
2959194	2014-12-19	O470	51
2959195	2014-01-14	O809	3
2959196	2014-02-17	I10X	8

2959197 rows × 3 columns

In [61]: # Se forma el nuevo dataframe 'semanas' con el numero de semana del año y la cantidad de egresos en cada semana  
semanas4 = dataframe4['sem'].value\_counts()  
semanas4 = semanas4.drop('', axis = 0)  
semanas4 = semanas4.sort\_index()  
semanas4

```
Out[61]: 1    23312
         2    51774
         3    55426
         4    55220
         5    57112
         6    53354
         7    55606
         8    56075
         9    56113
        10   56754
        11   57918
        12   54352
        13   58534
        14   57541
        15   57472
        16   51809
        17   53967
        18   53470
        19   52428
        20   56835
        21   56361
        22   58079
        23   58118
        24   57917
        25   57070
        26   57280
        27   56855
        28   57669
        29   58157
        30   57816
        31   57907
        32   57712
        33   57097
        34   57984
        35   60024
        36   60197
        37   61139
        38   56277
        39   60859
        40   61418
        41   61557
        42   59699
        43   58636
        44   59131
        45   57958
        46   59866
        47   54846
        48   59227
        49   57866
        50   57841
        51   56454
        52   34577
Name: sem, dtype: int64
```

```
In [69]: # Se pasa a un nuevo dataframe
newdf4 = pd.DataFrame()
newdf4['sem'] = semanas4.index
newdf4['casos'] = ''
nr4 = len(newdf4.index)
for i in range (nr4):
    newdf4['casos'][i] = int(semanas4[i+1])
newdf4
```

Out[69]:

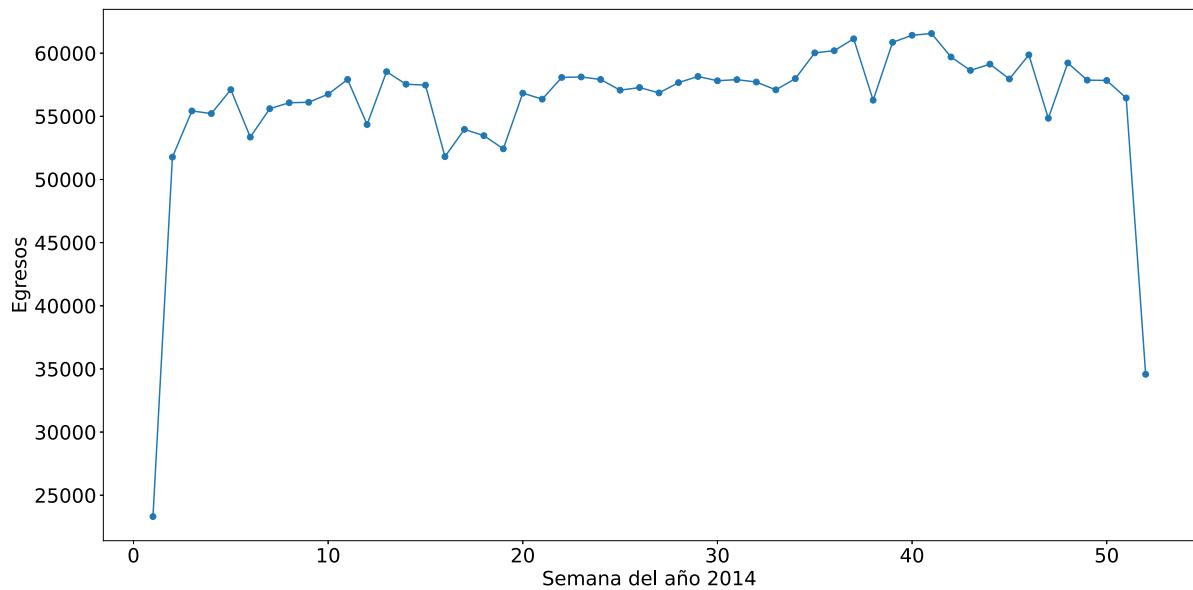
	sem	casos
0	1	23312
1	2	51774
2	3	55426
3	4	55220
4	5	57112
5	6	53354
6	7	55606
7	8	56075
8	9	56113
9	10	56754
10	11	57918
11	12	54352
12	13	58534
13	14	57541
14	15	57472
15	16	51809
16	17	53967
17	18	53470
18	19	52428
19	20	56835
20	21	56361
21	22	58079
22	23	58118
23	24	57917
24	25	57070
25	26	57280
26	27	56855
27	28	57669
28	29	58157
29	30	57816
30	31	57907
31	32	57712
32	33	57097
33	34	57984
34	35	60024

sem	casos
<b>35</b>	36 60197
<b>36</b>	37 61139
<b>37</b>	38 56277
<b>38</b>	39 60859
<b>39</b>	40 61418
<b>40</b>	41 61557
<b>41</b>	42 59699
<b>42</b>	43 58636
<b>43</b>	44 59131
<b>44</b>	45 57958
<b>45</b>	46 59866
<b>46</b>	47 54846
<b>47</b>	48 59227
<b>48</b>	49 57866
<b>49</b>	50 57841
<b>50</b>	51 56454
<b>51</b>	52 34577

```
In [135]: # Se importan las librerías necesarias
import matplotlib.pyplot as plt

año4 = '2014'
print('Egresos ' + año4)
# Se establece el tamaño de la figura
plt.rcParams.update({'font.size': 20})
plt.figure(figsize=(20, 10))
# Se define que se unan los puntos en la gráfica
plt.scatter(semanas4.index, newdf4.casos)
# Se definen las coordenadas 'x' y 'y'
plt.plot(semanas4.index, newdf4.casos)
# Se coloca un título para el eje x
plt.xlabel("Semana del año " + año4)
# Se coloca un título para el eje y
plt.ylabel("Egresos")
# Se guarda la figura como un archivo
plt.savefig(año4 + '/Egresos' + año4 + '.jpg', format='jpg')
# Se muestra la figura en la terminal
plt.show()
```

Egresos 2014



```
In [136]: # Se crea el dataframe 'diagnosticos' con los nombre de los diferentes diagnosticos sin repeticion
diagnosticos4 = dataframe4['DIAG_INI'].value_counts()
# Se ordena del diagnostico con mayore numero de egresos al diagnostico con menor numero de egresos
diagnosticos4 = diagnosticos4.sort_values(ascending = False)
# Se crea el dataframe 'cie' con los nombres de los diagnosticos, los numeros de las semanas, y la cantidad de diagnosticos de dicha enfermedad en cada semana
cie4 = dataframe4.groupby(['DIAG_INI', 'sem']).count()

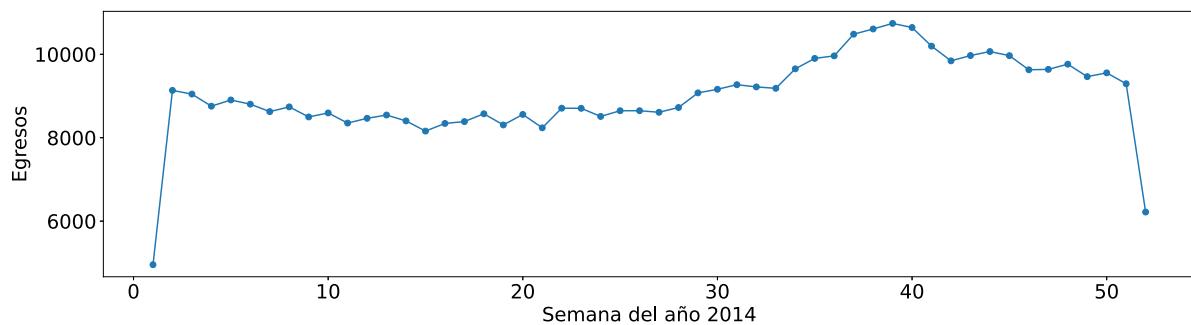
# Se importa la libreria necesaria para la figura
import matplotlib.pyplot as plt

plt.rcParams.update({'font.size': 20})

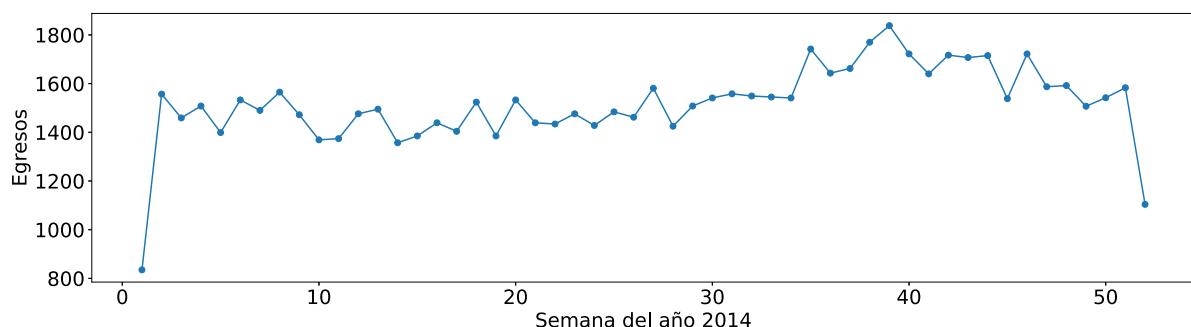
print('Año ' + año4 + '\n')
# Se inicia un contador para controlar la cantidad de graficos a generar
i4 = 0
ndiagnosticos4 = len(diagnosticos4.index)
maximo4 = ndiagnosticos4-5
# Proceso de generación de las figuras
for name4 in diagnosticos4.index:
    if i4 < 25 or i4 >= maximo4:
        y4 = []
        for index4 in semanas4.index:
            try:
                y4.append(cie4['EGRESO'][name4, index4])
            except:
                y4.append(0)
        print('\n' + name4)
        plt.figure(figsize=(20, 5))
        plt.scatter(semanas4.index, y4)
        plt.plot(semanas4.index, y4)
        plt.xlabel("Semana del año " + año4)
        plt.ylabel("Egresos")
        plt.savefig(año4 + '/' + name4 + '_' + año4 + '.jpg', format='jpg')
        plt.show()
    i4 = i4+1
```

Año 2014

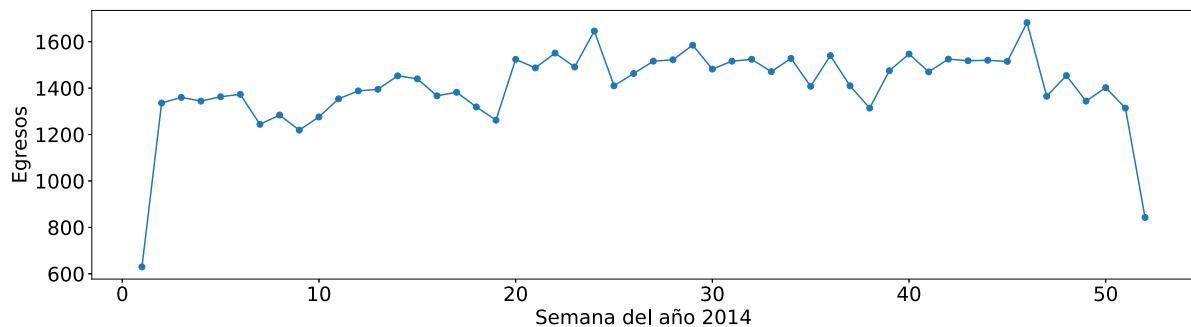
0809



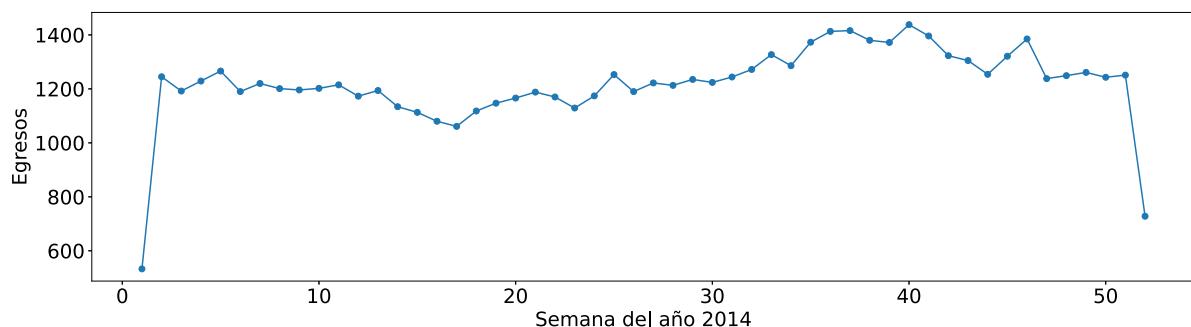
0800



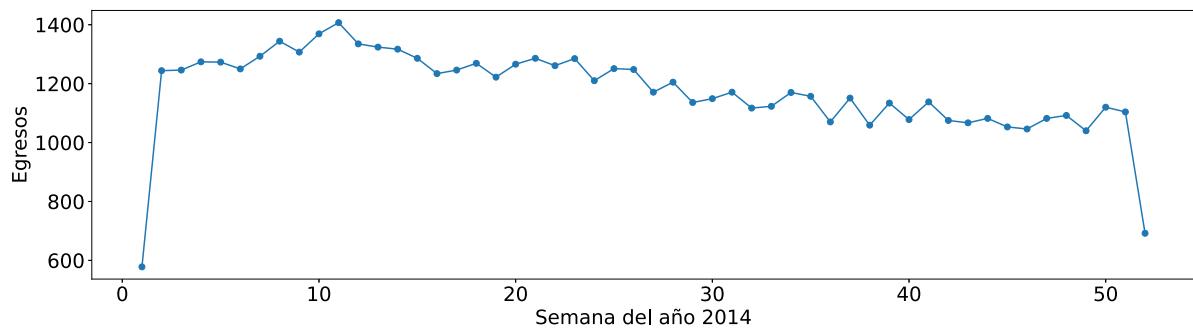
N189



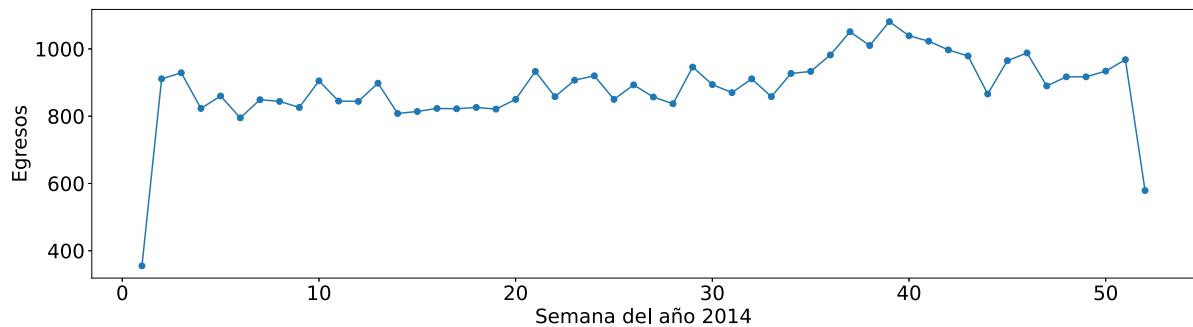
0829



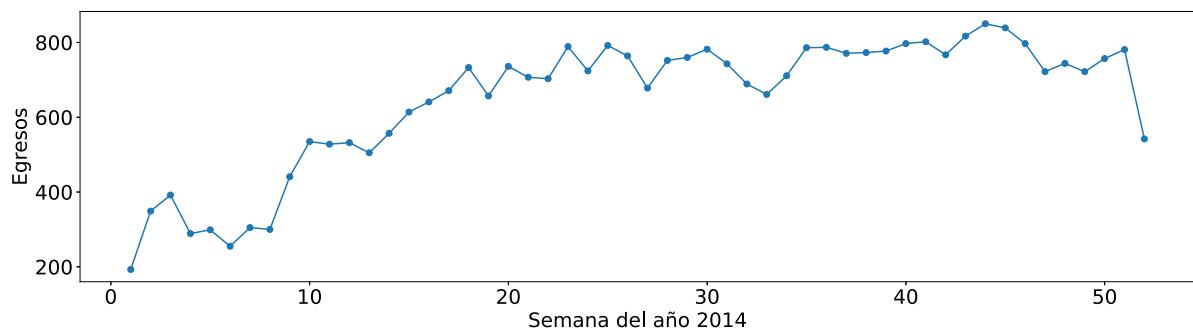
0064



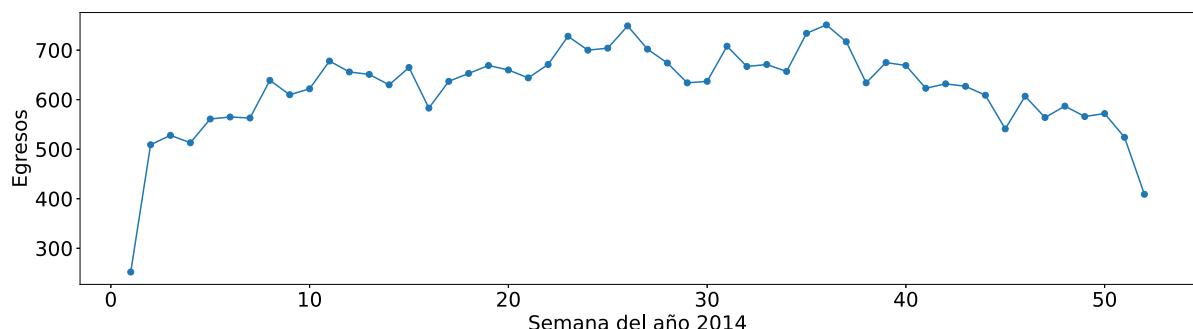
0342



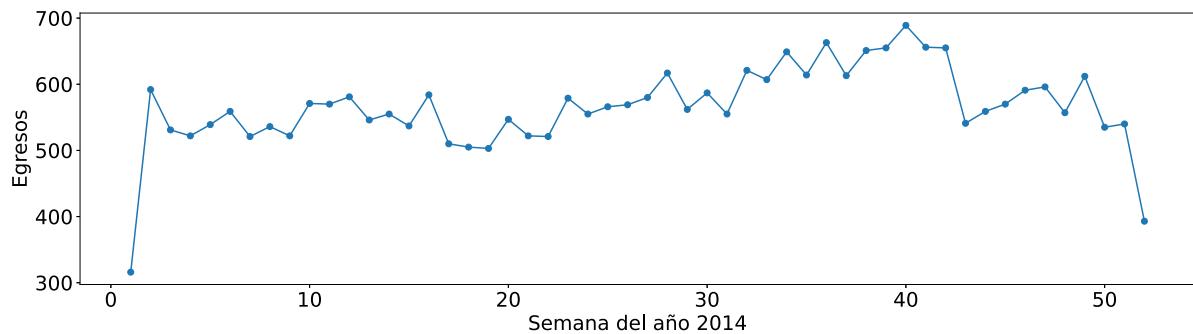
N185



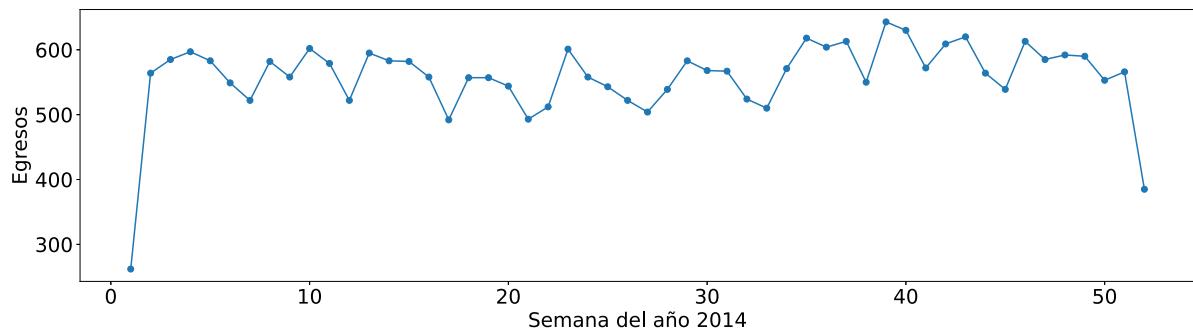
K358



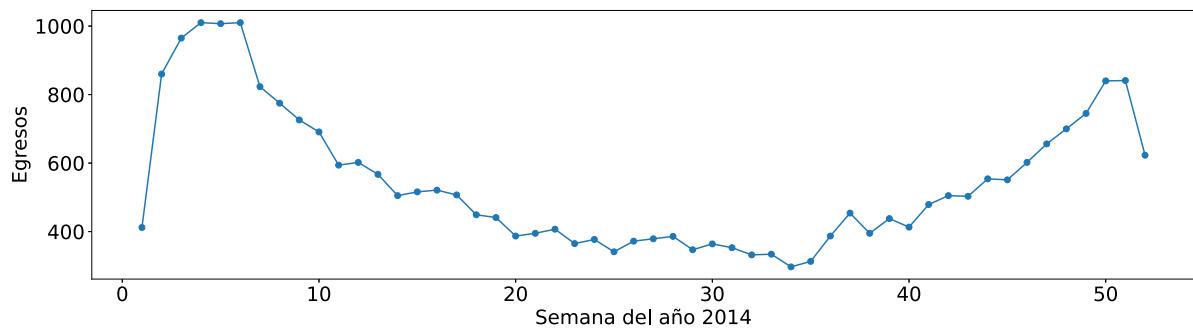
0429



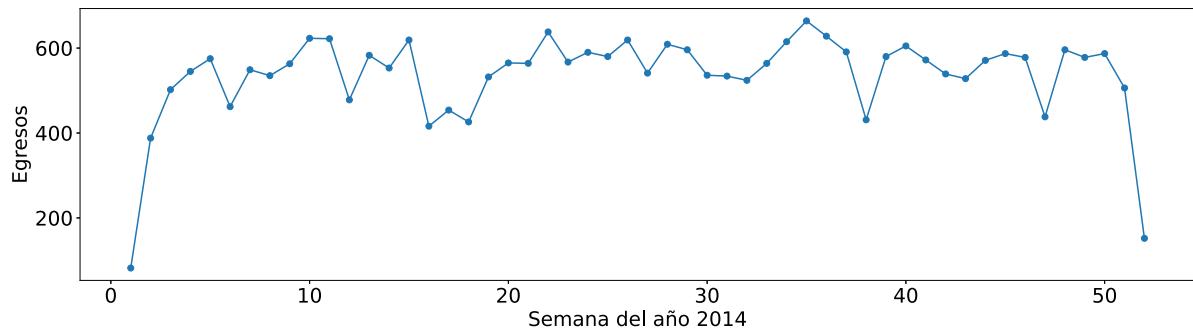
0339



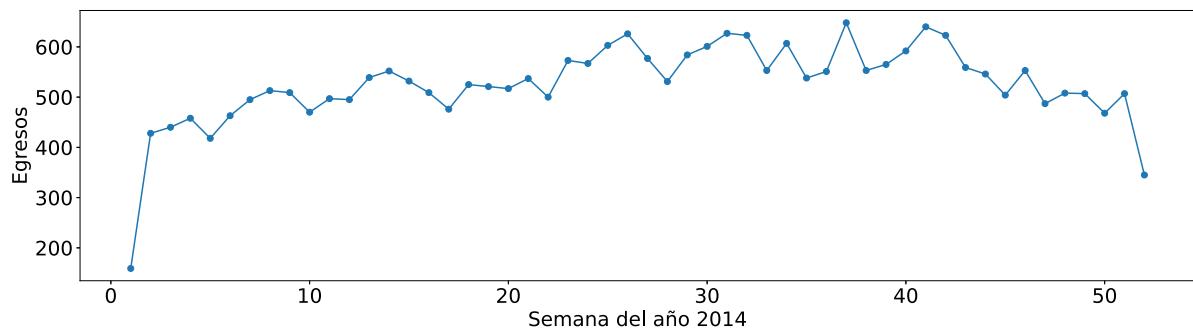
J189



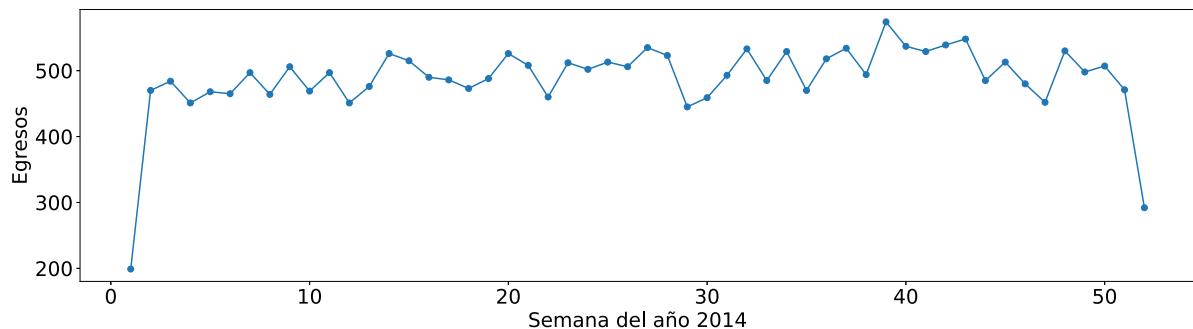
K409



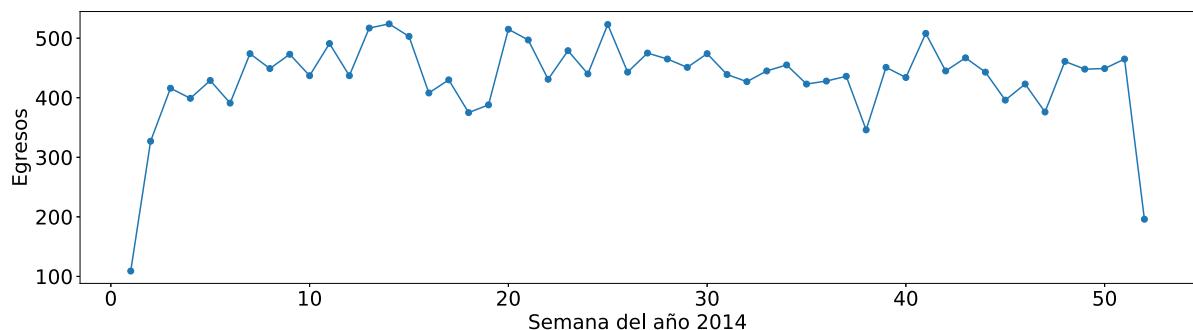
0470



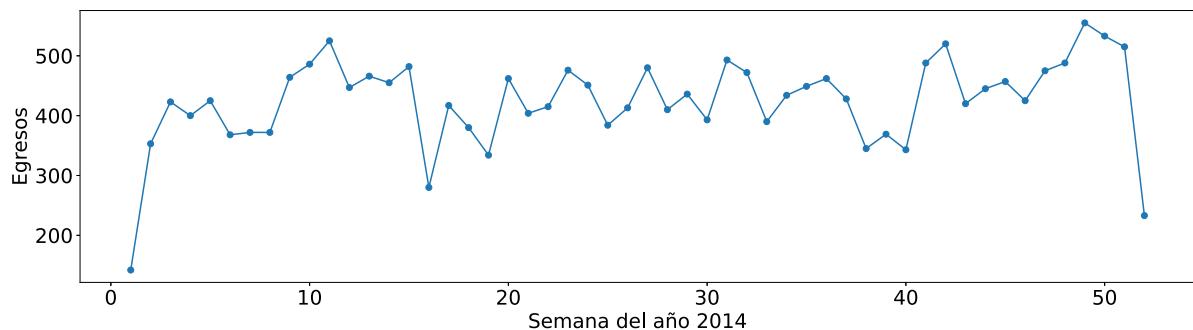
0410



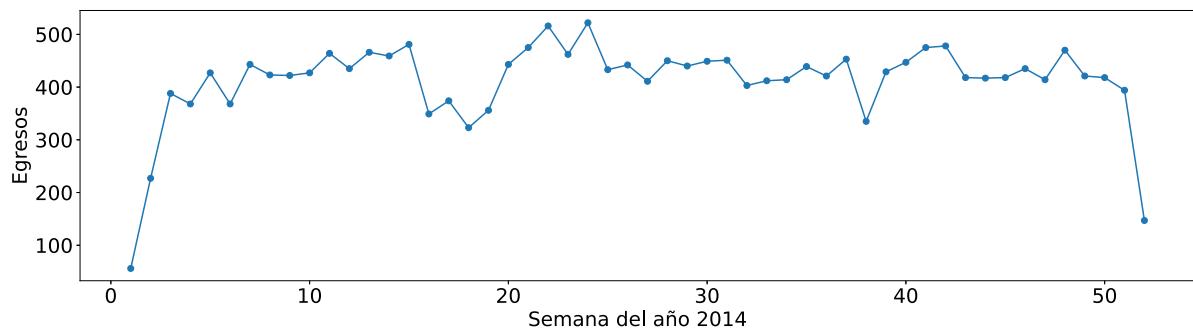
K801



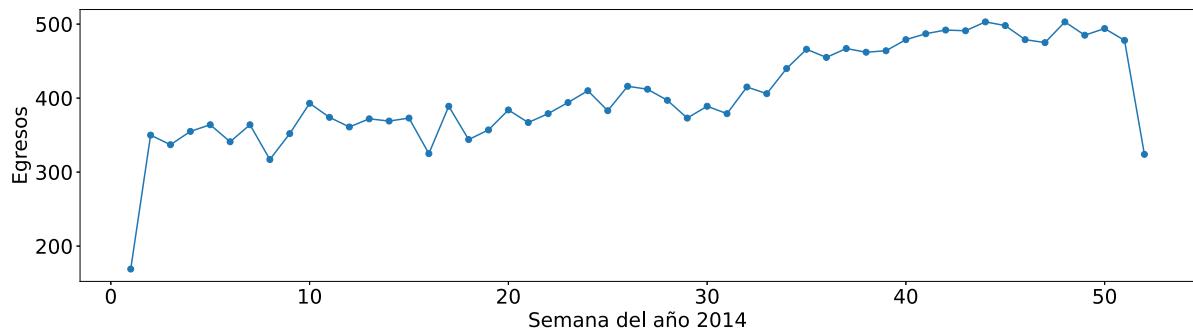
C509



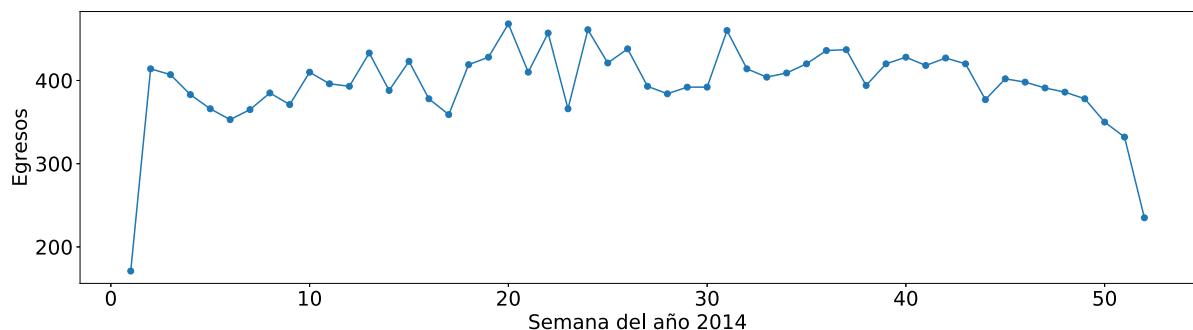
D259



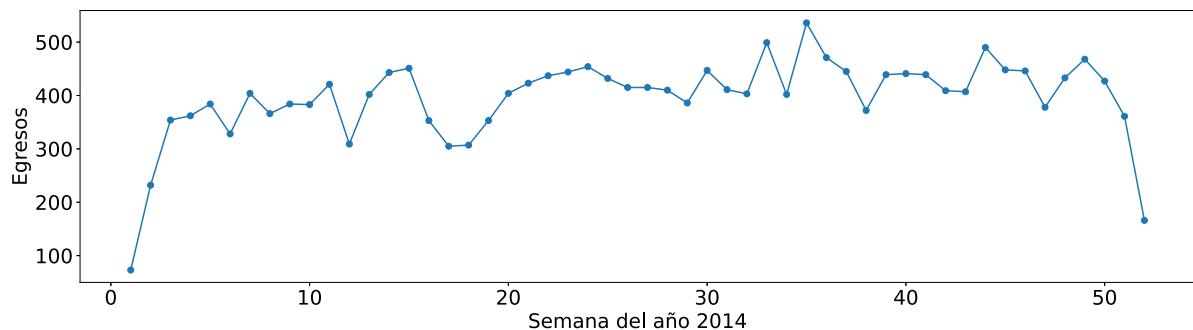
Z491



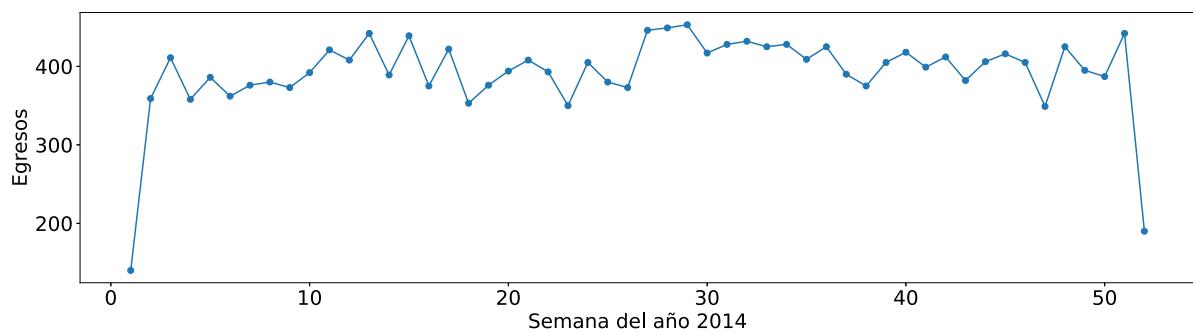
K37X



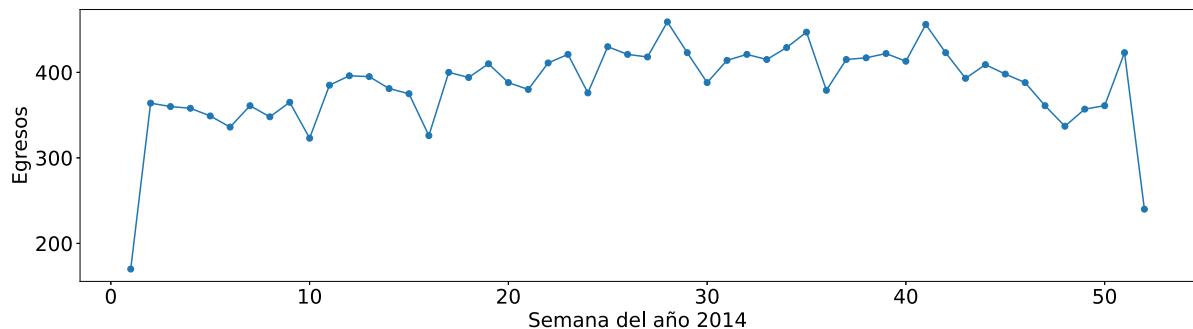
K811



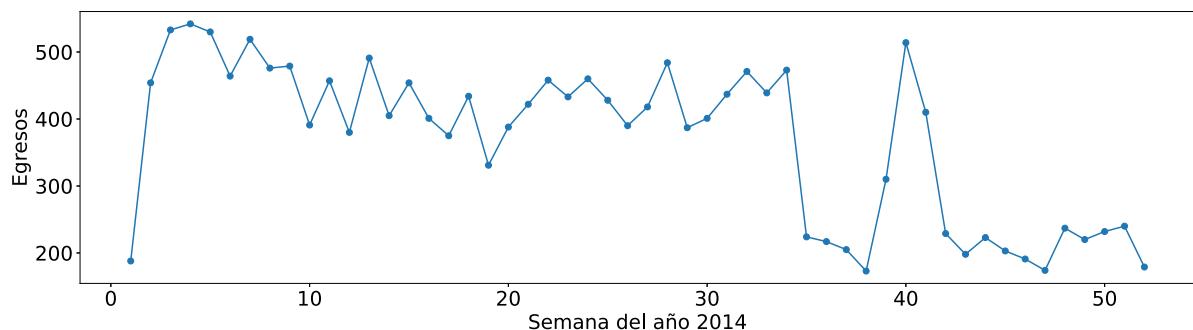
C910



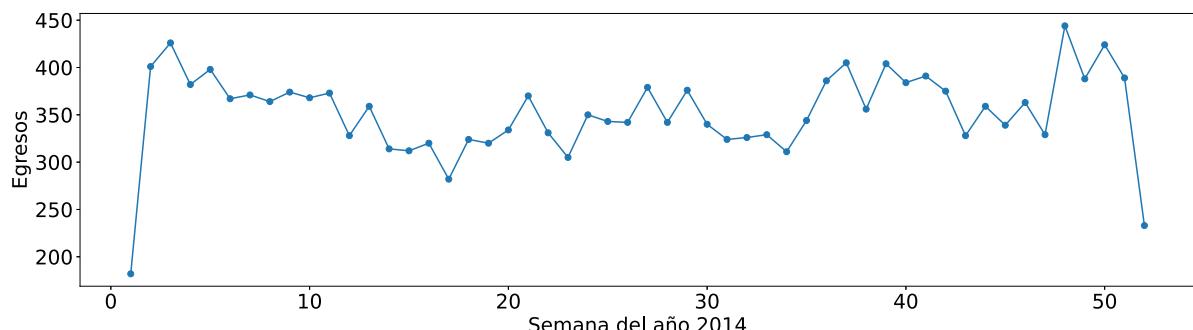
P073



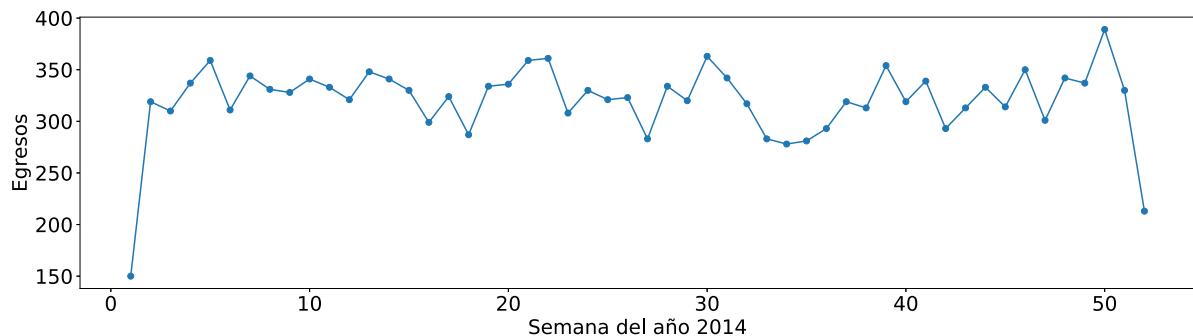
R69X



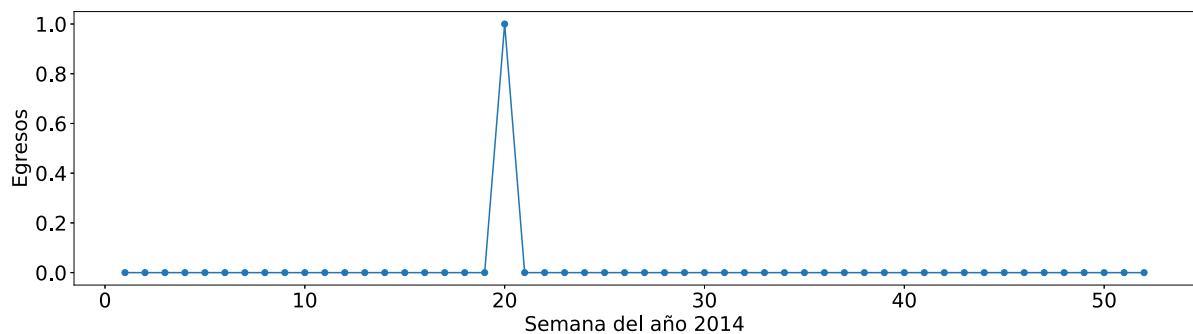
013X



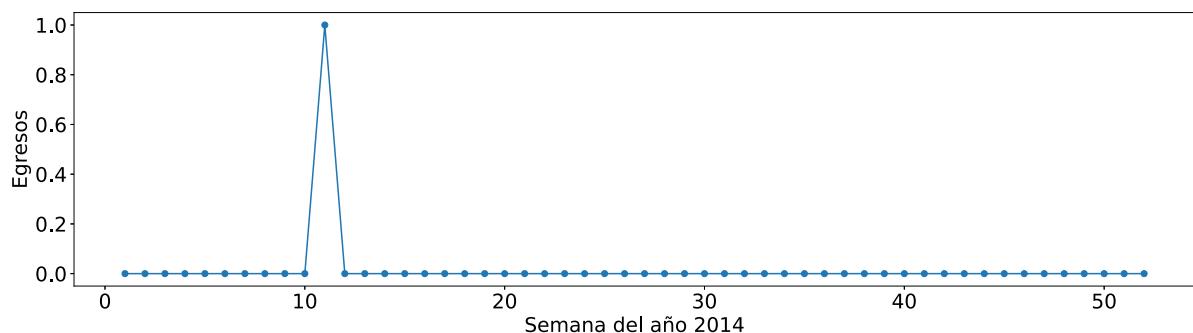
E119



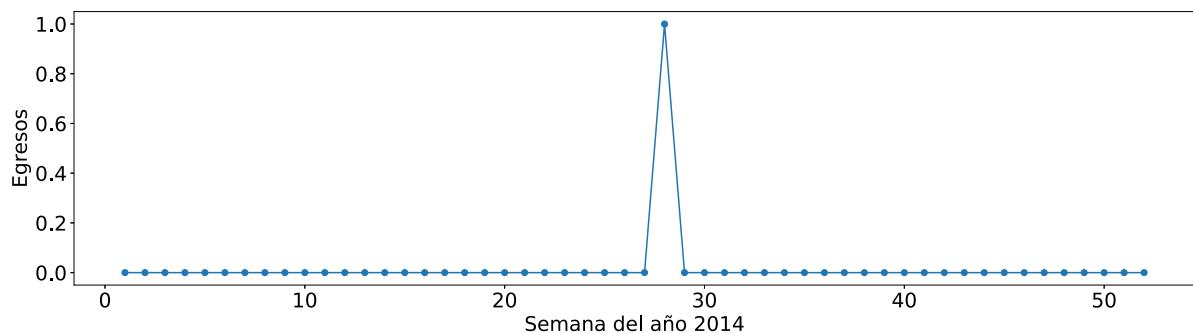
Q978



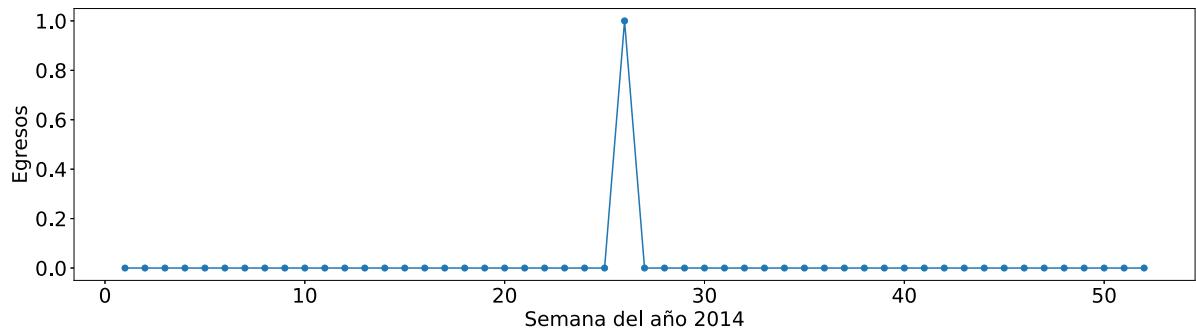
E770



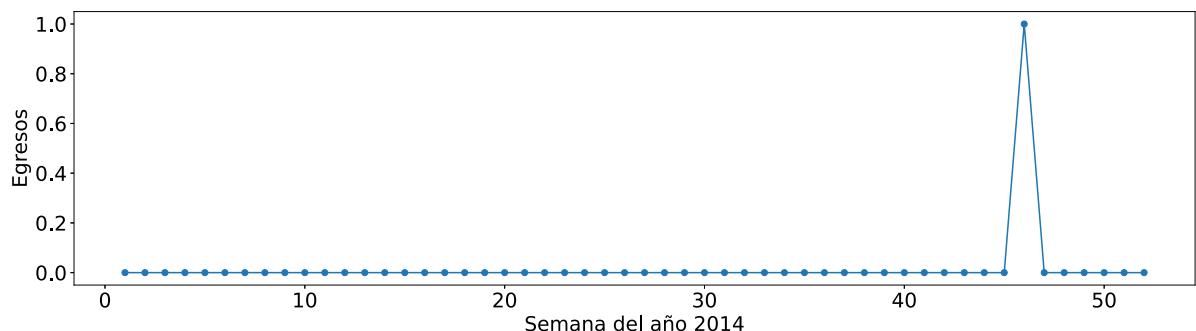
T690



C674



Z749

**2015**

In [8]: `import pandas as pd`

```
# Se cargan los datos
columns5 = ['EGRESO', 'DIAG_INI']
dataframe5 = pd.read_csv('EGRESO_2015.csv', usecols=columns5, nrows=2500000).dropna()
dataframe5
```

Out[8]:

	EGRESO	DIAG_INI
0	2015-01-03 00:00:00	C910
1	2015-01-03 00:00:00	C845
2	2015-01-03 00:00:00	C189
3	2015-01-03 00:00:00	C509
4	2015-01-03 00:00:00	C220
...	...	...
2499995	2015-02-09 00:00:00	O410
2499996	2015-03-12 00:00:00	K811
2499997	2015-04-08 00:00:00	O809
2499998	2015-05-10 00:00:00	O054
2499999	2015-06-10 00:00:00	P240

2500000 rows × 2 columns

```
In [17]: # Se importan las librerias necesarias
from epiweeks import Week, date

# Se convierten los string a objetos datetime en 'dataframe'
strfdtoriginal5 = '%Y-%m-%d %H:%M:%S'
dataframe5['EGRESO'] = pd.to_datetime(dataframe5['EGRESO'], errors='coerce', format=strfdtoriginal5)
dataframe5 = dataframe5.dropna()
dataframe5 = dataframe5.reset_index(drop=True)

# Se agrega una columna con los numeros de semana
dataframe5['sem'] = ''
nrows5 = len(dataframe5.index)
for i in range(nrows5):
    dfday5 = dataframe5['EGRESO'][i]
    if dfday5.year==2015:
        mydate5 = date(dfday5.year, dfday5.month, dfday5.day)
        numberweek5 = Week.fromdate(mydate5)
        dataframe5['sem'][i] = numberweek5.week

dataframe5 = dataframe5.dropna()
dataframe5 = dataframe5.reset_index(drop=True)
dataframe5
```

Out[17]:

	EGRESO	DIAG_INI	sem
<b>0</b>	2015-01-03	C910	53
<b>1</b>	2015-01-03	C845	53
<b>2</b>	2015-01-03	C189	53
<b>3</b>	2015-01-03	C509	53
<b>4</b>	2015-01-03	C220	53
...	...	...	...
<b>2499995</b>	2015-02-09	O410	6
<b>2499996</b>	2015-03-12	K811	10
<b>2499997</b>	2015-04-08	O809	14
<b>2499998</b>	2015-05-10	O054	19
<b>2499999</b>	2015-06-10	P240	23

2500000 rows × 3 columns

In [83]: # Se forma el nuevo dataframe 'semanas' con el numero de semana del año y la cantidad de egresos en cada semana  
semanas5 = dataframe5['sem'].value\_counts()  
semanas5 = semanas5.drop('', axis = 0)  
semanas5 = semanas5.sort\_index()  
semanas5

```
Out[83]: 1    44314
         2    47507
         3    48330
         4    49381
         5    46542
         6    49035
         7    48313
         8    49213
         9    48990
        10   49905
        11   46079
        12   49712
        13   44580
        14   46364
        15   47680
        16   48058
        17   47197
        18   44426
        19   47733
        20   48187
        21   48794
        22   48484
        23   48844
        24   47430
        25   46821
        26   48245
        27   49058
        28   48403
        29   48423
        30   49374
        31   49081
        32   49114
        33   49120
        34   49473
        35   49948
        36   50555
        37   46763
        38   50028
        39   50709
        40   51615
        41   49976
        42   48570
        43   49416
        44   46316
        45   49821
        46   45952
        47   49110
        48   49021
        49   47650
        50   46348
        51   35336
        53   14149
Name: sem, dtype: int64
```

```
In [85]: semanas5[52] = 0  
semanas5 = semanas5.sort_index()  
semanas5
```

```
Out[85]: 1    44314
         2    47507
         3    48330
         4    49381
         5    46542
         6    49035
         7    48313
         8    49213
         9    48990
        10   49905
        11   46079
        12   49712
        13   44580
        14   46364
        15   47680
        16   48058
        17   47197
        18   44426
        19   47733
        20   48187
        21   48794
        22   48484
        23   48844
        24   47430
        25   46821
        26   48245
        27   49058
        28   48403
        29   48423
        30   49374
        31   49081
        32   49114
        33   49120
        34   49473
        35   49948
        36   50555
        37   46763
        38   50028
        39   50709
        40   51615
        41   49976
        42   48570
        43   49416
        44   46316
        45   49821
        46   45952
        47   49110
        48   49021
        49   47650
        50   46348
        51   35336
        52    0
        53  14149
Name: sem, dtype: int64
```

```
In [86]: # Se pasa a un nuevo dataframe
newdf5 = pd.DataFrame()
newdf5[ 'sem' ] = semanas5.index
newdf5[ 'casos' ] = ''
nr5 = len(newdf5.index)
for i in range (nr5):
    newdf5[ 'casos' ][i] = int(semanas5[i+1])
newdf5
```

Out[86]:

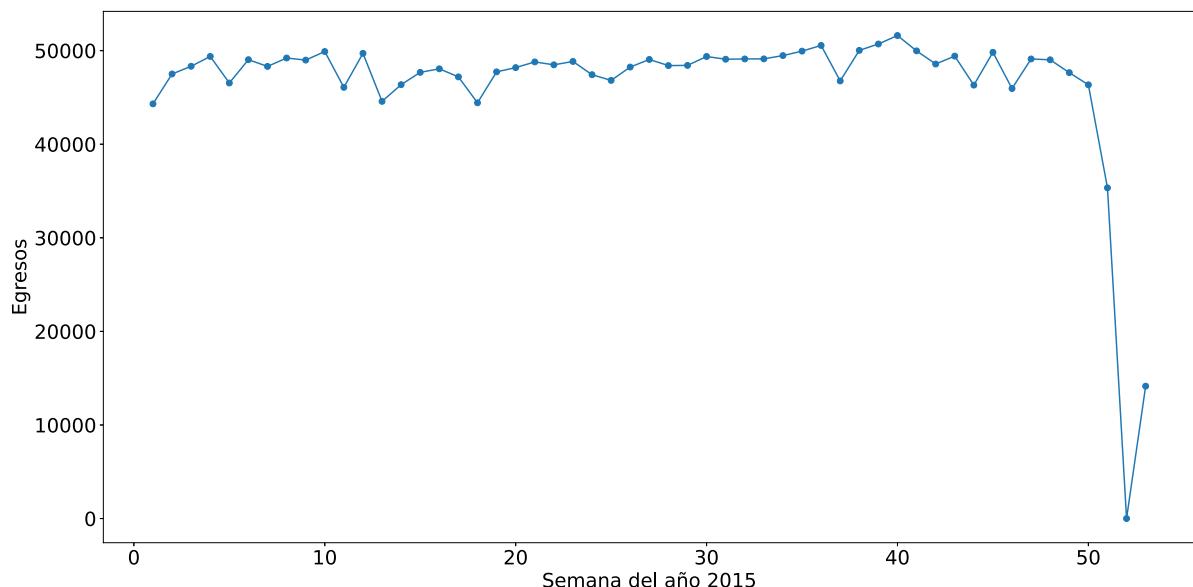
	sem	casos
0	1	44314
1	2	47507
2	3	48330
3	4	49381
4	5	46542
5	6	49035
6	7	48313
7	8	49213
8	9	48990
9	10	49905
10	11	46079
11	12	49712
12	13	44580
13	14	46364
14	15	47680
15	16	48058
16	17	47197
17	18	44426
18	19	47733
19	20	48187
20	21	48794
21	22	48484
22	23	48844
23	24	47430
24	25	46821
25	26	48245
26	27	49058
27	28	48403
28	29	48423
29	30	49374
30	31	49081
31	32	49114
32	33	49120
33	34	49473
34	35	49948

sem	casos
<b>35</b>	36 50555
<b>36</b>	37 46763
<b>37</b>	38 50028
<b>38</b>	39 50709
<b>39</b>	40 51615
<b>40</b>	41 49976
<b>41</b>	42 48570
<b>42</b>	43 49416
<b>43</b>	44 46316
<b>44</b>	45 49821
<b>45</b>	46 45952
<b>46</b>	47 49110
<b>47</b>	48 49021
<b>48</b>	49 47650
<b>49</b>	50 46348
<b>50</b>	51 35336
<b>51</b>	52 0
<b>52</b>	53 14149

```
In [137]: # Se importan las librerías necesarias
import matplotlib.pyplot as plt

año5 = '2015'
print('Egresos ' + año5)
# Se establece el tamaño de la figura
plt.rcParams.update({'font.size': 20})
plt.figure(figsize=(20, 10))
# Se define que se unan los puntos en la gráfica
plt.scatter(semanas5.index, newdf5.casos)
# Se definen las coordenadas 'x' y 'y'
plt.plot(semanas5.index, newdf5.casos)
# Se coloca un título para el eje x
plt.xlabel("Semana del año " + año5)
# Se coloca un título para el eje y
plt.ylabel("Egresos")
# Se guarda la figura como un archivo
plt.savefig(año5 + '/Egresos' + año5 + '.jpg', format='jpg')
# Se muestra la figura en la terminal
plt.show()
```

Egresos 2015



```
In [138]: # Se crea el dataframe 'diagnosticos' con los nombre de los diferentes diagnosticos sin repeticion
diagnosticos5 = dataframe5['DIAG_INI'].value_counts()
# Se ordena del diagnostico con mayore numero de egresos al diagnostico con menor numero de egresos
diagnosticos5 = diagnosticos5.sort_values(ascending = False)
# Se crea el dataframe 'cie' con los nombres de los diagnosticos, los numeros de las semanas, y la cantidad de diagnosticos de dicha enfermedad en cada semana
cie5 = dataframe5.groupby(['DIAG_INI', 'sem']).count()

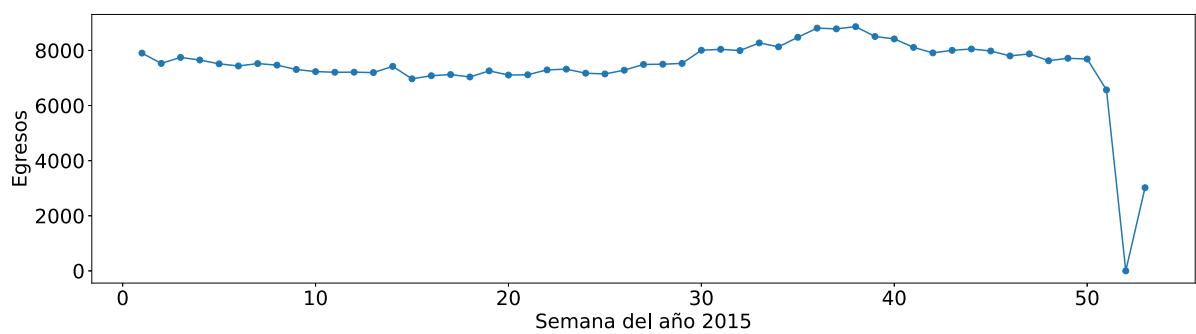
# Se importa la libreria necesaria para la figura
import matplotlib.pyplot as plt

plt.rcParams.update({'font.size': 20})

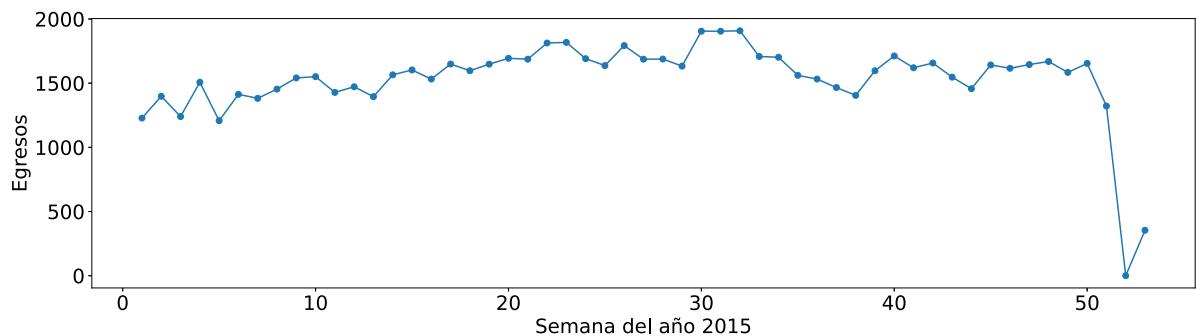
print('Año ' + año5 + '\n')
# Se inicia un contador para controlar la cantidad de graficos a generar
i5 = 0
ndiagnosticos5 = len(diagnosticos5.index)
maximo5 = ndiagnosticos5-5
# Proceso de generación de las figuras
for name5 in diagnosticos5.index:
    if i5 < 25 or i5 >= maximo5:
        y5 = []
        for index5 in semanas5.index:
            try:
                y5.append(cie5['EGRESO'][name5, index5])
            except:
                y5.append(0)
        print('\n' + name5)
        plt.figure(figsize=(20, 5))
        plt.scatter(semanas5.index, y5)
        plt.plot(semanas5.index, y5)
        plt.xlabel("Semana del año " + año5)
        plt.ylabel("Egresos")
        plt.savefig(año5 + '/' + name5 + '_' + año5 + '.jpg', format='jpg')
        plt.show()
    i5 = i5+1
```

Año 2015

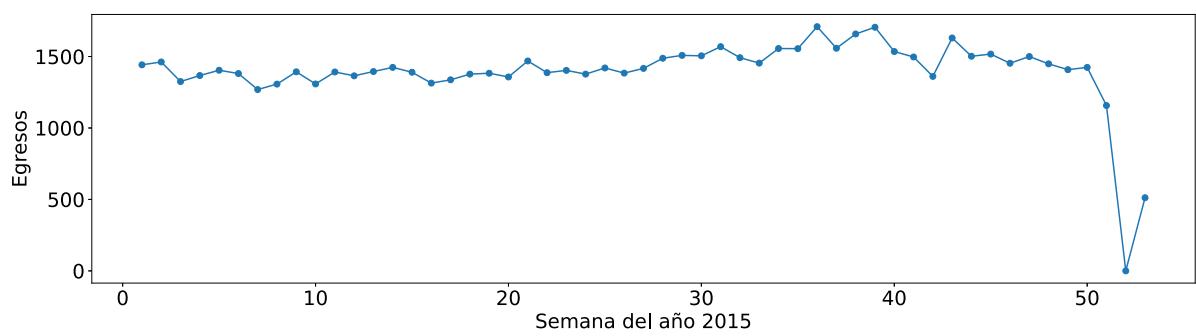
0809



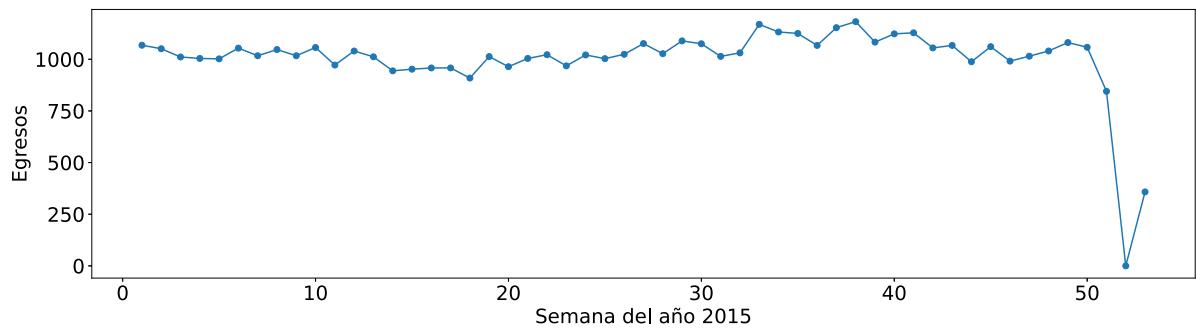
N189



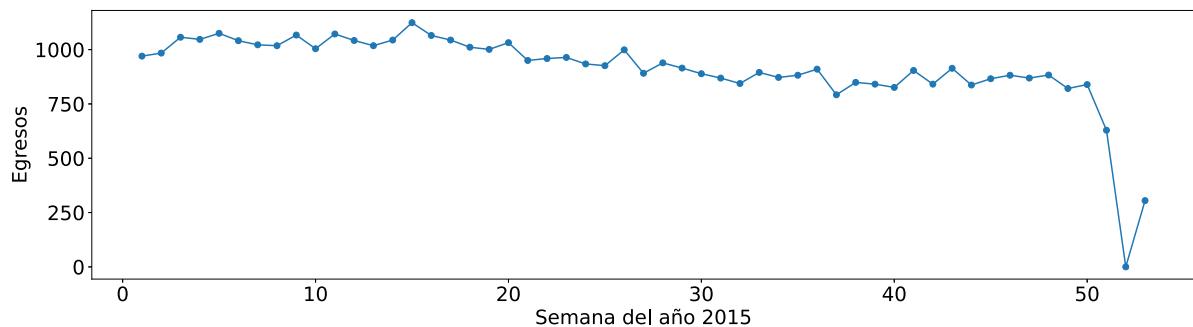
0800



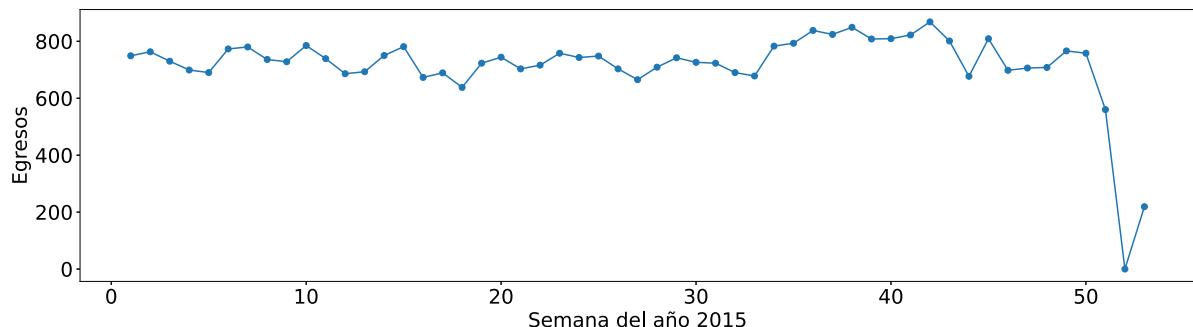
0829



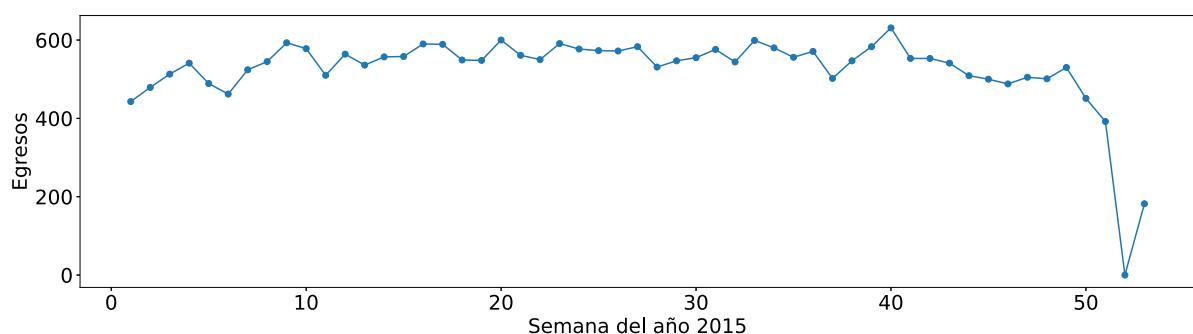
0064



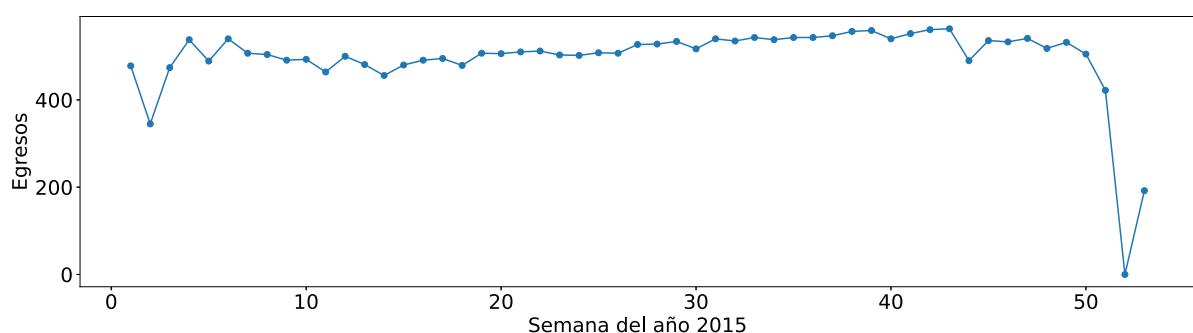
0342



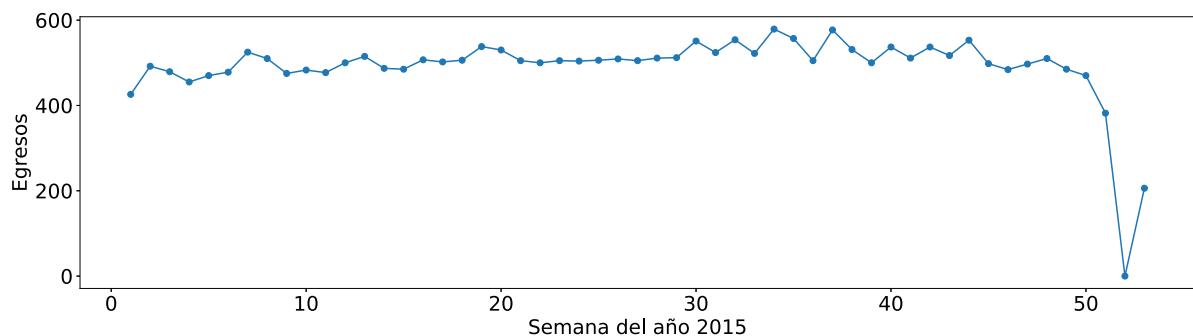
K358



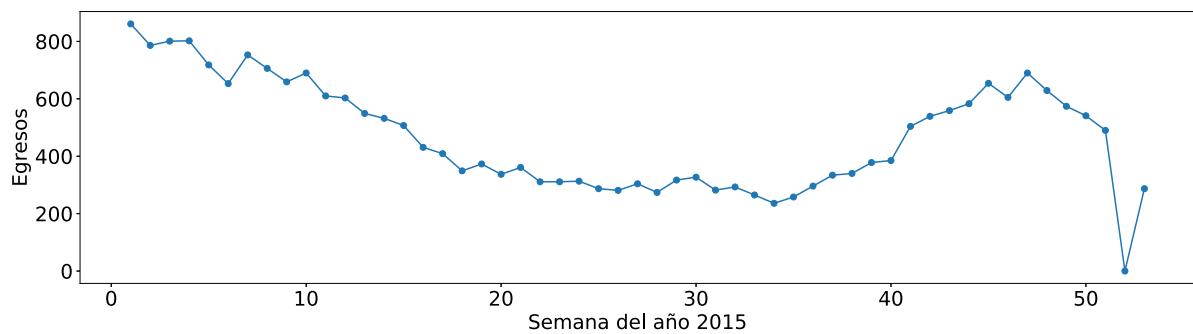
Z491



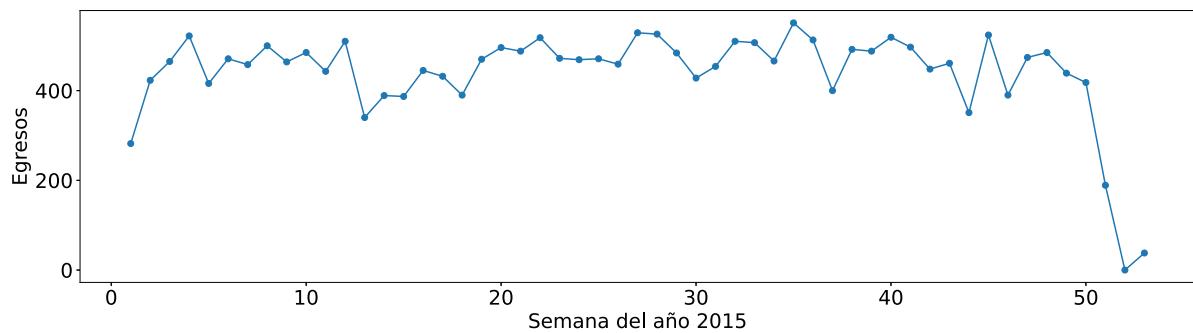
0429



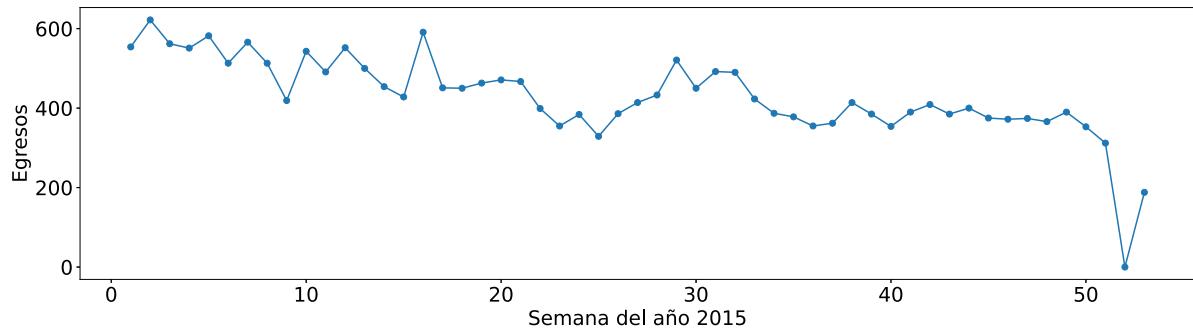
J189



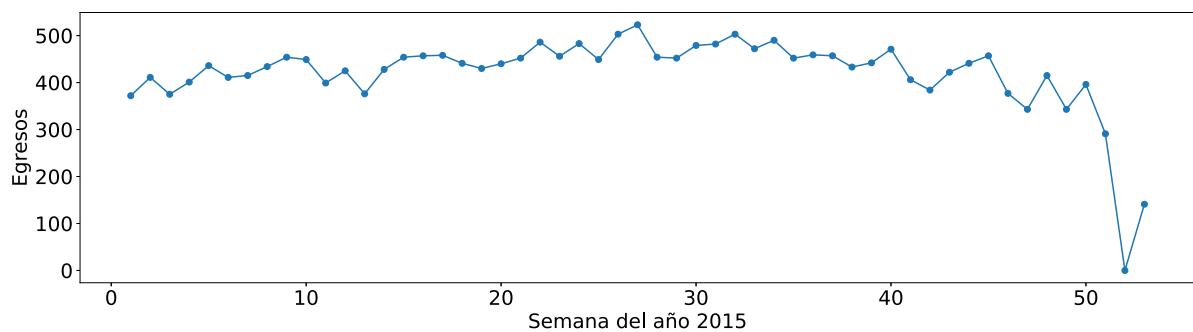
K409



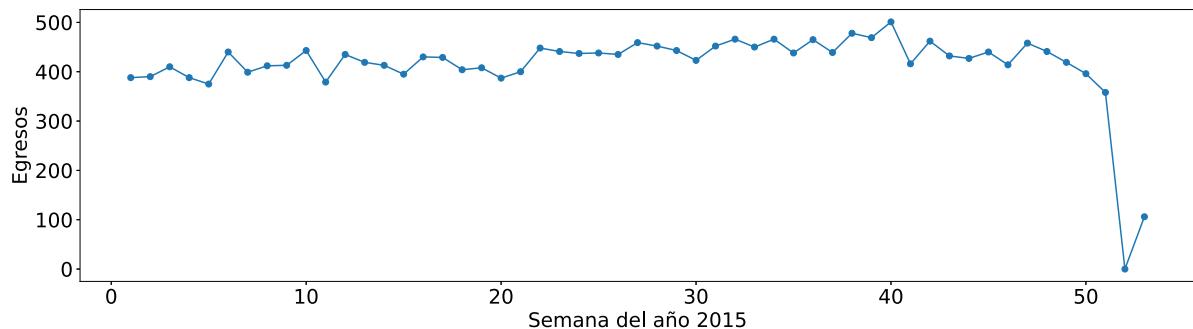
N185



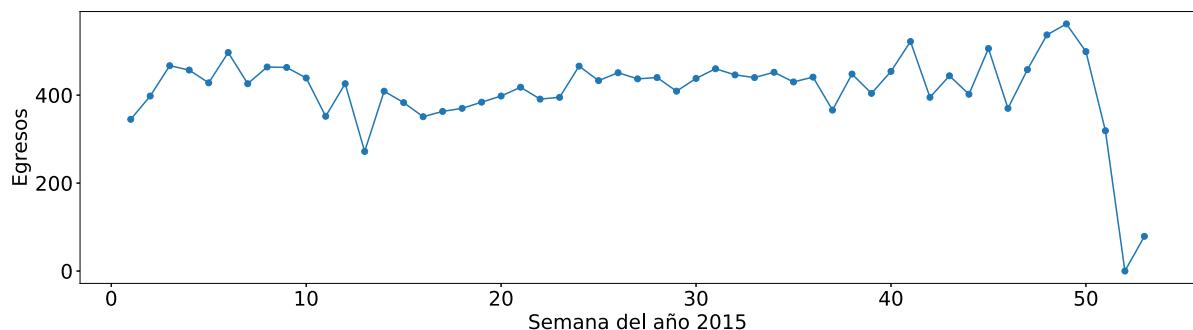
0470



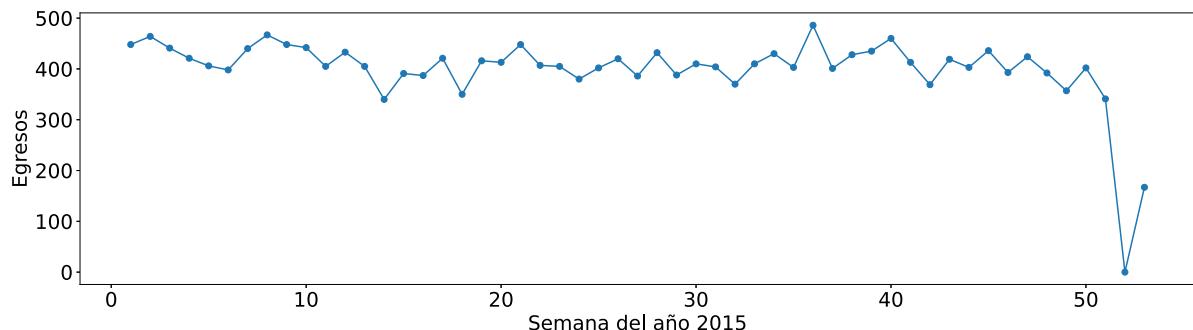
0410



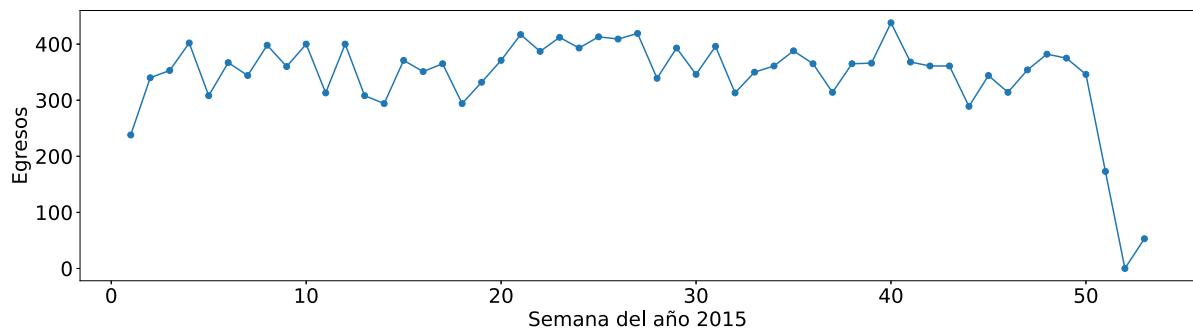
C509



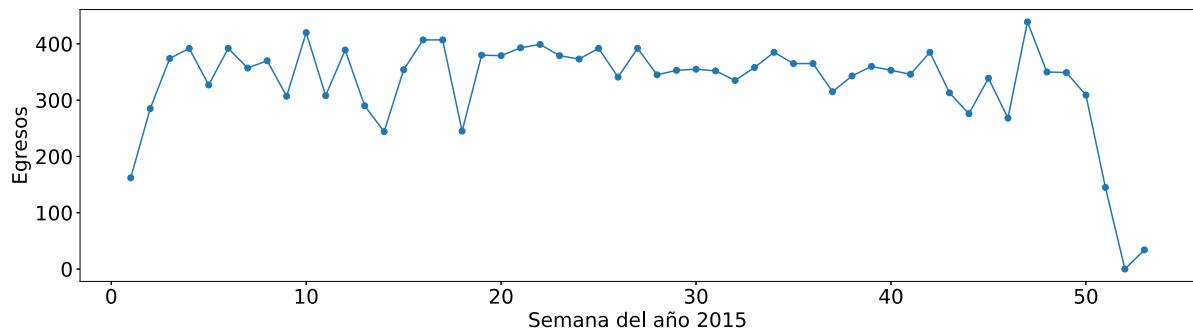
0339



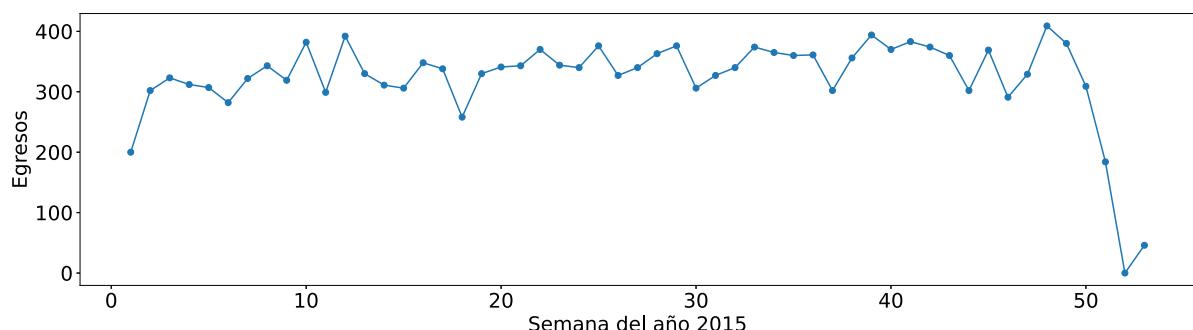
K811



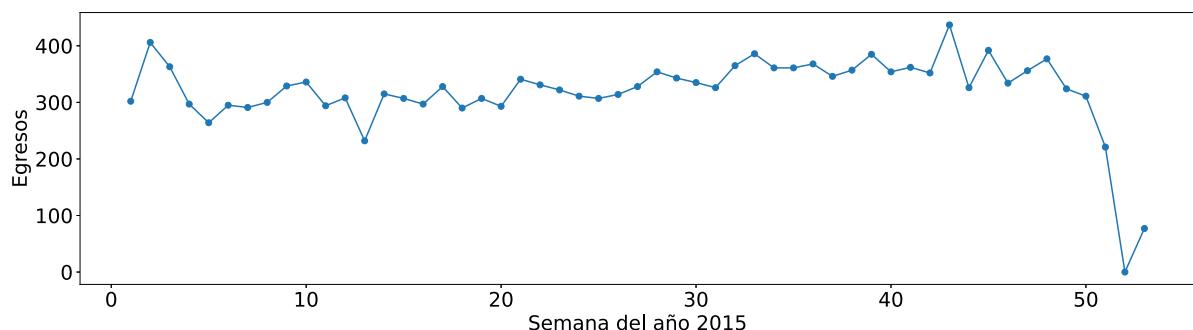
D259



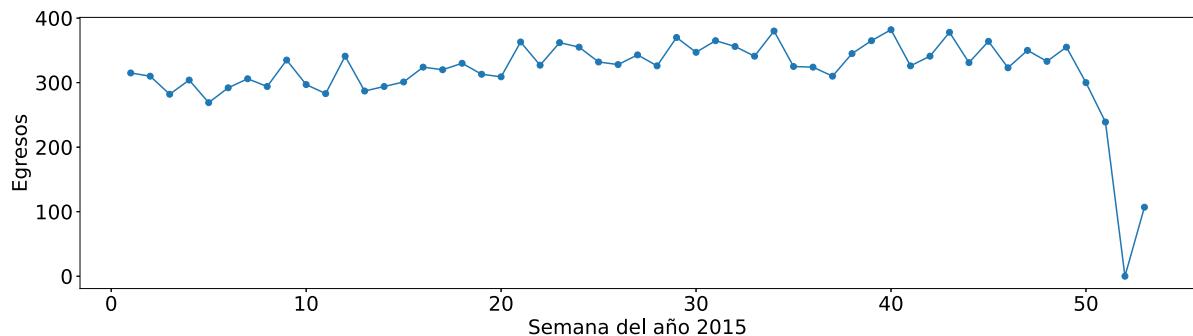
K801



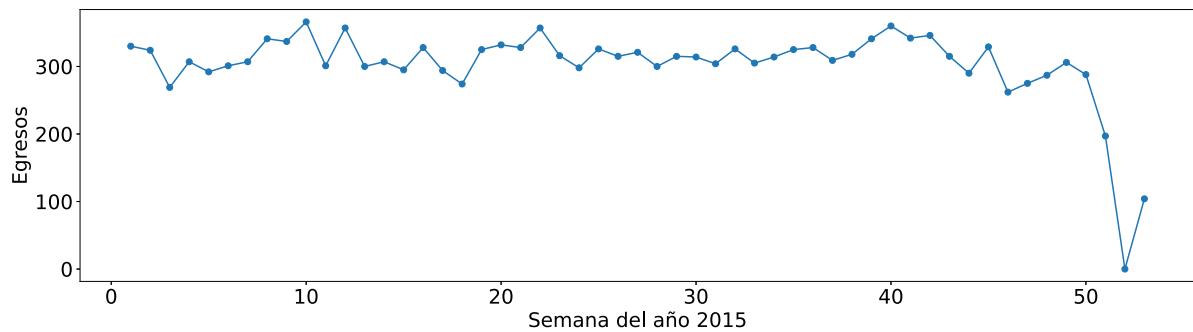
C910



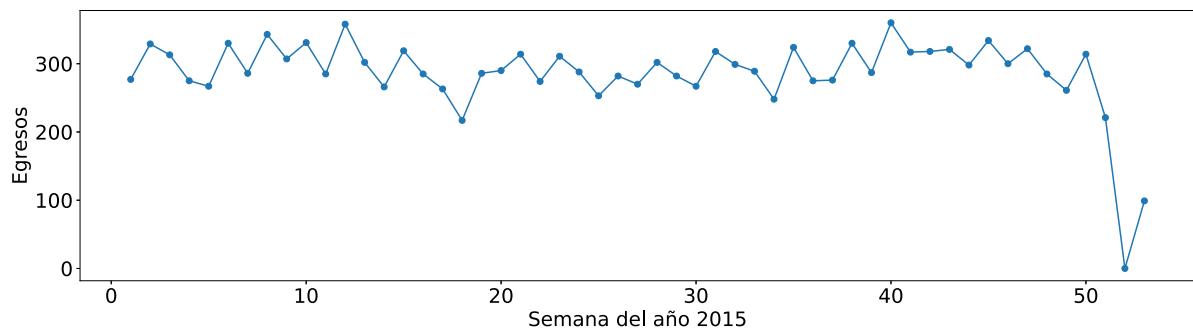
P073



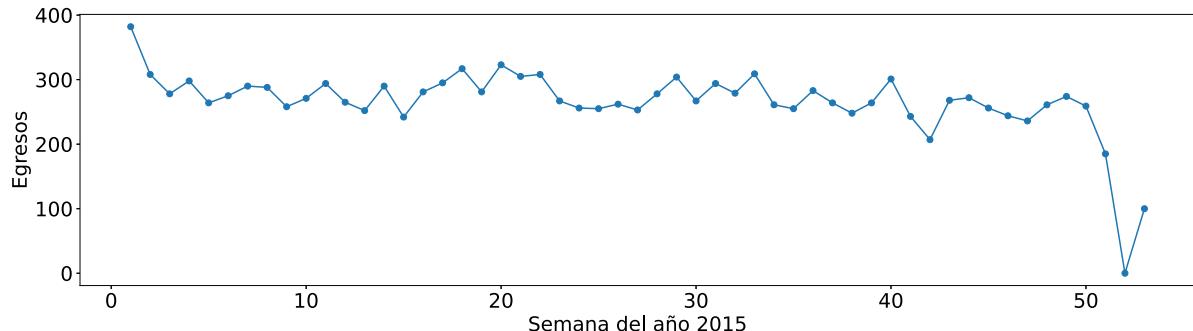
K37X



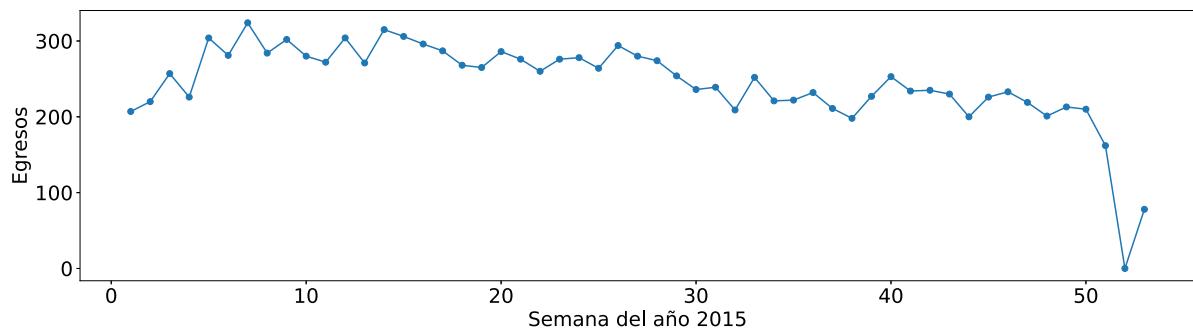
013X



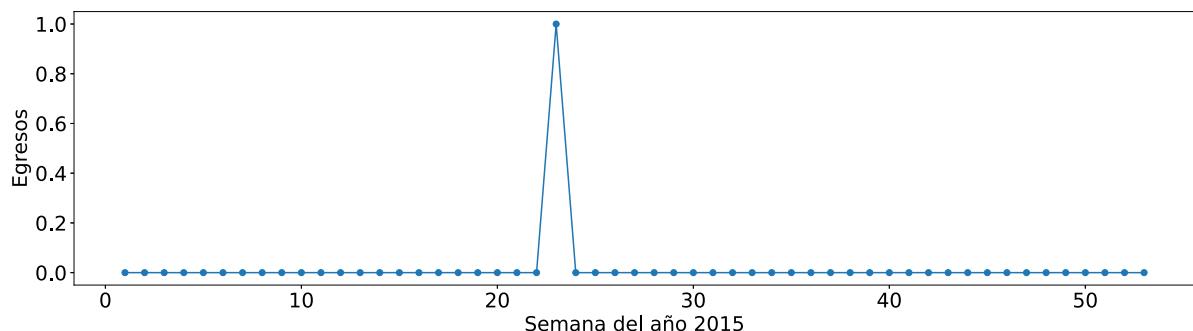
E119



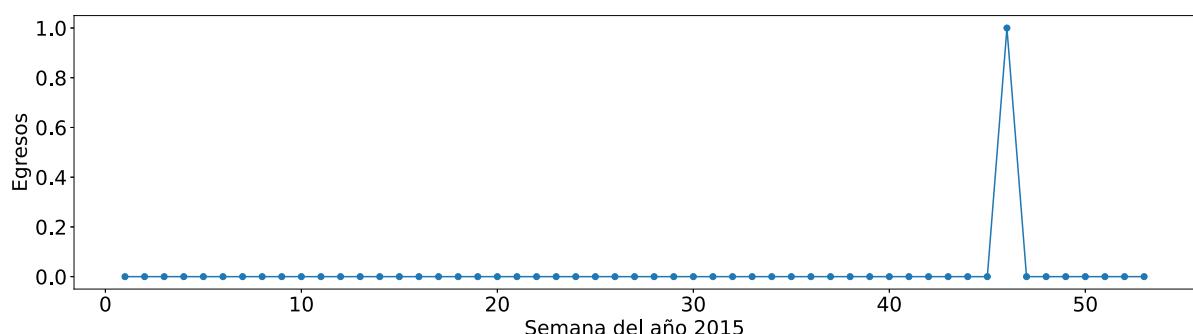
0200



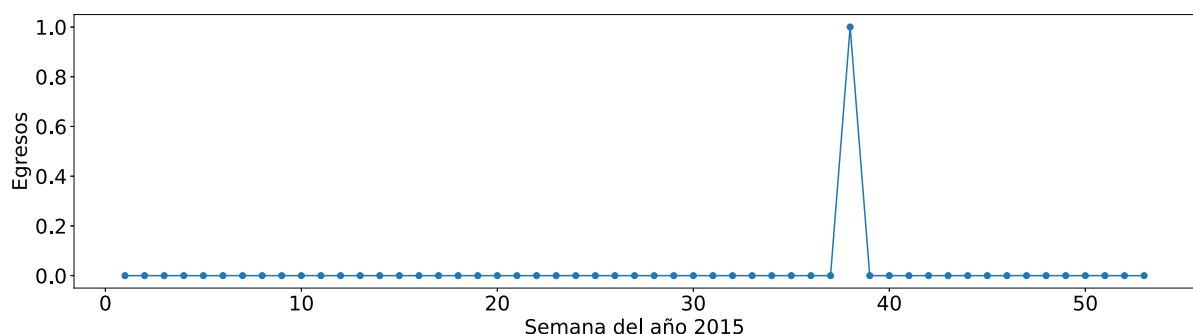
Z910



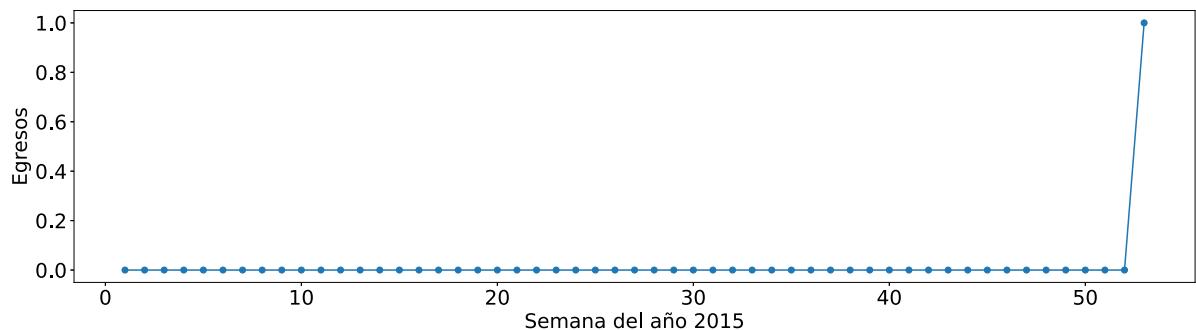
E070



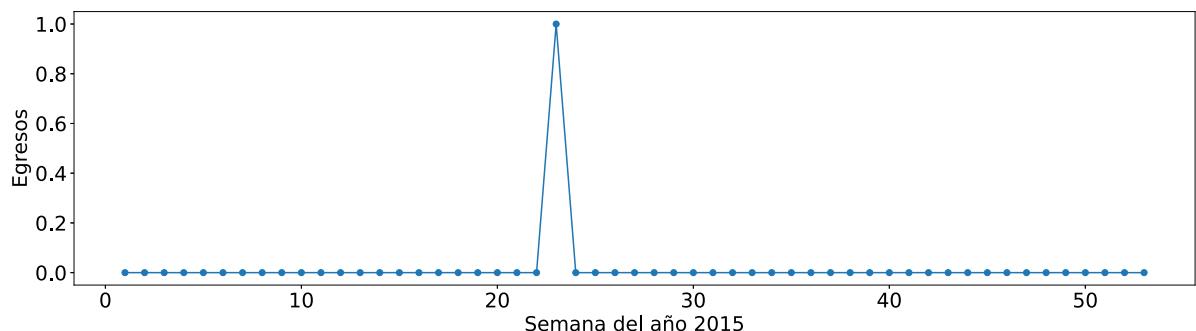
C882



M962



F136

**2016**

In [9]: `import pandas as pd`

```
# Se cargan los datos
columns6 = ['EGRESO', 'DIAG_INI']
dataframe6 = pd.read_csv('EGRESO_2016.csv', usecols=columns6).dropna()
dataframe6
```

Out[9]:

	EGRESO	DIAG_INI
0	12/30/2015 00:00	N185
1	12/31/2015 00:00	N185
2	12/31/2015 00:00	N185
3	01/02/2016 00:00	N185
4	01/02/2016 00:00	N185
...	...	...
<b>1048570</b>	08/24/2016 00:00	E115
<b>1048571</b>	08/17/2016 00:00	O809
<b>1048572</b>	08/21/2016 00:00	O809
<b>1048573</b>	08/22/2016 00:00	O809
<b>1048574</b>	08/19/2016 00:00	O809

1048574 rows × 2 columns

```
In [18]: # Se importan las librerias necesarias
from epiweeks import Week, date

# Se convierten los string a objetos datetime en 'dataframe'
strfdtoriginal6 = '%m/%d/%Y %H:%M'
dataframe6['EGRESO'] = pd.to_datetime(dataframe6['EGRESO'], errors='coerce', format=strfdtoriginal6)
dataframe6 = dataframe6.dropna()
dataframe6 = dataframe6.reset_index(drop=True)

# Se agrega una columna con los numeros de semana
dataframe6['sem'] = ''
nrows6 = len(dataframe6.index)
for i in range(nrows6):
    dfday6 = dataframe6['EGRESO'][i]
    if dfday6.year==2016:
        mydate6 = date(dfday6.year, dfday6.month, dfday6.day)
        numberweek6 = Week.fromdate(mydate6)
        dataframe6['sem'][i] = numberweek6.week

dataframe6 = dataframe6.dropna()
dataframe6 = dataframe6.reset_index(drop=True)
dataframe6
```

Out[18]:

	EGRESO	DIAG_INI	sem
<b>0</b>	2015-12-30	N185	
<b>1</b>	2015-12-31	N185	
<b>2</b>	2015-12-31	N185	
<b>3</b>	2016-01-02	N185	52
<b>4</b>	2016-01-02	N185	52
...	...	...	...
<b>1048569</b>	2016-08-24	E115	34
<b>1048570</b>	2016-08-17	O809	33
<b>1048571</b>	2016-08-21	O809	34
<b>1048572</b>	2016-08-22	O809	34
<b>1048573</b>	2016-08-19	O809	33

1048574 rows × 3 columns

In [89]: # Se forma el nuevo dataframe 'semanas' con el numero de semana del año y la cantidad de egresos en cada semana

```
semanas6 = dataframe6['sem'].value_counts()
semanas6 = semanas6.drop('', axis = 0)
semanas6 = semanas6.sort_index()
semanas6
```

```
Out[89]: 1    17589
         2    19491
         3    19832
         4    20191
         5    19086
         6    20157
         7    19888
         8    20511
         9    20626
        10   20529
        11   20988
        12   17365
        13   19319
        14   20001
        15   20455
        16   19735
        17   20120
        18   19200
        19   19319
        20   19965
        21   20731
        22   19958
        23   20423
        24   20138
        25   19626
        26   19910
        27   20014
        28   20014
        29   20375
        30   20131
        31   20075
        32   20357
        33   20336
        34   20555
        35   20810
        36   21251
        37   20265
        38   21211
        39   21159
        40   20842
        41   20627
        42   20497
        43   20288
        44   18737
        45   19961
        46   19748
        47   18405
        48   19142
        49   18985
        50   18585
        51   18338
        52   16945
Name: sem, dtype: int64
```

```
In [90]: # Se pasa a un nuevo dataframe
newdf6 = pd.DataFrame()
newdf6[ 'sem' ] = semanas6.index
newdf6[ 'casos' ] = ''
nr6 = len(newdf6.index)
for i in range (nr6):
    newdf6[ 'casos' ][i] = int(semanas6[i+1])
newdf6
```

Out[90]:

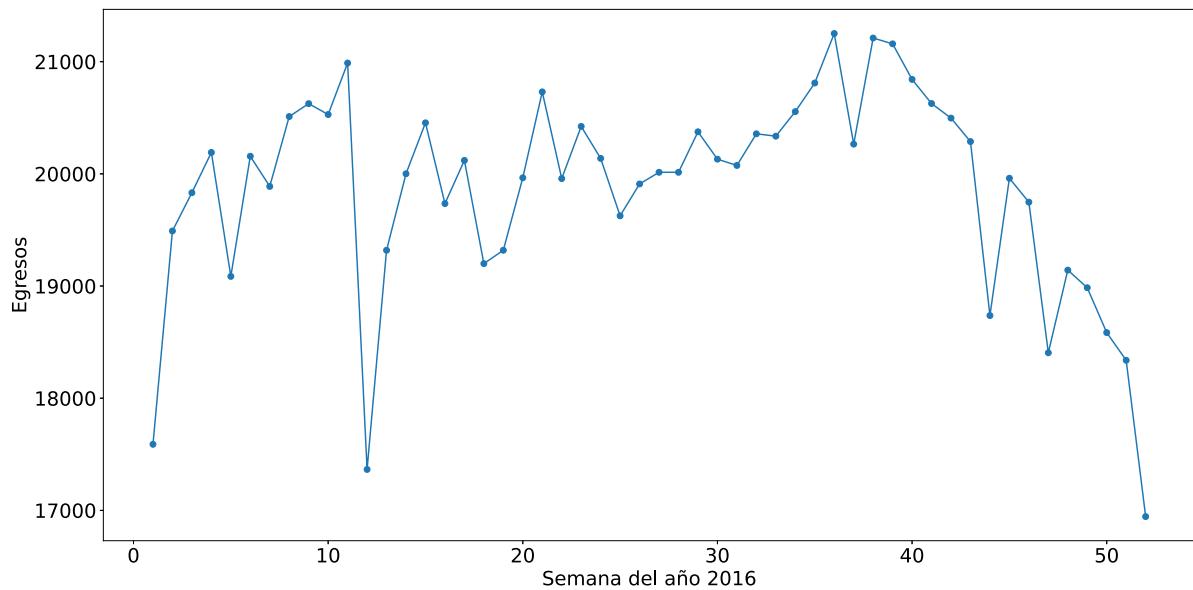
	sem	casos
0	1	17589
1	2	19491
2	3	19832
3	4	20191
4	5	19086
5	6	20157
6	7	19888
7	8	20511
8	9	20626
9	10	20529
10	11	20988
11	12	17365
12	13	19319
13	14	20001
14	15	20455
15	16	19735
16	17	20120
17	18	19200
18	19	19319
19	20	19965
20	21	20731
21	22	19958
22	23	20423
23	24	20138
24	25	19626
25	26	19910
26	27	20014
27	28	20014
28	29	20375
29	30	20131
30	31	20075
31	32	20357
32	33	20336
33	34	20555
34	35	20810

sem	casos
<b>35</b>	36 21251
<b>36</b>	37 20265
<b>37</b>	38 21211
<b>38</b>	39 21159
<b>39</b>	40 20842
<b>40</b>	41 20627
<b>41</b>	42 20497
<b>42</b>	43 20288
<b>43</b>	44 18737
<b>44</b>	45 19961
<b>45</b>	46 19748
<b>46</b>	47 18405
<b>47</b>	48 19142
<b>48</b>	49 18985
<b>49</b>	50 18585
<b>50</b>	51 18338
<b>51</b>	52 16945

```
In [139]: # Se importan las librerías necesarias
import matplotlib.pyplot as plt

año6 = '2016'
print('Egresos ' + año6)
# Se establece el tamaño de la figura
plt.rcParams.update({'font.size': 20})
plt.figure(figsize=(20, 10))
# Se define que se unan los puntos en la gráfica
plt.scatter(semanas6.index, newdf6.casos)
# Se definen las coordenadas 'x' y 'y'
plt.plot(semanas6.index, newdf6.casos)
# Se coloca un título para el eje x
plt.xlabel("Semana del año " + año6)
# Se coloca un título para el eje y
plt.ylabel("Egresos")
# Se guarda la figura como un archivo
plt.savefig(año6 + '/Egresos' + año6 + '.jpg', format='jpg')
# Se muestra la figura en la terminal
plt.show()
```

Egresos 2016



```
In [140]: # Se crea el dataframe 'diagnosticos' con los nombre de los diferentes diagnosticos sin repeticion
diagnosticos6 = dataframe6['DIAG_INI'].value_counts()
# Se ordena del diagnostico con mayore numero de egresos al diagnostico con menor numero de egresos
diagnosticos6 = diagnosticos6.sort_values(ascending = False)
# Se crea el dataframe 'cie' con los nombres de los diagnosticos, los numeros de las semanas, y la cantidad de diagnosticos de dicha enfermedad en cada semana
cie6 = dataframe6.groupby(['DIAG_INI', 'sem']).count()

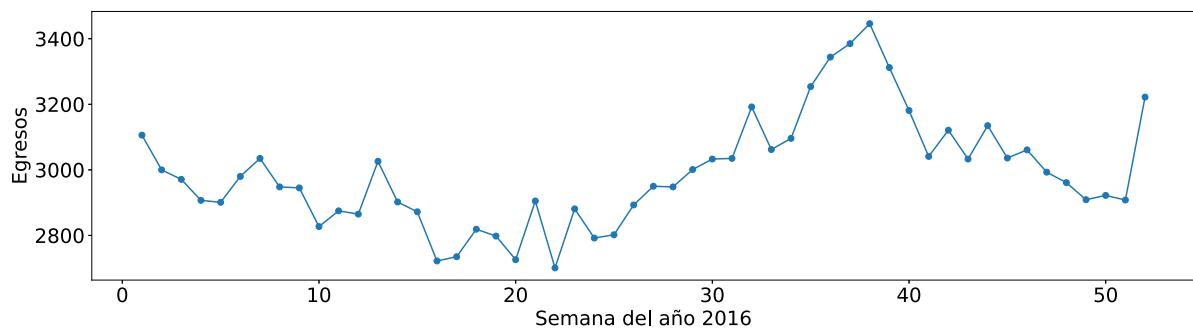
# Se importa la libreria necesaria para la figura
import matplotlib.pyplot as plt

plt.rcParams.update({'font.size': 20})

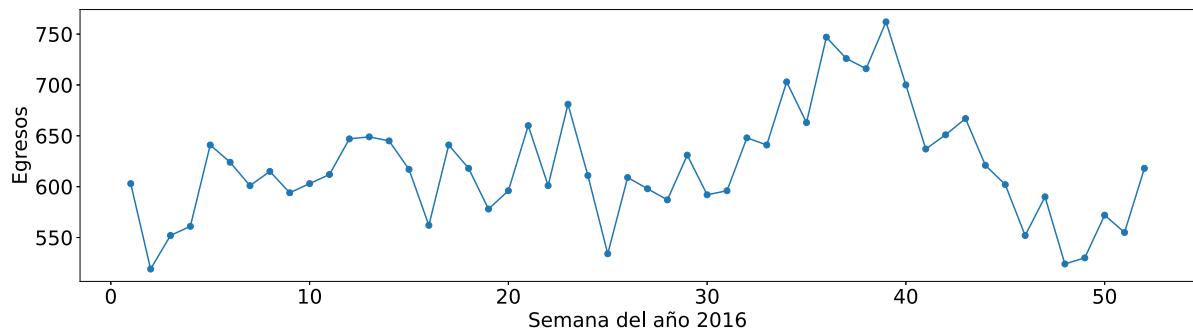
print('Año ' + año6 + '\n')
# Se inicia un contador para controlar la cantidad de graficos a generar
i6 = 0
ndiagnosticos6 = len(diagnosticos6.index)
maximo6 = ndiagnosticos6-5
# Proceso de generación de las figuras
for name6 in diagnosticos6.index:
    if i6 < 25 or i6 >= maximo6:
        y6 = []
        for index6 in semanas6.index:
            try:
                y6.append(cie6['EGRESO'][name6, index6])
            except:
                y6.append(0)
        print('\n' + name6)
        plt.figure(figsize=(20, 5))
        plt.scatter(semanas6.index, y6)
        plt.plot(semanas6.index, y6)
        plt.xlabel("Semana del año " + año6)
        plt.ylabel("Egresos")
        plt.savefig(año6 + '/' + name6 + '_' + año6 + '.jpg', format='jpg')
        plt.show()
    i6 = i6+1
```

Año 2016

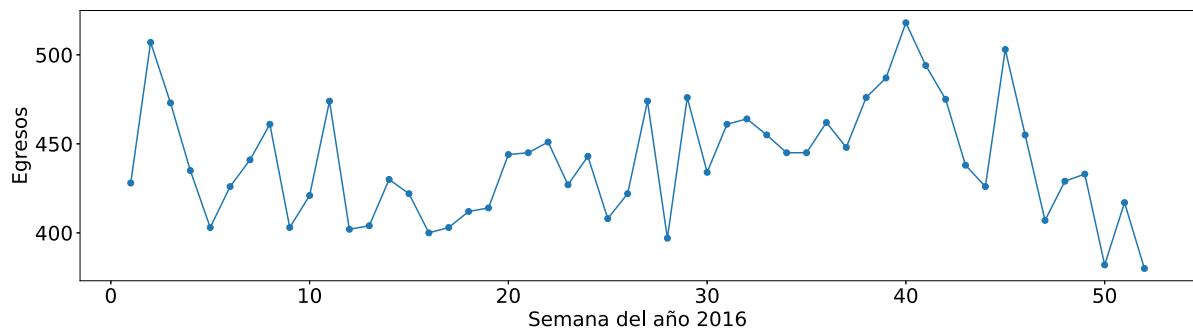
0809



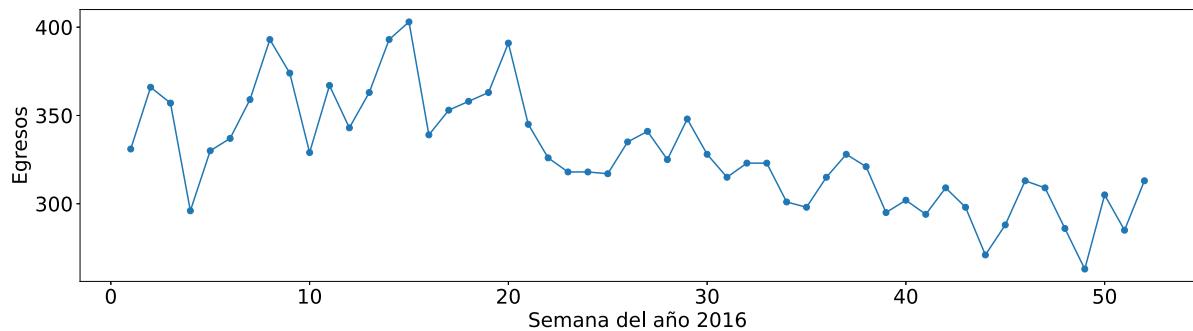
0800



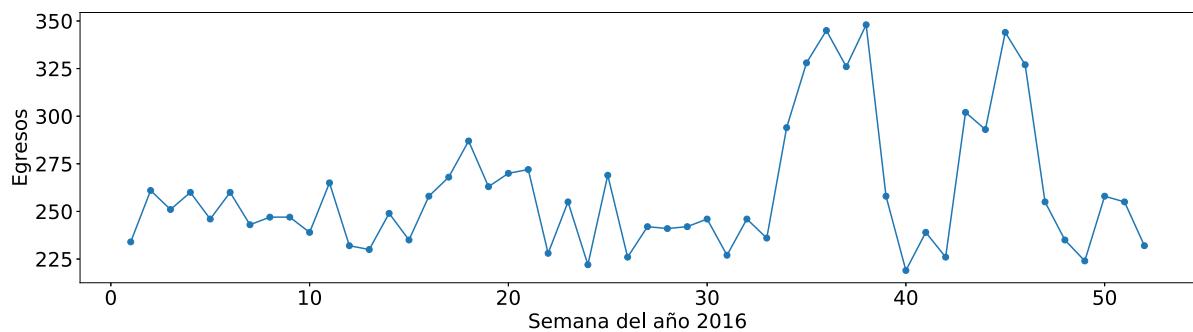
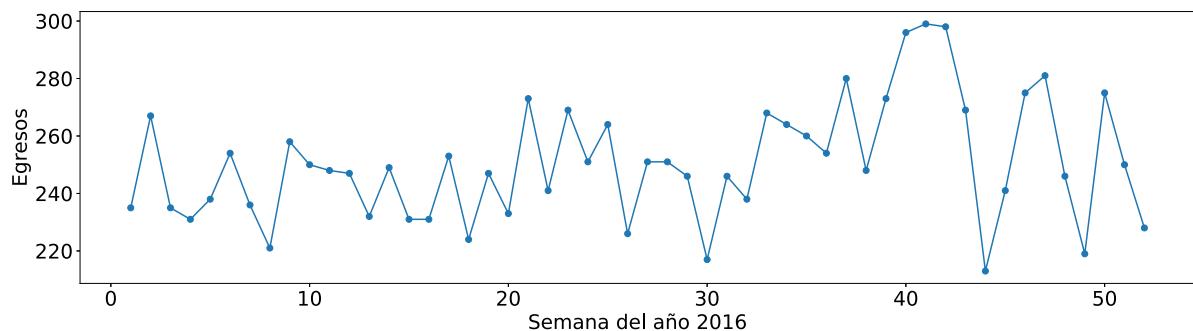
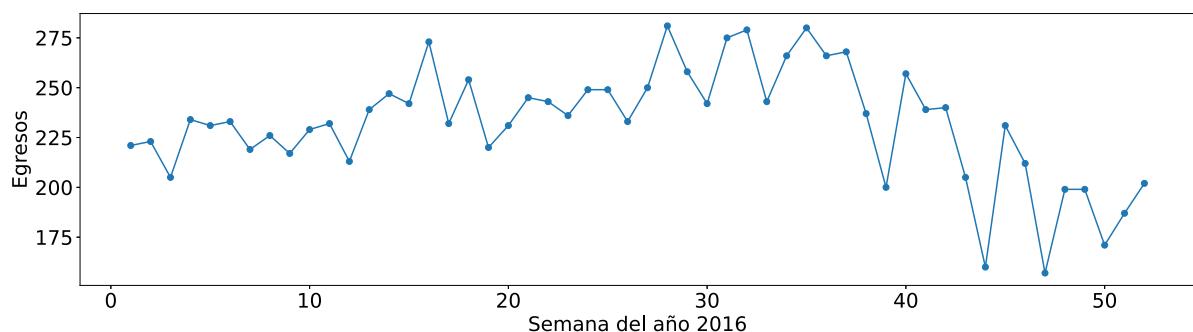
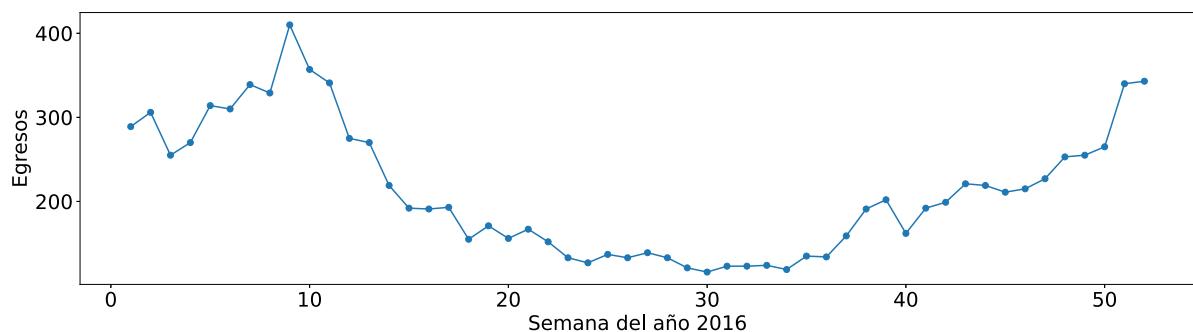
0829

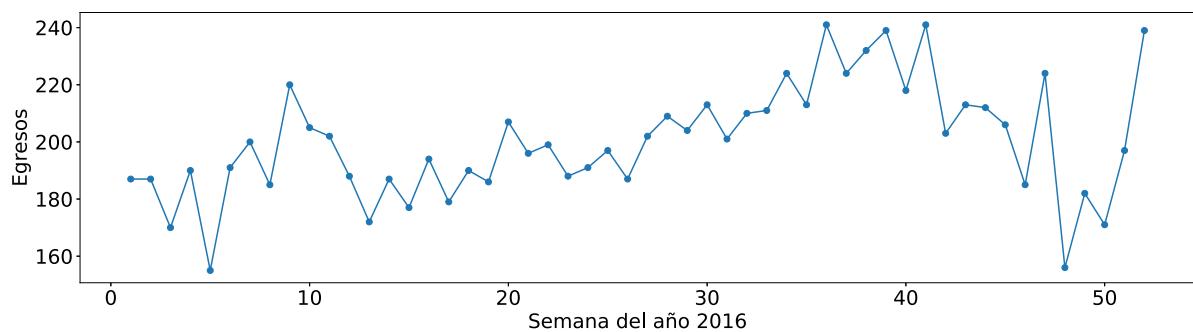
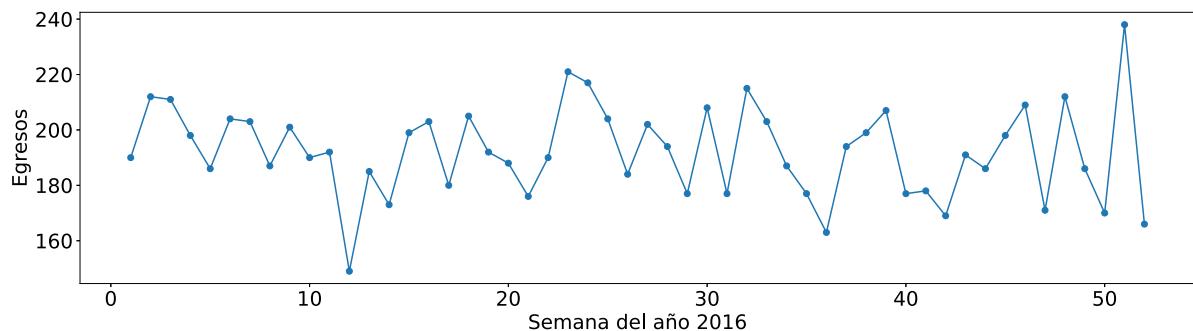
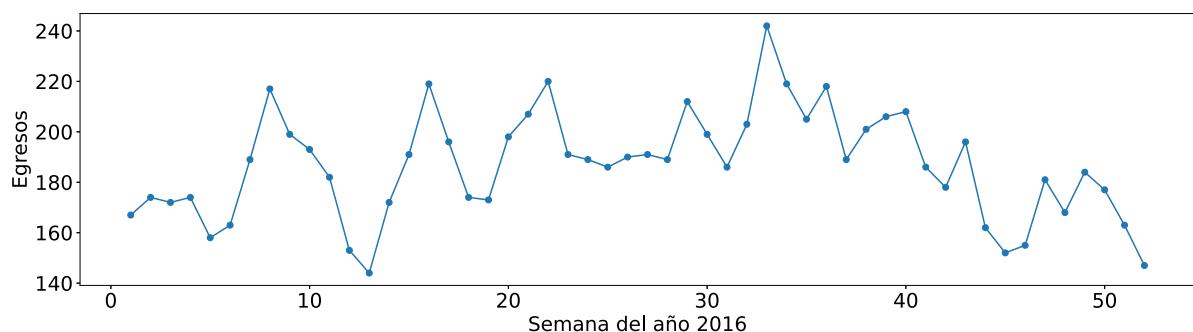
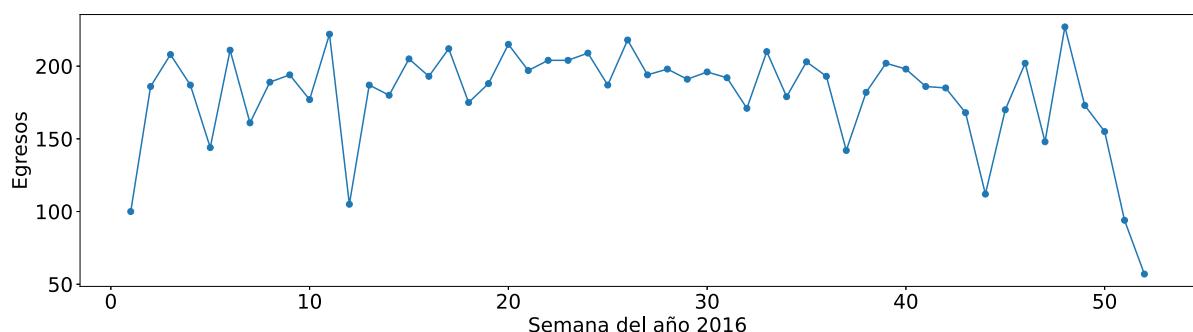


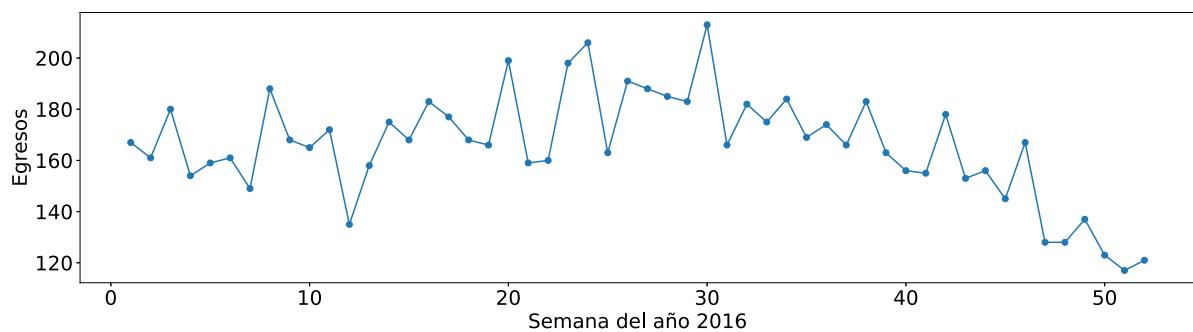
0064



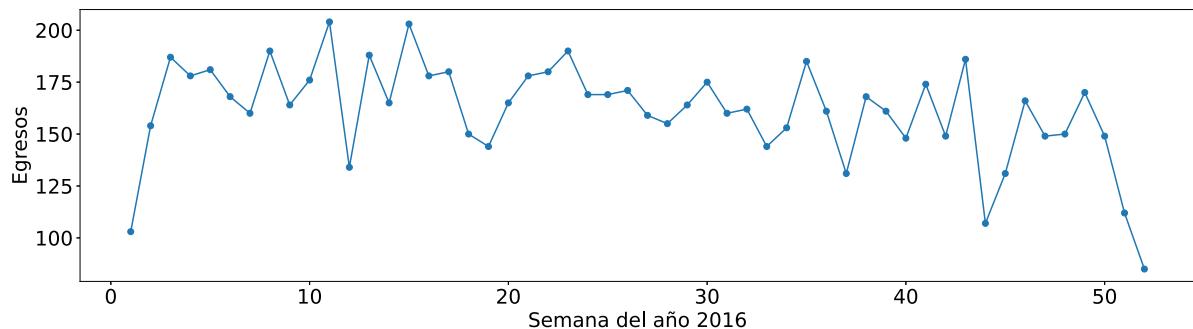
N189

**0342****K358****J189****0429**

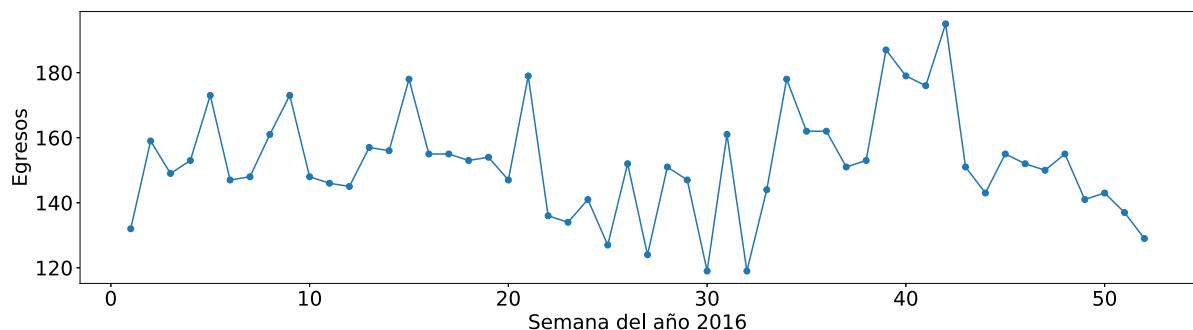
**C910****0410****K409****0470**



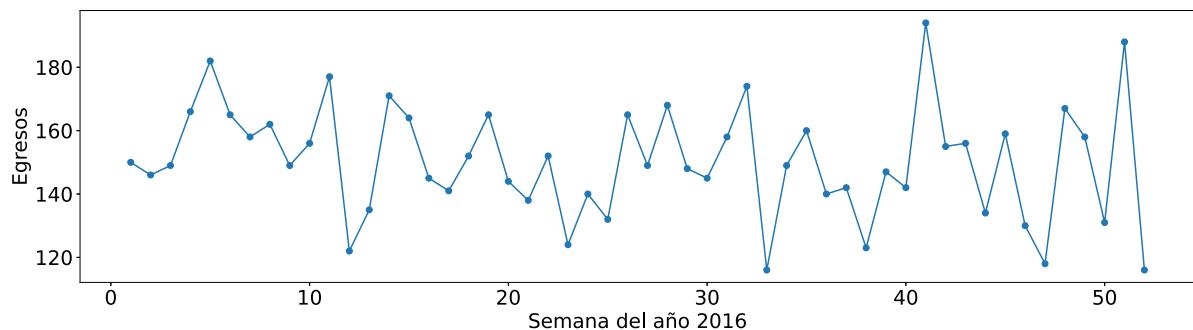
K801



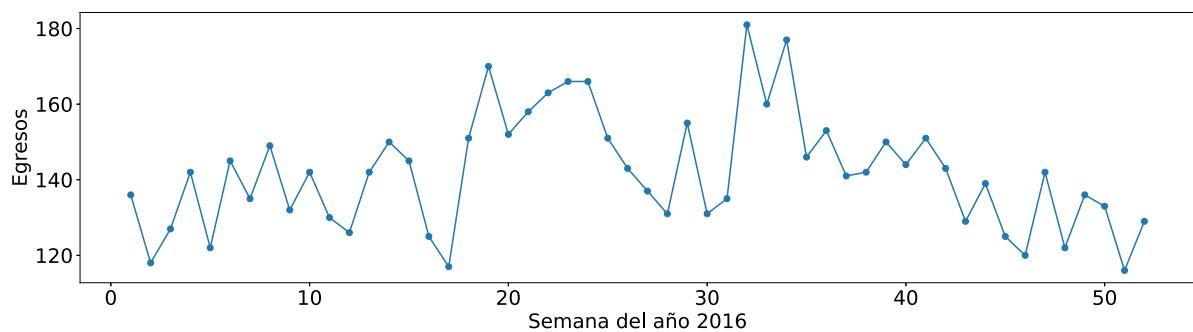
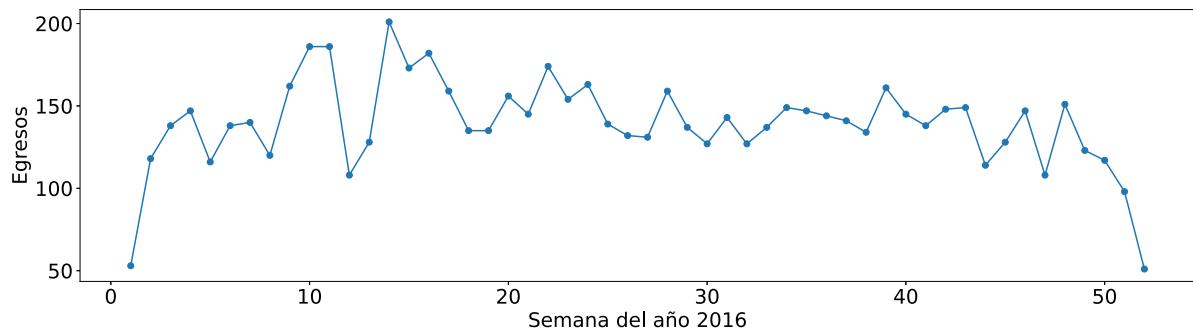
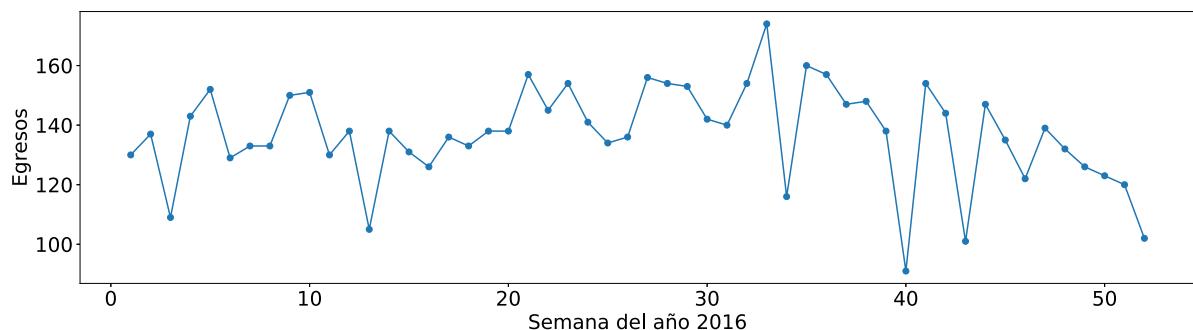
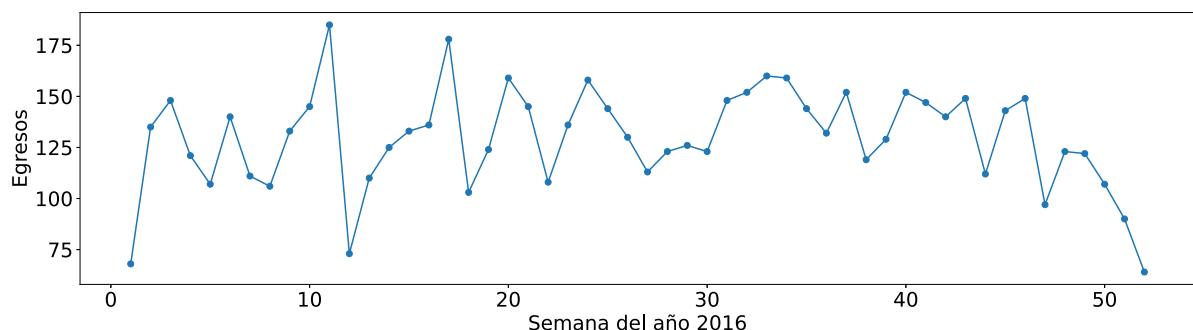
0339

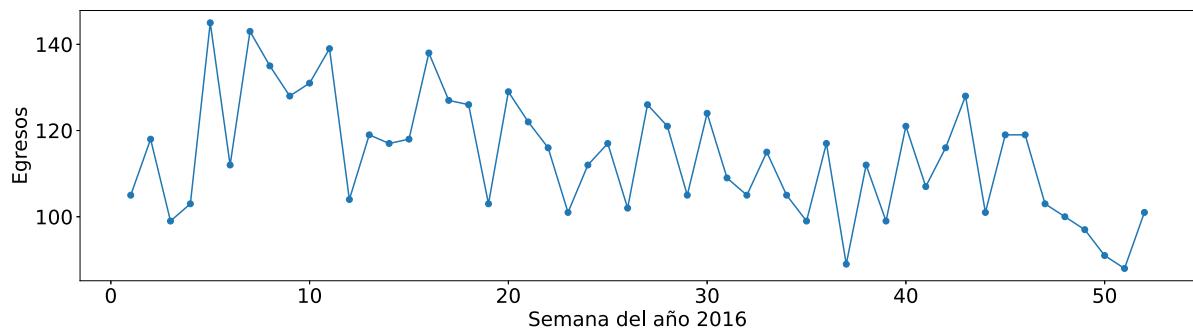


N185

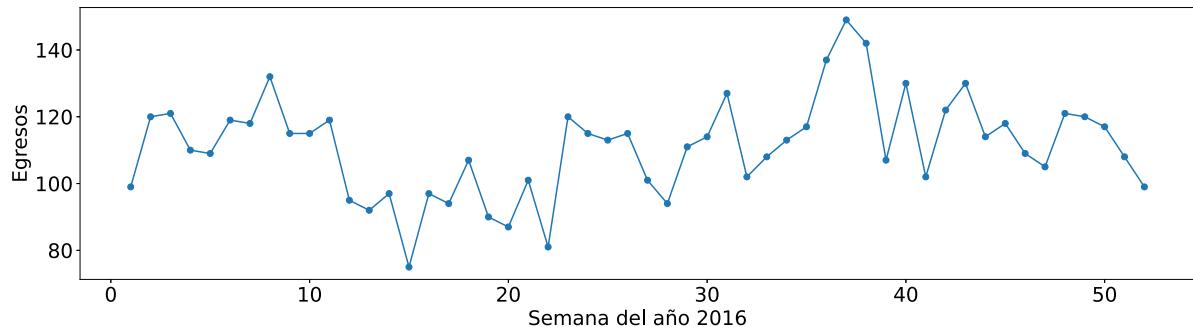


P073

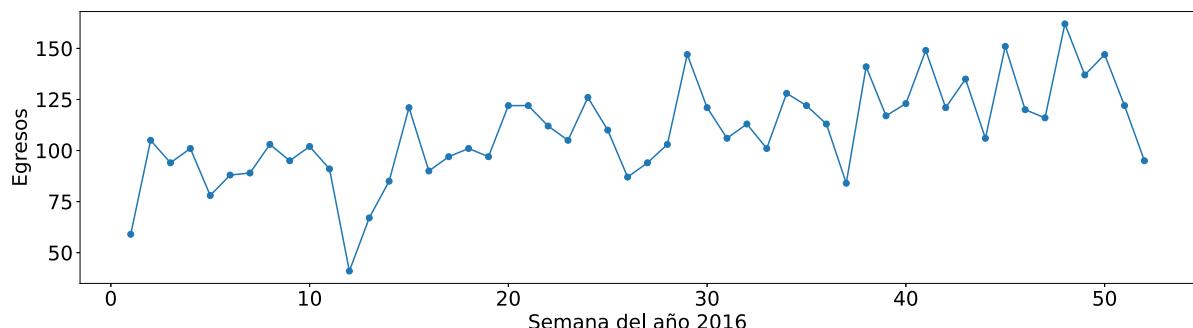
**D259****K37X****K811****0021**



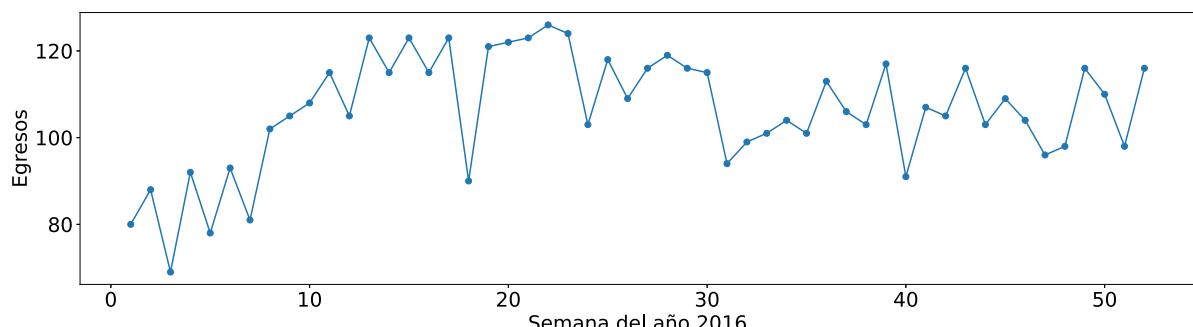
013X



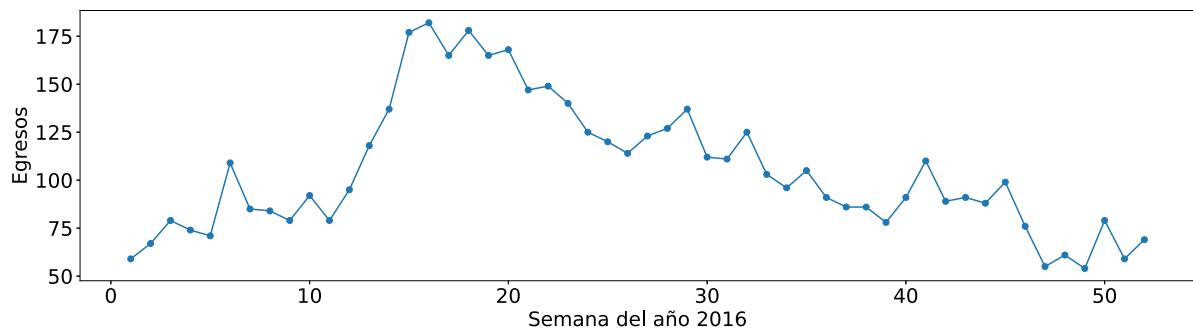
C509



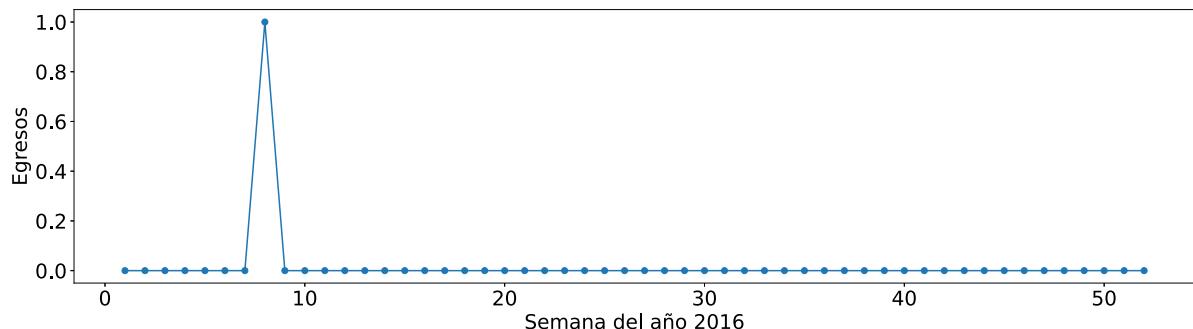
S069



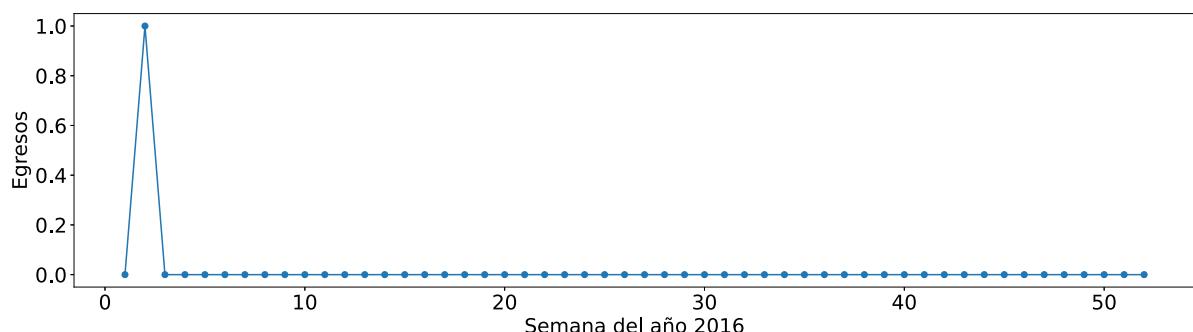
A099



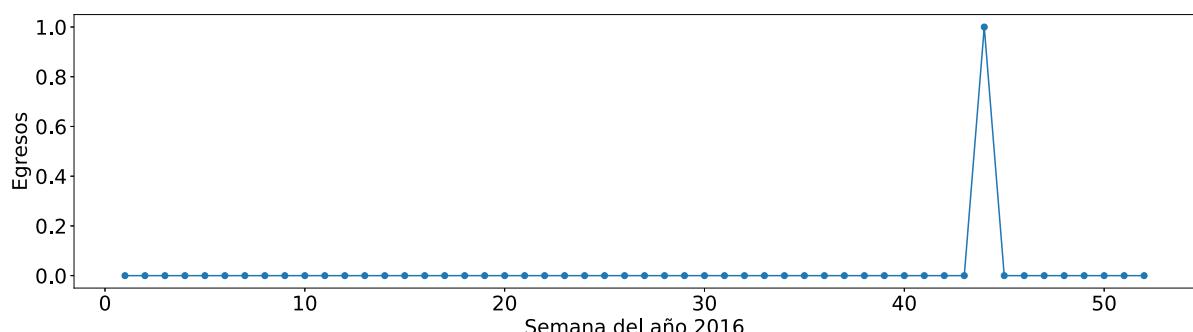
A929



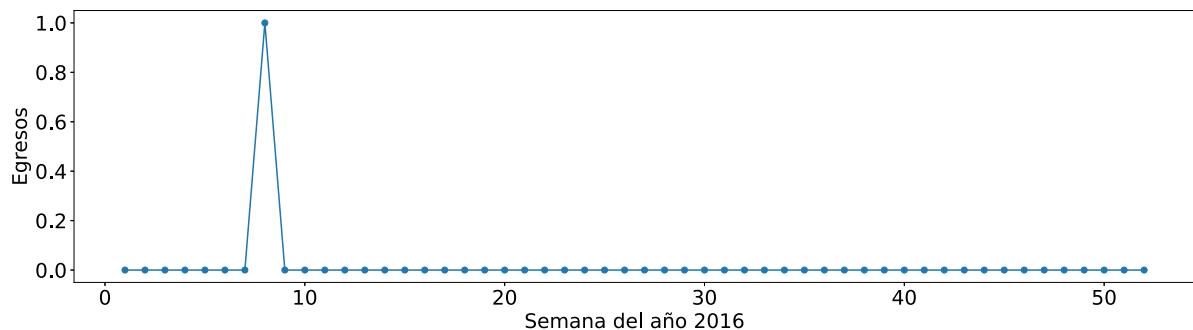
K834



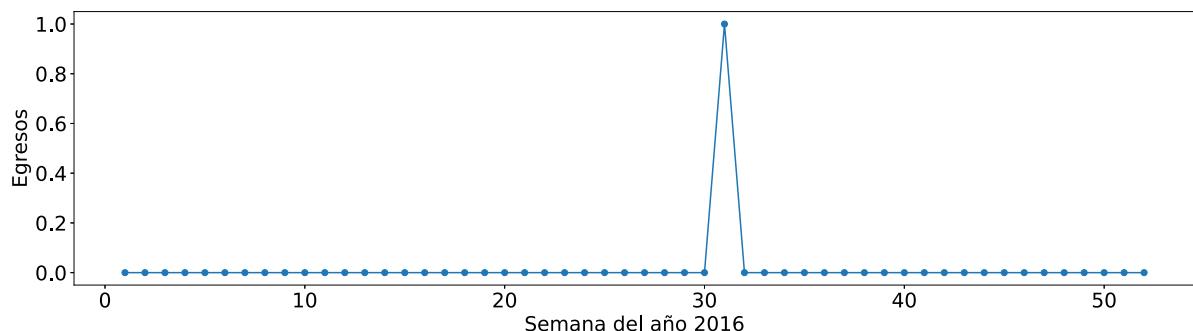
G371



B217



H938



2017

In [10]: `import pandas as pd`

```
# Se cargan los datos
columns7 = ['EGRESO', 'DIAG_INI']
dataframe7 = pd.read_csv('EGRESO_2017.csv', sep='|', usecols=columns7, nrows=1500000).dropna()
dataframe7
```

Out[10]:

	EGRESO	DIAG_INI
0	2017-02-13 00:00:00	O809
1	2017-03-12 00:00:00	O809
2	2017-04-12 00:00:00	E86X
3	2017-05-13 00:00:00	O809
4	2017-06-14 00:00:00	I219
...	...	...
1499995	2017-08-04 00:00:00	O809
1499996	2017-08-04 00:00:00	O809
1499997	2017-08-04 00:00:00	O064
1499998	2017-08-04 00:00:00	O064
1499999	2017-08-04 00:00:00	O064

1500000 rows × 2 columns

```
In [19]: # Se importan las librerias necesarias
from epiweeks import Week, date

# Se convierten los string a objetos datetime en 'dataframe'
strfdtoriginal7 = '%Y-%m-%d %H:%M:%S'
dataframe7['EGRESO'] = pd.to_datetime(dataframe7['EGRESO'], errors='coerce', format=strfdtoriginal7)
dataframe7 = dataframe7.dropna()
dataframe7 = dataframe7.reset_index(drop=True)

# Se agrega una columna con los numeros de semana
dataframe7['sem'] = ''
nrows7 = len(dataframe7.index)
for i in range(nrows7):
    dfday7 = dataframe7['EGRESO'][i]
    if dfday7.year==2017:
        mydate7 = date(dfday7.year, dfday7.month, dfday7.day)
        numberweek7 = Week.fromdate(mydate7)
        dataframe7['sem'][i] = numberweek7.week

dataframe7 = dataframe7.dropna()
dataframe7 = dataframe7.reset_index(drop=True)
dataframe7
```

Out[19]:

	EGRESO	DIAG_INI	sem
<b>0</b>	2017-02-13	O809	7
<b>1</b>	2017-03-12	O809	11
<b>2</b>	2017-04-12	E86X	15
<b>3</b>	2017-05-13	O809	19
<b>4</b>	2017-06-14	I219	24
...	...	...	...
<b>1499995</b>	2017-08-04	O809	31
<b>1499996</b>	2017-08-04	O809	31
<b>1499997</b>	2017-08-04	O064	31
<b>1499998</b>	2017-08-04	O064	31
<b>1499999</b>	2017-08-04	O064	31

1500000 rows × 3 columns

In [94]: # Se forma el nuevo dataframe 'semanas' con el numero de semana del año y la cantidad de egresos en cada semana  
semanas7 = dataframe7['sem'].value\_counts()  
# semanas7 = semanas7.drop('', axis = 0)  
semanas7 = semanas7.sort\_index()  
semanas7

```
Out[94]: 1    29887
         2    30924
         3    32383
         4    32156
         5    32001
         6    30230
         7    32552
         8    31518
         9    31718
        10   32476
        11   31829
        12   29294
        13   29940
        14   28557
        15   26151
        16   26885
        17   27700
        18   24600
        19   26186
        20   27410
        21   27306
        22   26797
        23   27708
        24   28105
        25   27789
        26   27284
        27   27648
        28   27696
        29   27579
        30   26725
        31   27417
        32   28836
        33   28370
        34   28507
        35   29005
        36   29782
        37   30581
        38   30630
        39   29696
        40   30454
        41   30531
        42   30724
        43   30116
        44   28700
        45   30153
        46   30218
        47   26720
        48   28416
        49   28652
        50   27196
        51   25701
        52   20561
Name: sem, dtype: int64
```

```
In [95]: # Se pasa a un nuevo dataframe
newdf7 = pd.DataFrame()
newdf7[ 'sem' ] = semanas7.index
newdf7[ 'casos' ] = ''
nr7 = len(newdf7.index)
for i in range (nr7):
    newdf7[ 'casos' ][i] = int(semanas7[i+1])
newdf7
```

Out[95]:

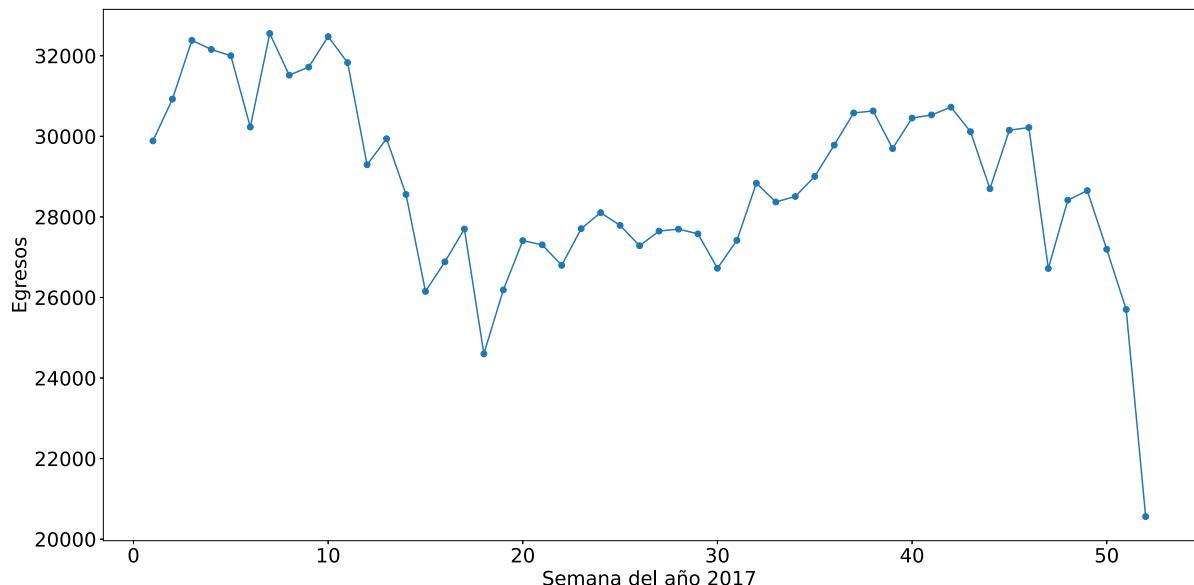
	sem	casos
0	1	29887
1	2	30924
2	3	32383
3	4	32156
4	5	32001
5	6	30230
6	7	32552
7	8	31518
8	9	31718
9	10	32476
10	11	31829
11	12	29294
12	13	29940
13	14	28557
14	15	26151
15	16	26885
16	17	27700
17	18	24600
18	19	26186
19	20	27410
20	21	27306
21	22	26797
22	23	27708
23	24	28105
24	25	27789
25	26	27284
26	27	27648
27	28	27696
28	29	27579
29	30	26725
30	31	27417
31	32	28836
32	33	28370
33	34	28507
34	35	29005

sem	casos
<b>35</b>	36 29782
<b>36</b>	37 30581
<b>37</b>	38 30630
<b>38</b>	39 29696
<b>39</b>	40 30454
<b>40</b>	41 30531
<b>41</b>	42 30724
<b>42</b>	43 30116
<b>43</b>	44 28700
<b>44</b>	45 30153
<b>45</b>	46 30218
<b>46</b>	47 26720
<b>47</b>	48 28416
<b>48</b>	49 28652
<b>49</b>	50 27196
<b>50</b>	51 25701
<b>51</b>	52 20561

```
In [141]: # Se importan las librerías necesarias
import matplotlib.pyplot as plt

año7 = '2017'
print('Egresos ' + año7)
# Se establece el tamaño de la figura
plt.rcParams.update({'font.size': 20})
plt.figure(figsize=(20, 10))
# Se define que se unan los puntos en la gráfica
plt.scatter(semanas7.index, newdf7.casos)
# Se definen las coordenadas 'x' y 'y'
plt.plot(semanas7.index, newdf7.casos)
# Se coloca un título para el eje x
plt.xlabel("Semana del año " + año7)
# Se coloca un título para el eje y
plt.ylabel("Egresos")
# Se guarda la figura como un archivo
plt.savefig(año7 + '/Egresos' + año7 + '.jpg', format='jpg')
# Se muestra la figura en la terminal
plt.show()
```

Egresos 2017



```
In [142]: # Se crea el dataframe 'diagnosticos' con los nombre de los diferentes diagnosticos sin repeticion
diagnosticos7 = dataframe7['DIAG_INI'].value_counts()
# Se ordena del diagnostico con mayore numero de egresos al diagnostico con menor numero de egresos
diagnosticos7 = diagnosticos7.sort_values(ascending = False)
# Se crea el dataframe 'cie' con los nombres de los diagnosticos, los numeros de las semanas, y la cantidad de diagnosticos de dicha enfermedad en cada semana
cie7 = dataframe7.groupby(['DIAG_INI', 'sem']).count()

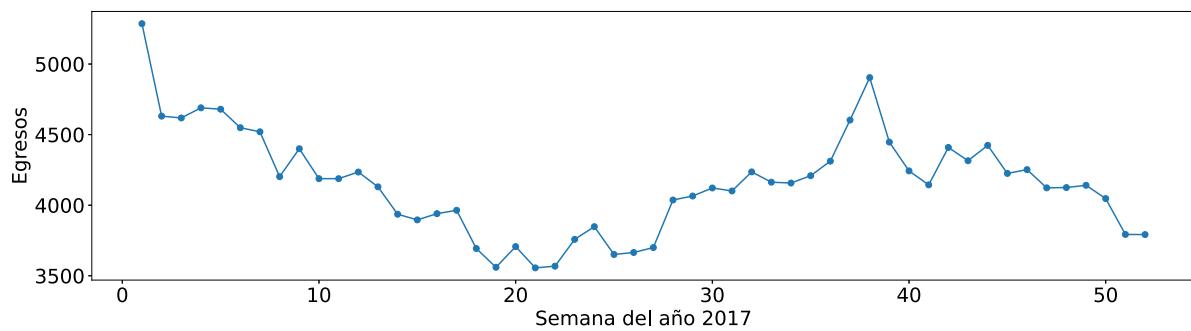
# Se importa la libreria necesaria para la figura
import matplotlib.pyplot as plt

plt.rcParams.update({'font.size': 20})

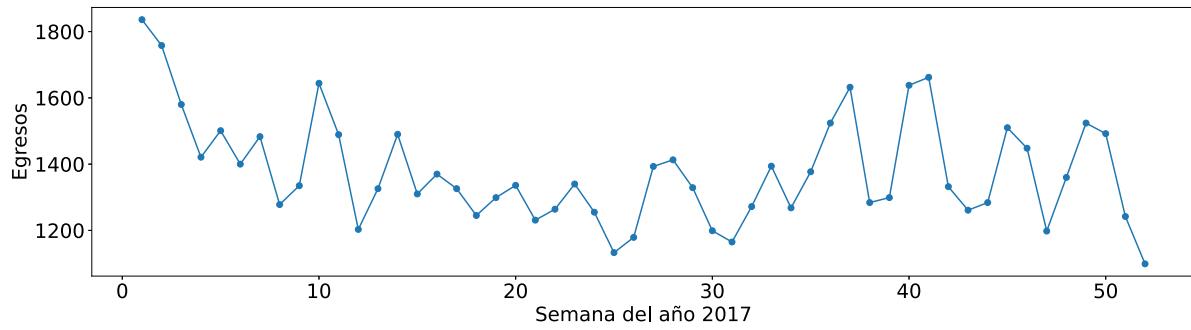
print('Año ' + año7 + '\n')
# Se inicia un contador para controlar la cantidad de graficos a generar
i7 = 0
ndiagnosticos7 = len(diagnosticos7.index)
maximo7 = ndiagnosticos7-5
# Proceso de generación de las figuras
for name7 in diagnosticos7.index:
    if i7 < 25 or i7 >= maximo7:
        y7 = []
        for index7 in semanas7.index:
            try:
                y7.append(cie7['EGRESO'][name7, index7])
            except:
                y7.append(0)
        print('\n' + name7)
        plt.figure(figsize=(20, 5))
        plt.scatter(semanas7.index, y7)
        plt.plot(semanas7.index, y7)
        plt.xlabel("Semana del año " + año7)
        plt.ylabel("Egresos")
        plt.savefig(año7 + '/' + name7 + '_' + año7 + '.jpg', format='jpg')
        plt.show()
    i7 = i7+1
```

Año 2017

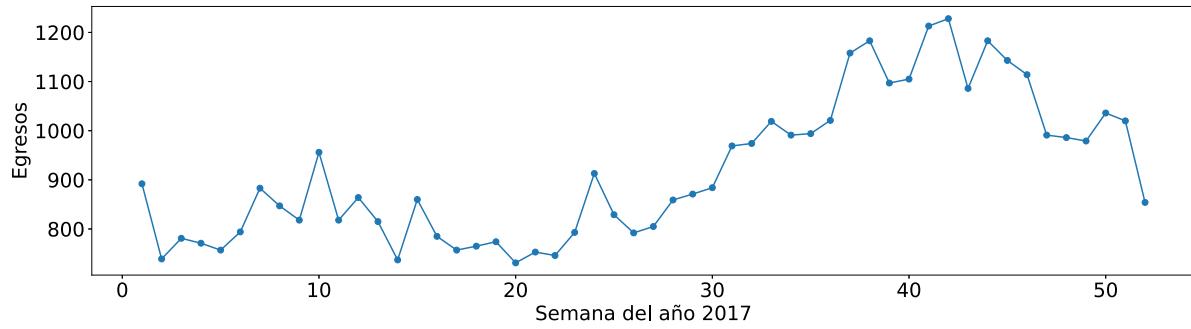
0809



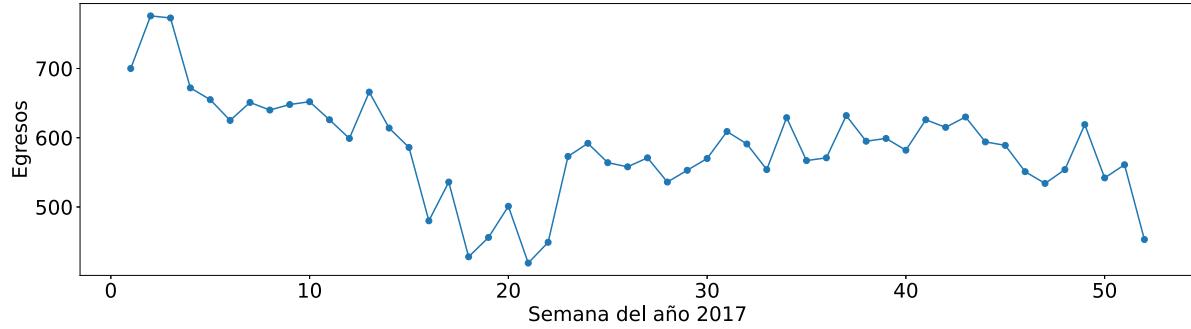
N189



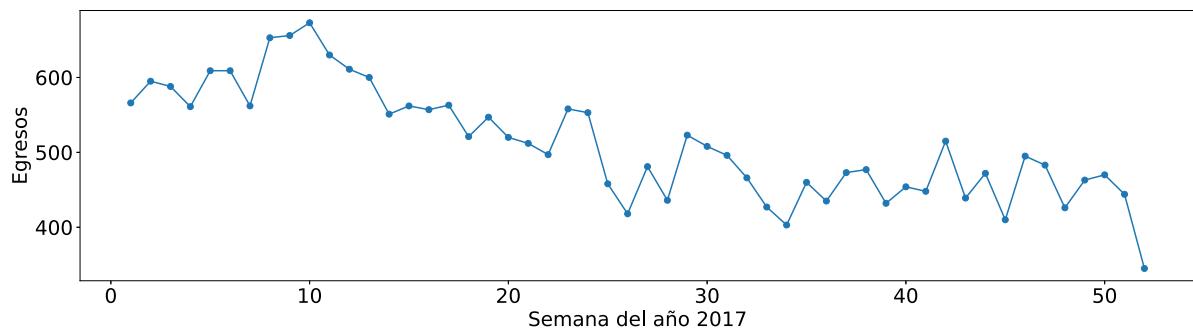
0800



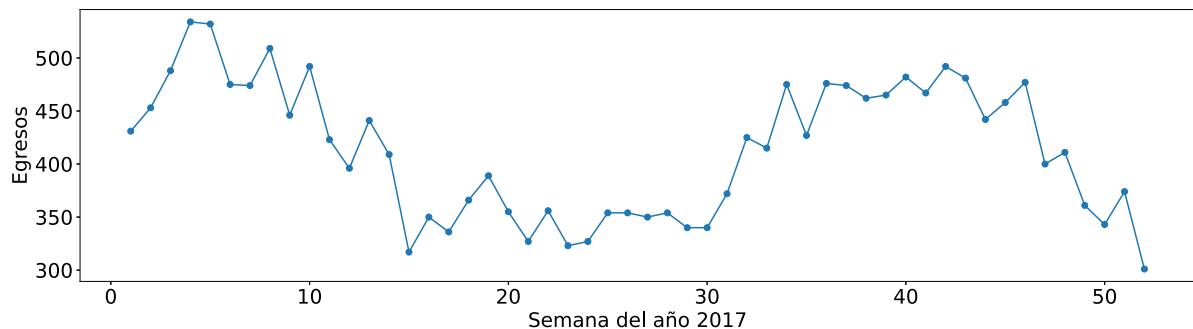
0829



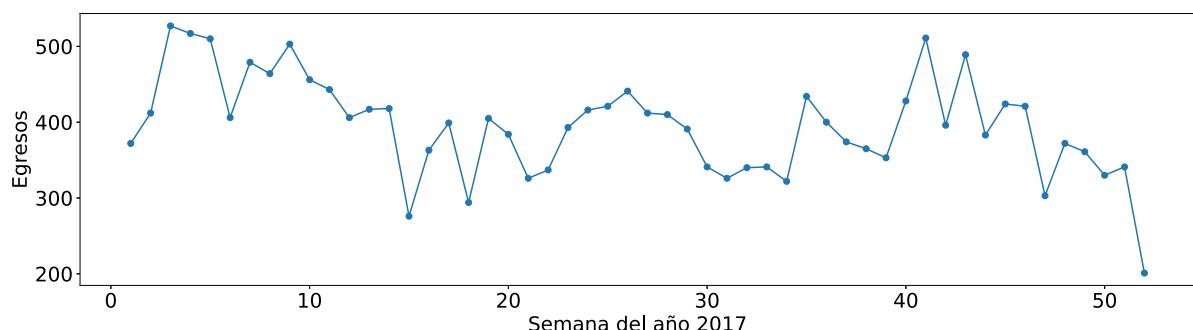
0064



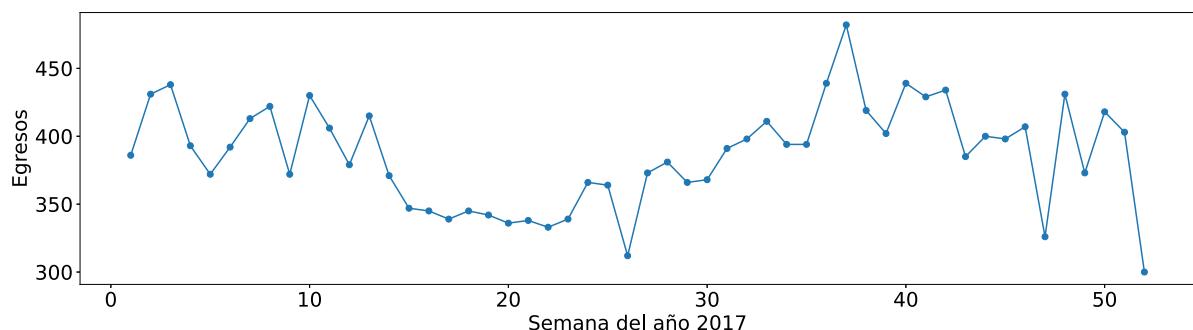
N185



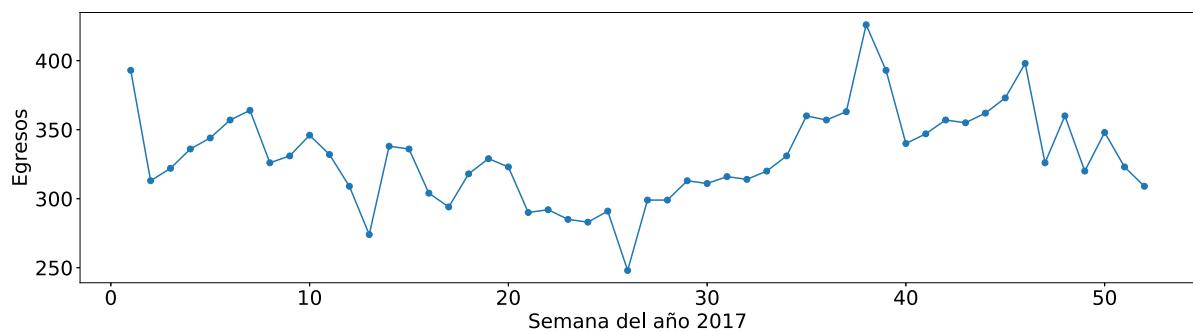
C509



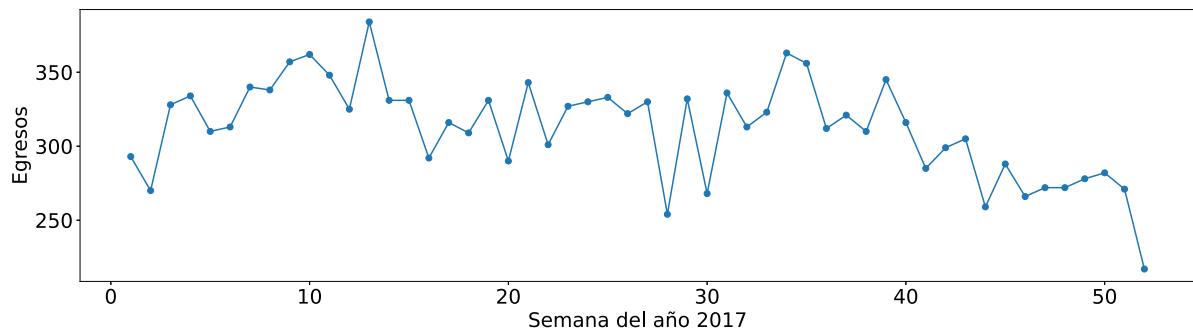
0342



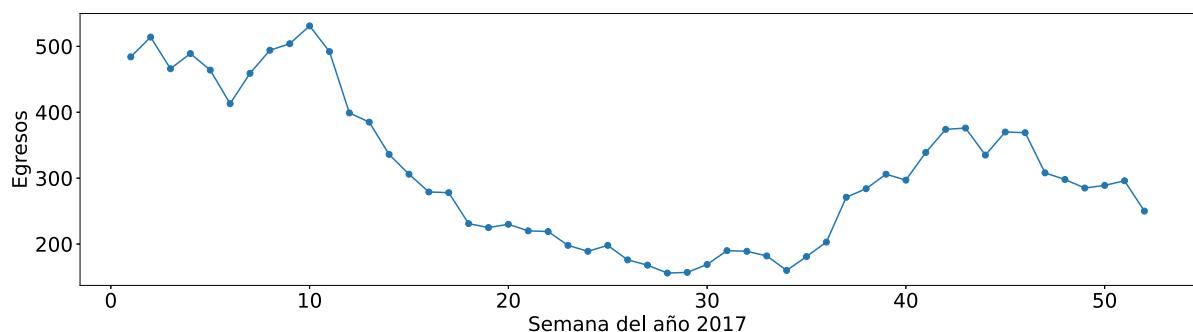
0429



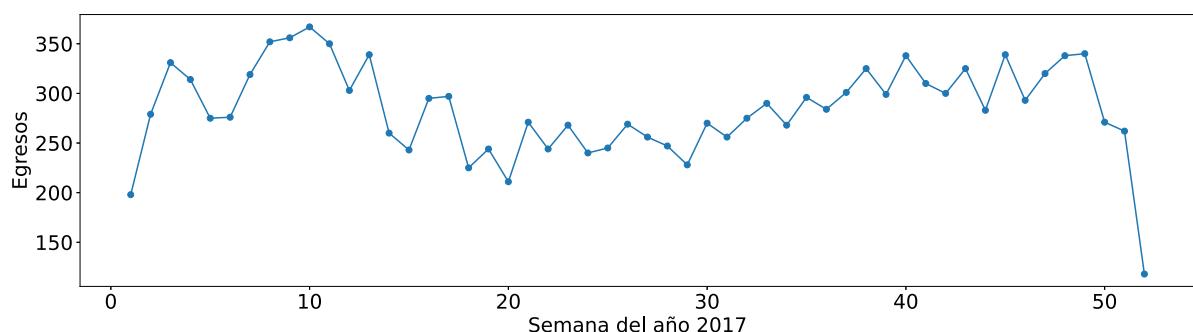
K358



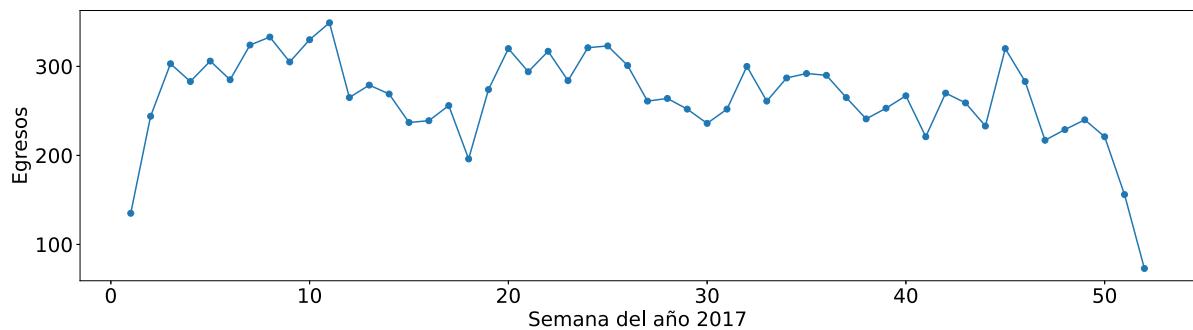
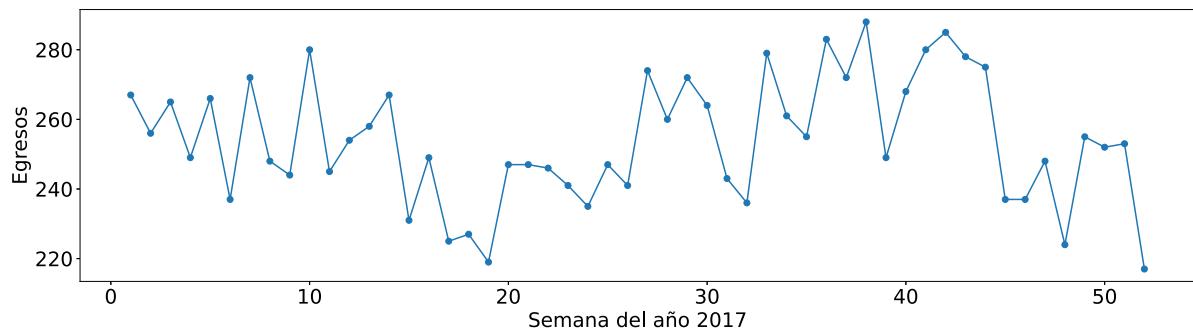
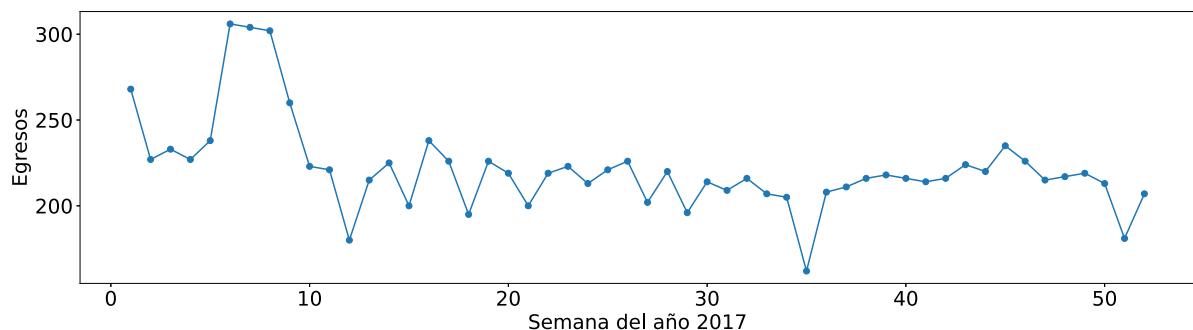
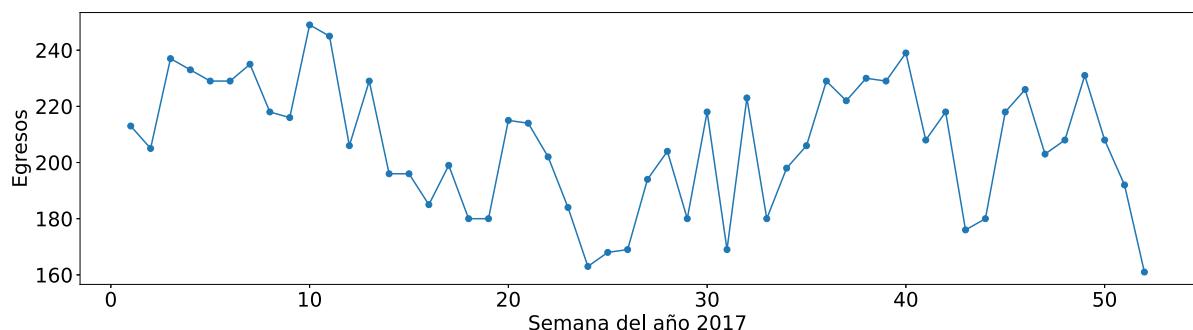
J189

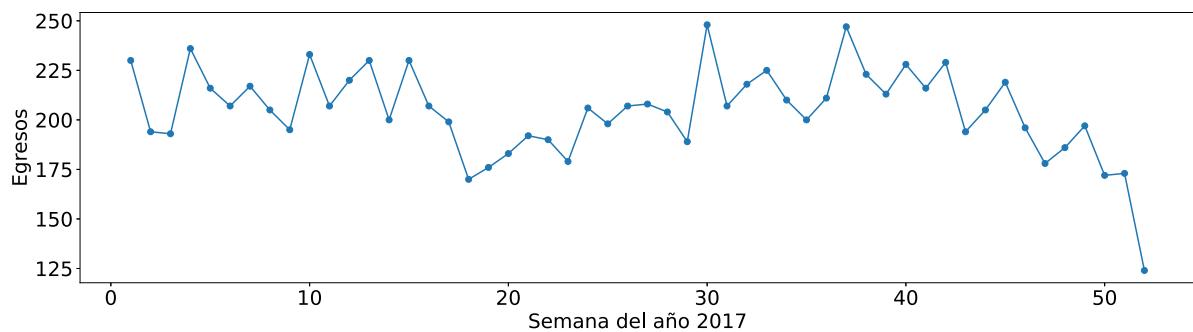
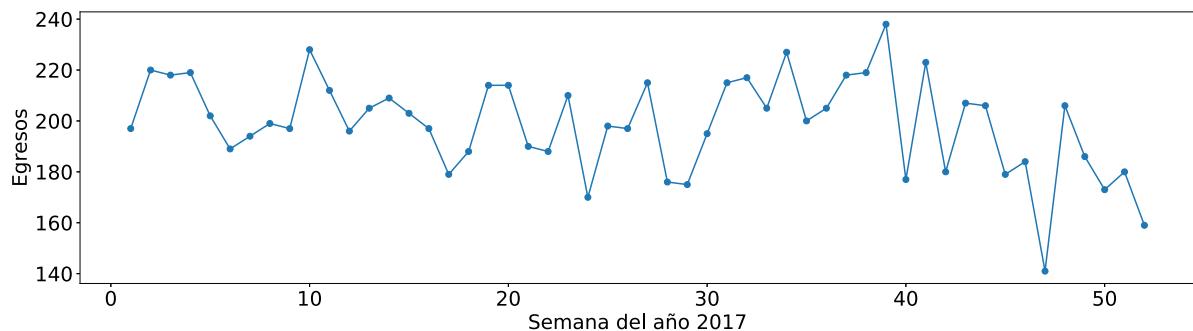
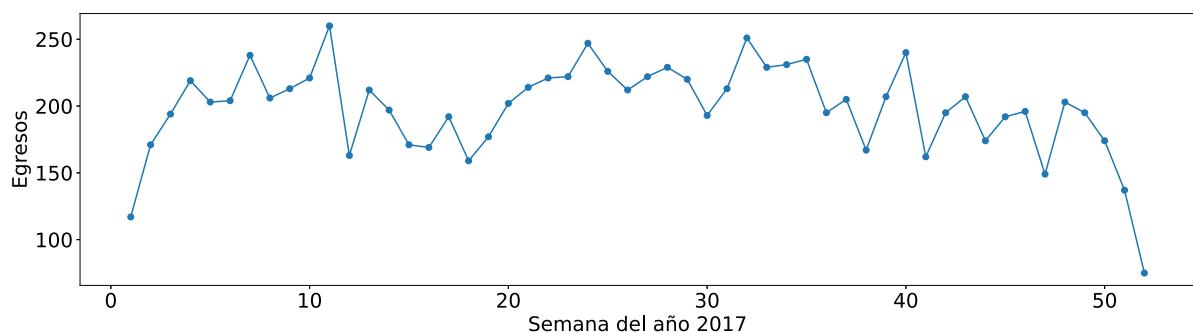
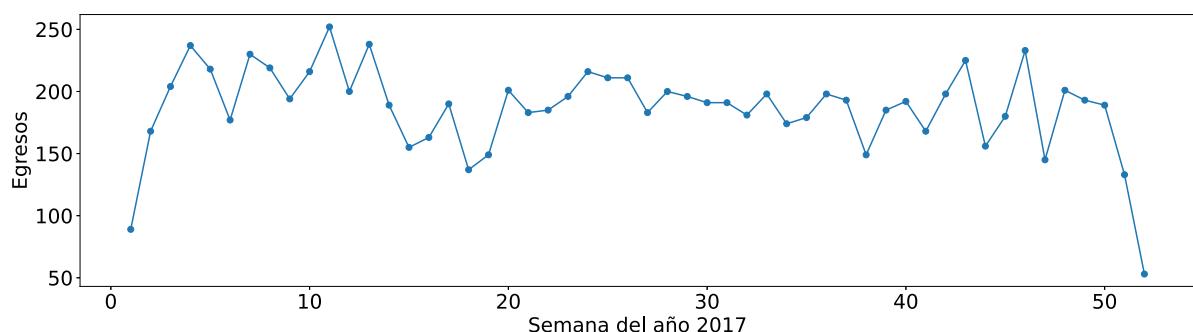


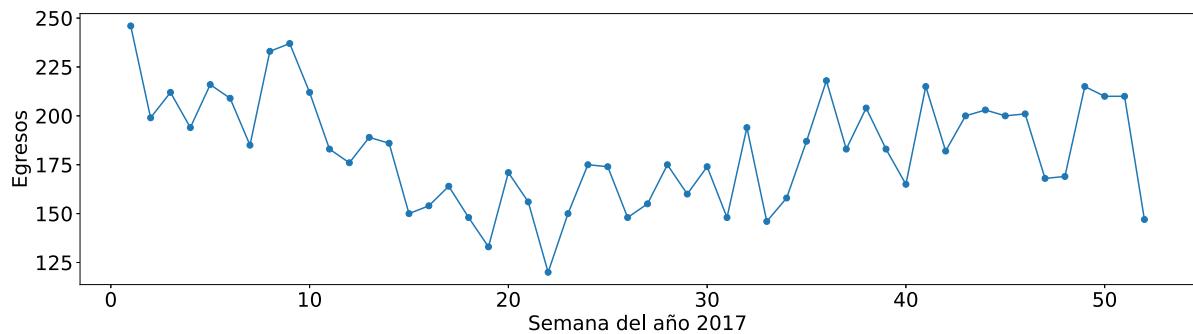
C910



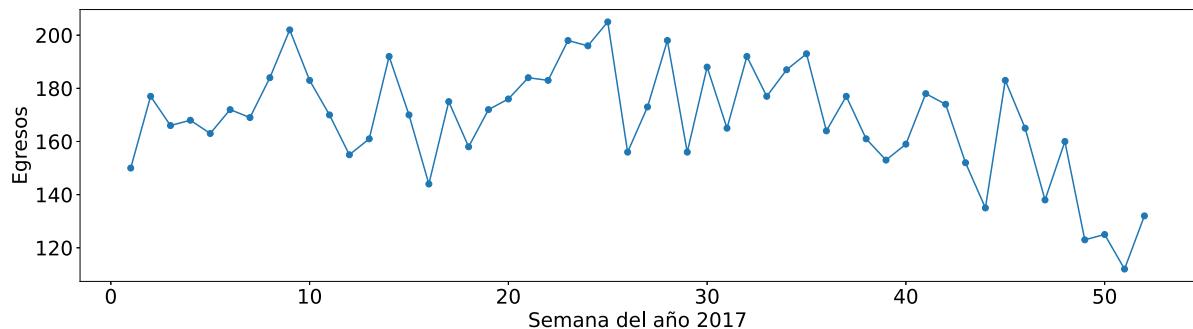
K409

**0410****Z491****0339****0470**

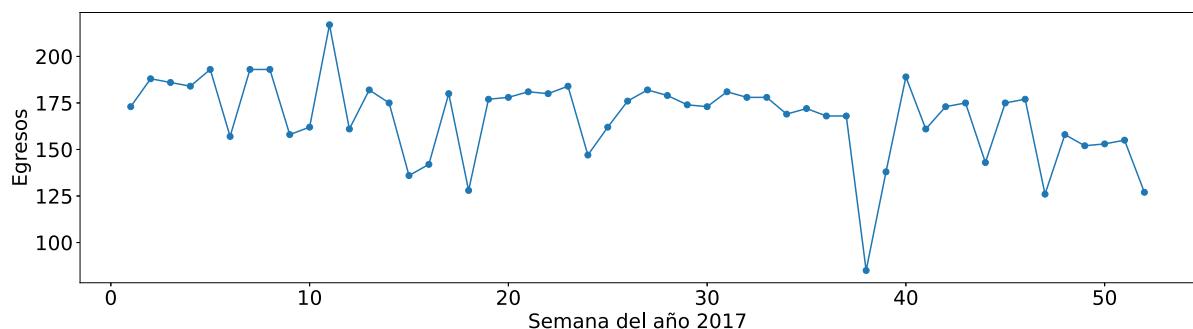
**P073****K811****D259****013X**



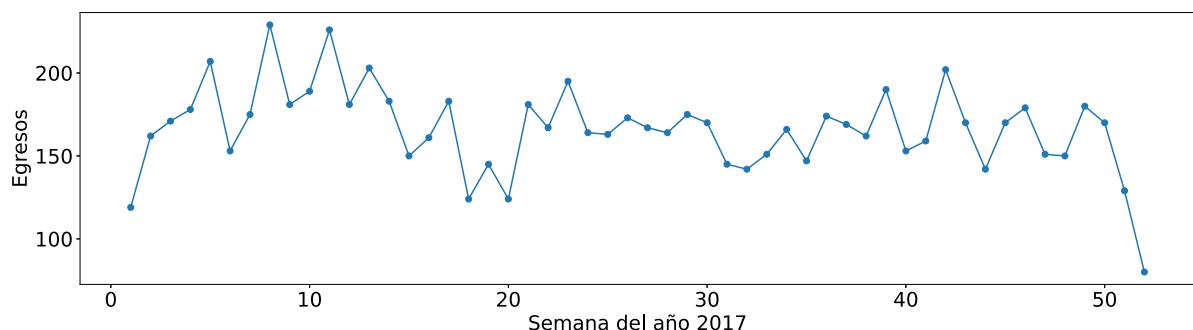
K37X



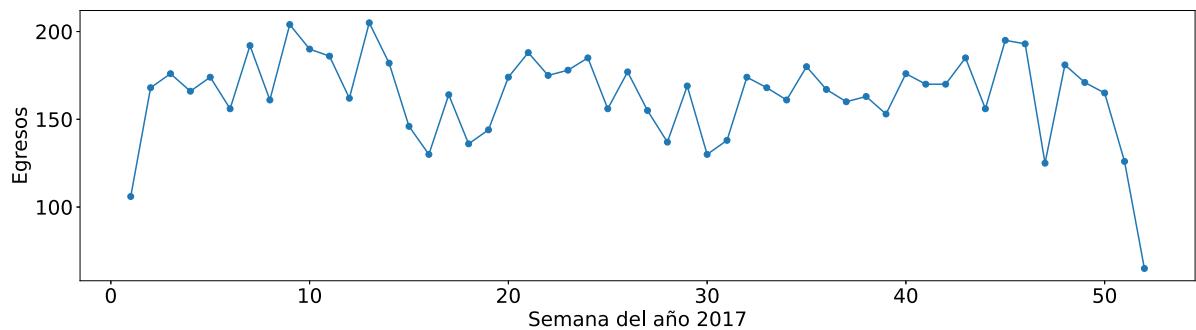
Z992



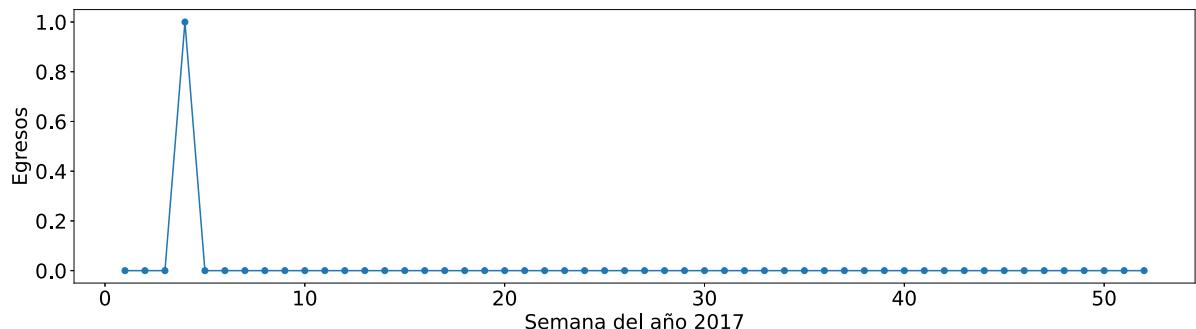
K801



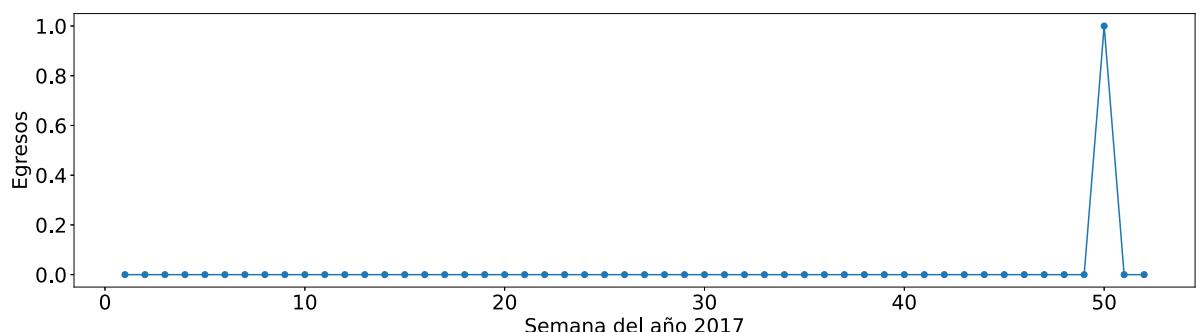
K802



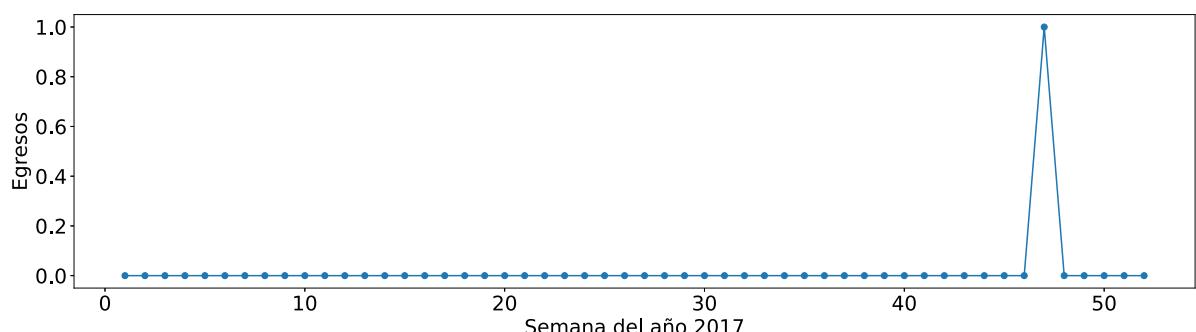
F88X



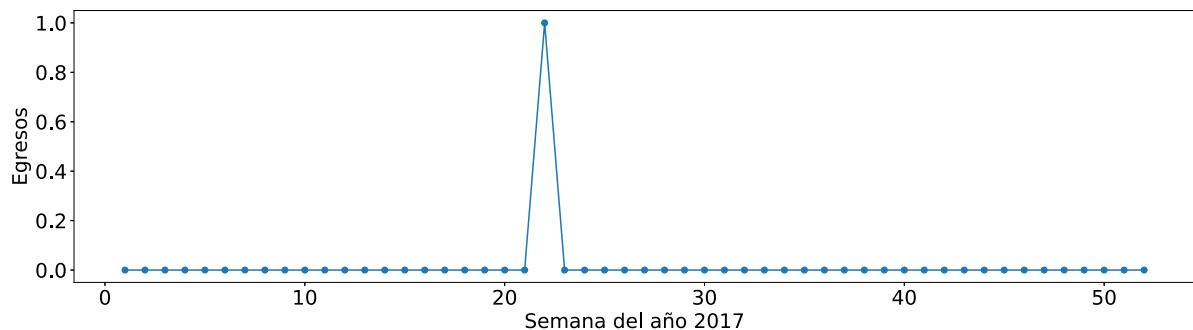
T236



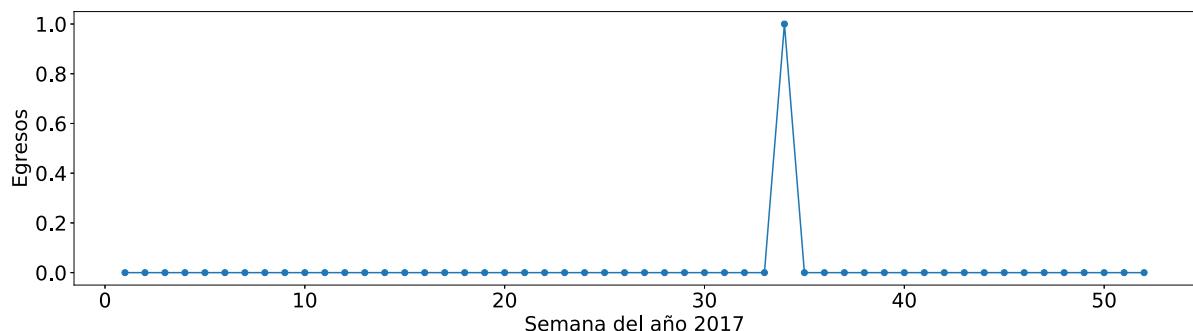
D590



p369



Z749

**2018**

In [11]: `import pandas as pd`

```
# Se cargan los datos
columns8 = ['EGRESO', 'DIAG_INI']
dataframe8 = pd.read_csv('EGRESO_2018.csv', usecols=columns8, nrows=1000000).dropna()
dataframe8
```

Out[11]:

	EGRESO	DIAG_INI
0	2018-03-11 00:00:00.000	Z524
1	2018-03-15 00:00:00.000	D259
2	2018-04-07 00:00:00.000	M169
3	2018-04-06 00:00:00.000	Q539
4	2018-04-19 00:00:00.000	N185
...	...	...
999995	2018-04-24 00:00:00.000	E042
999996	2018-04-24 00:00:00.000	K802
999997	2018-04-27 00:00:00.000	K603
999998	2018-04-28 00:00:00.000	R69X
999999	2018-04-26 00:00:00.000	M179

1000000 rows × 2 columns

```
In [20]: # Se importan las librerias necesarias
from epiweeks import Week, date

# Se convierten los string a objetos datetime en 'dataframe'
strfdtoriginal8 = '%Y-%m-%d %H:%M:%S.000'
dataframe8['EGRESO'] = pd.to_datetime(dataframe8['EGRESO'], errors='coerce', format=strfdtoriginal8)
dataframe8 = dataframe8.dropna()
dataframe8 = dataframe8.reset_index(drop=True)

# Se agrega una columna con los numeros de semana
dataframe8['sem'] = ''
nrows8 = len(dataframe8.index)
for i in range(nrows8):
    dfday8 = dataframe8['EGRESO'][i]
    if dfday8.year==2018:
        mydate8 = date(dfday8.year, dfday8.month, dfday8.day)
        numberweek8 = Week.fromdate(mydate8)
        dataframe8['sem'][i] = numberweek8.week

dataframe8 = dataframe8.dropna()
dataframe8 = dataframe8.reset_index(drop=True)
dataframe8
```

Out[20]:

	EGRESO	DIAG_INI	sem
0	2018-03-11	Z524	11
1	2018-03-15	D259	11
2	2018-04-07	M169	14
3	2018-04-06	Q539	14
4	2018-04-19	N185	16
...	...	...	...
999995	2018-04-24	E042	17
999996	2018-04-24	K802	17
999997	2018-04-27	K603	17
999998	2018-04-28	R69X	17
999999	2018-04-26	M179	17

1000000 rows × 3 columns

In [99]: # Se forma el nuevo dataframe 'semanas' con el numero de semana del año y la cantidad de egresos en cada semana  
semanas8 = dataframe8['sem'].value\_counts()  
# semanas8 = semanas8.drop('', axis = 0)  
semanas8 = semanas8.sort\_index()  
semanas8

```
Out[99]: 1    17995
         2    18415
         3    19382
         4    19381
         5    19586
         6    18117
         7    19495
         8    19463
         9    19664
        10   19664
        11   20214
        12   19257
        13   17852
        14   18507
        15   19268
        16   19680
        17   19987
        18   18283
        19   19175
        20   19921
        21   20048
        22   19846
        23   19602
        24   19141
        25   18905
        26   18857
        27   19181
        28   19413
        29   19496
        30   19698
        31   19275
        32   19323
        33   19547
        34   19931
        35   19964
        36   20534
        37   20509
        38   20569
        39   19922
        40   20303
        41   19961
        42   19705
        43   19605
        44   18409
        45   19046
        46   19528
        47   17902
        48   18747
        49   18328
        50   18415
        51   17870
        52   15114
Name: sem, dtype: int64
```

```
In [100]: # Se pasa a un nuevo dataframe
newdf8 = pd.DataFrame()
newdf8[ 'sem' ] = semanas8.index
newdf8[ 'casos' ] = ''
nr8 = len(newdf8.index)
for i in range (nr8):
    newdf8[ 'casos' ][i] = int(semanas8[i+1])
newdf8
```

Out[100]:

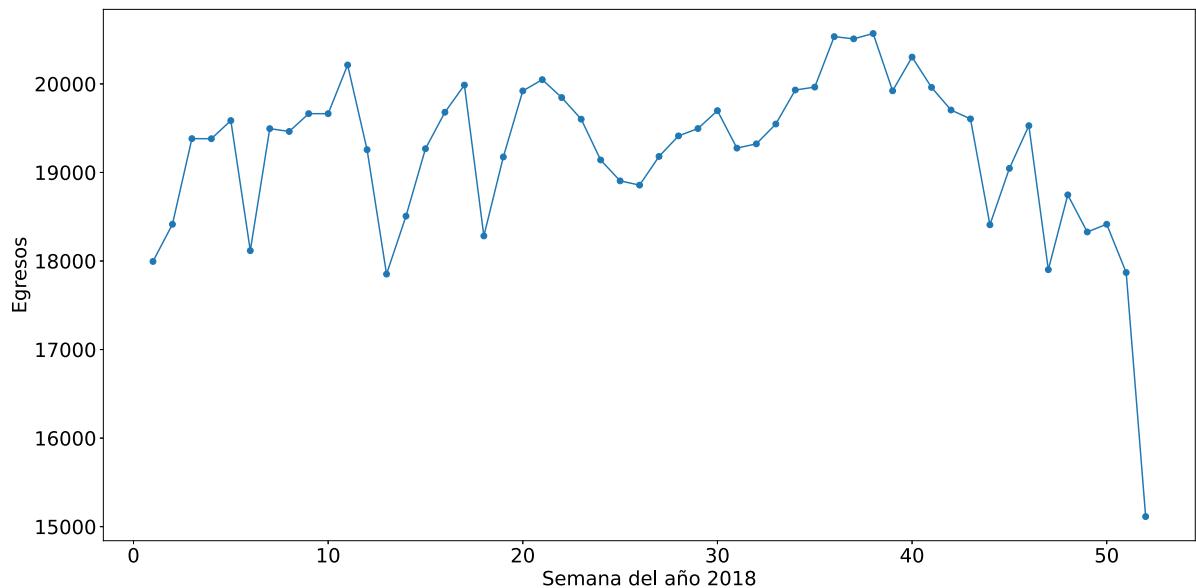
	sem	casos
<b>0</b>	1	17995
<b>1</b>	2	18415
<b>2</b>	3	19382
<b>3</b>	4	19381
<b>4</b>	5	19586
<b>5</b>	6	18117
<b>6</b>	7	19495
<b>7</b>	8	19463
<b>8</b>	9	19664
<b>9</b>	10	19664
<b>10</b>	11	20214
<b>11</b>	12	19257
<b>12</b>	13	17852
<b>13</b>	14	18507
<b>14</b>	15	19268
<b>15</b>	16	19680
<b>16</b>	17	19987
<b>17</b>	18	18283
<b>18</b>	19	19175
<b>19</b>	20	19921
<b>20</b>	21	20048
<b>21</b>	22	19846
<b>22</b>	23	19602
<b>23</b>	24	19141
<b>24</b>	25	18905
<b>25</b>	26	18857
<b>26</b>	27	19181
<b>27</b>	28	19413
<b>28</b>	29	19496
<b>29</b>	30	19698
<b>30</b>	31	19275
<b>31</b>	32	19323
<b>32</b>	33	19547
<b>33</b>	34	19931
<b>34</b>	35	19964

sem	casos
<b>35</b>	36 20534
<b>36</b>	37 20509
<b>37</b>	38 20569
<b>38</b>	39 19922
<b>39</b>	40 20303
<b>40</b>	41 19961
<b>41</b>	42 19705
<b>42</b>	43 19605
<b>43</b>	44 18409
<b>44</b>	45 19046
<b>45</b>	46 19528
<b>46</b>	47 17902
<b>47</b>	48 18747
<b>48</b>	49 18328
<b>49</b>	50 18415
<b>50</b>	51 17870
<b>51</b>	52 15114

```
In [143]: # Se importan las librerías necesarias
import matplotlib.pyplot as plt

año8 = '2018'
print('Egresos ' + año8)
# Se establece el tamaño de la figura
plt.rcParams.update({'font.size': 20})
plt.figure(figsize=(20, 10))
# Se define que se unan los puntos en la gráfica
plt.scatter(semanas8.index, newdf8.casos)
# Se definen las coordenadas 'x' y 'y'
plt.plot(semanas8.index, newdf8.casos)
# Se coloca un título para el eje x
plt.xlabel("Semana del año " + año8)
# Se coloca un título para el eje y
plt.ylabel("Egresos")
# Se guarda la figura como un archivo
plt.savefig(año8 + '/Egresos' + año8 + '.jpg', format='jpg')
# Se muestra la figura en la terminal
plt.show()
```

Egresos 2018



```
In [144]: # Se crea el dataframe 'diagnosticos' con los nombre de los diferentes diagnosticos sin repeticion
diagnosticos8 = dataframe8['DIAG_INI'].value_counts()
# Se ordena del diagnostico con mayore numero de egresos al diagnostico con menor numero de egresos
diagnosticos8 = diagnosticos8.sort_values(ascending = False)
# Se crea el dataframe 'cie' con los nombres de los diagnosticos, los numeros de las semanas, y la cantidad de diagnosticos de dicha enfermedad en cada semana
cie8 = dataframe8.groupby(['DIAG_INI', 'sem']).count()

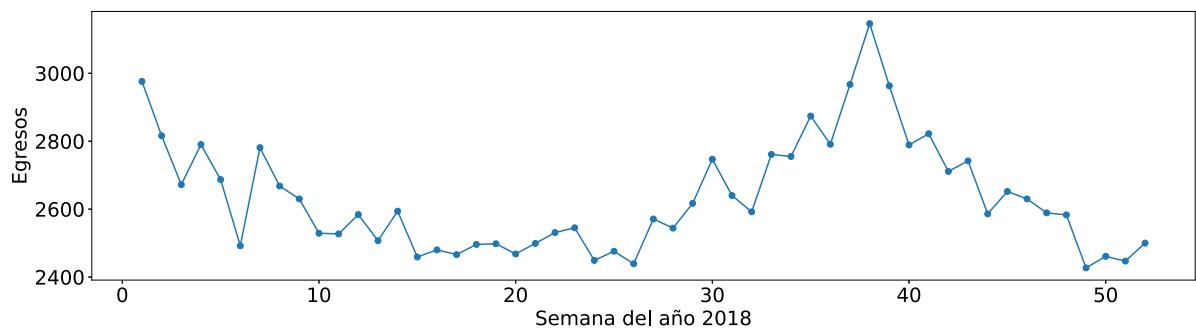
# Se importa la libreria necesaria para la figura
import matplotlib.pyplot as plt

plt.rcParams.update({'font.size': 20})

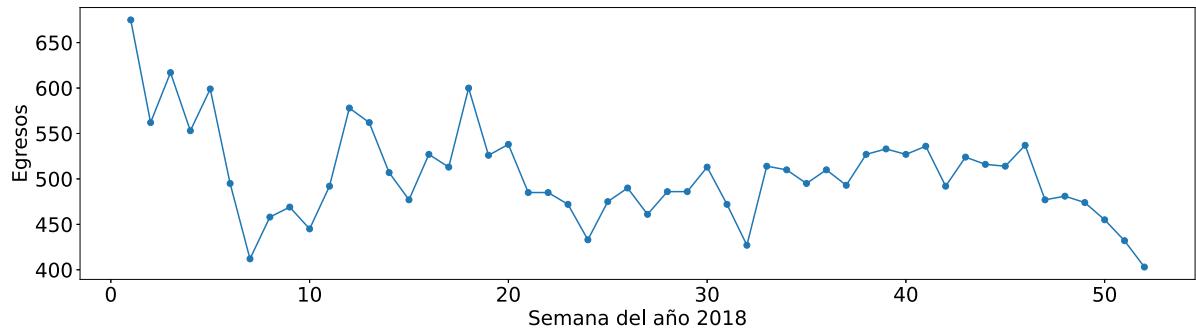
print('Año ' + año8 + '\n')
# Se inicia un contador para controlar la cantidad de graficos a generar
i8 = 0
ndiagnosticos8 = len(diagnosticos8.index)
maximo8 = ndiagnosticos8-5
# Proceso de generación de las figuras
for name8 in diagnosticos8.index:
    if i8 < 25 or i8 >= maximo8:
        y8 = []
        for index8 in semanas8.index:
            try:
                y8.append(cie8['EGRESO'][name8, index8])
            except:
                y8.append(0)
        print('\n' + name8)
        plt.figure(figsize=(20, 5))
        plt.scatter(semanas8.index, y8)
        plt.plot(semanas8.index, y8)
        plt.xlabel("Semana del año " + año8)
        plt.ylabel("Egresos")
        plt.savefig(año8 + '/' + name8 + '_' + año8 + '.jpg', format='jpg')
        plt.show()
    i8 = i8+1
```

Año 2018

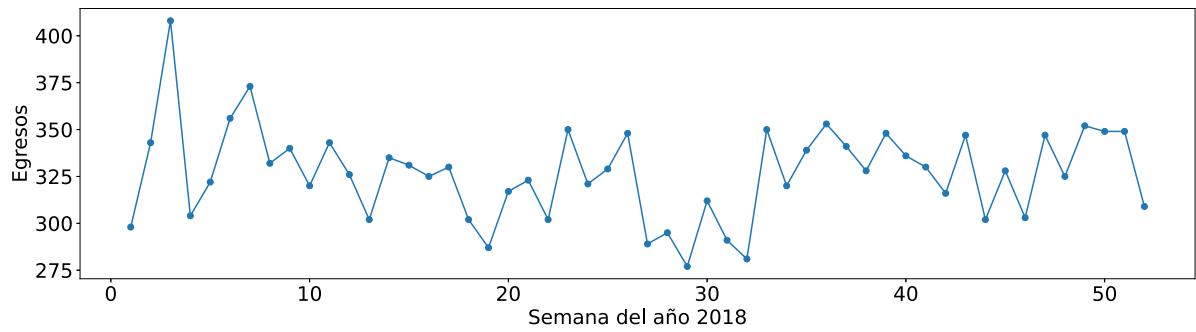
0809



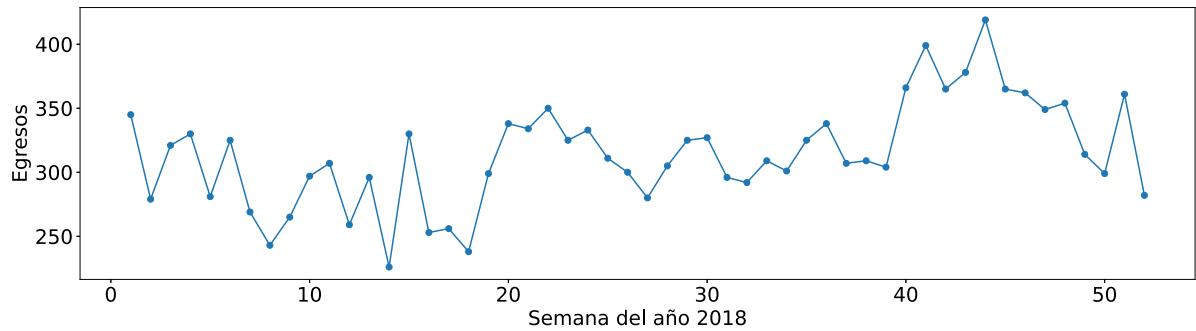
0800



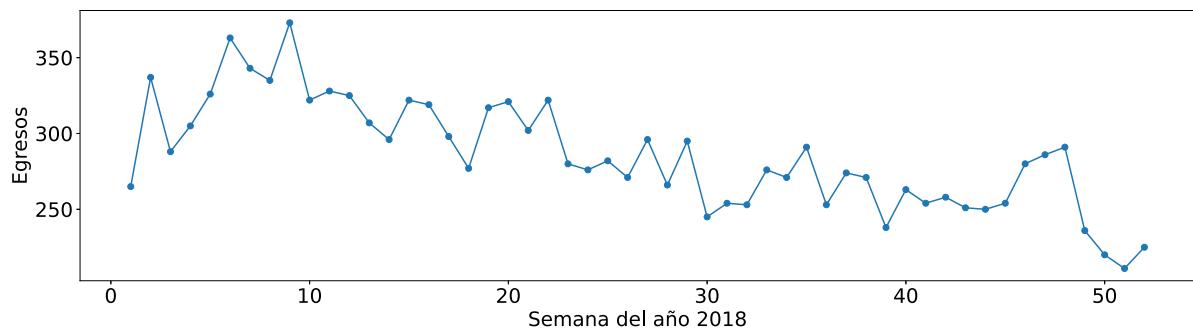
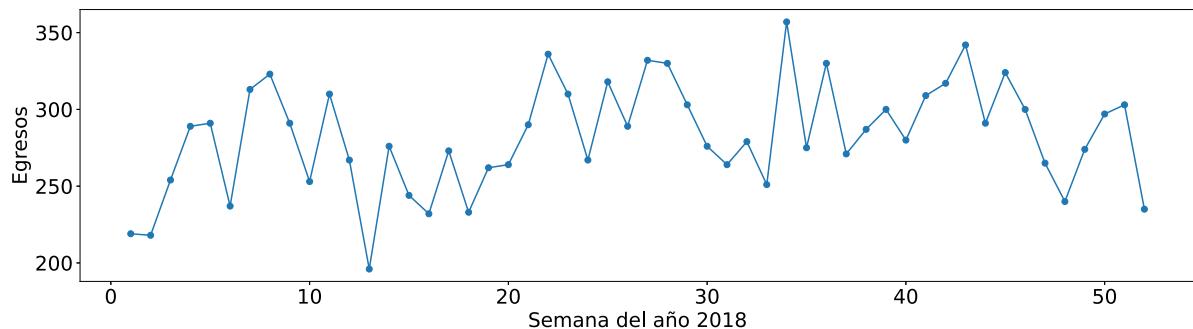
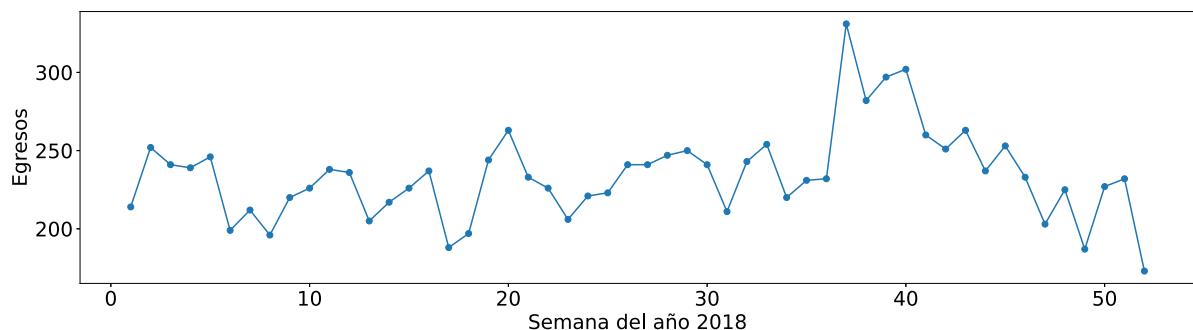
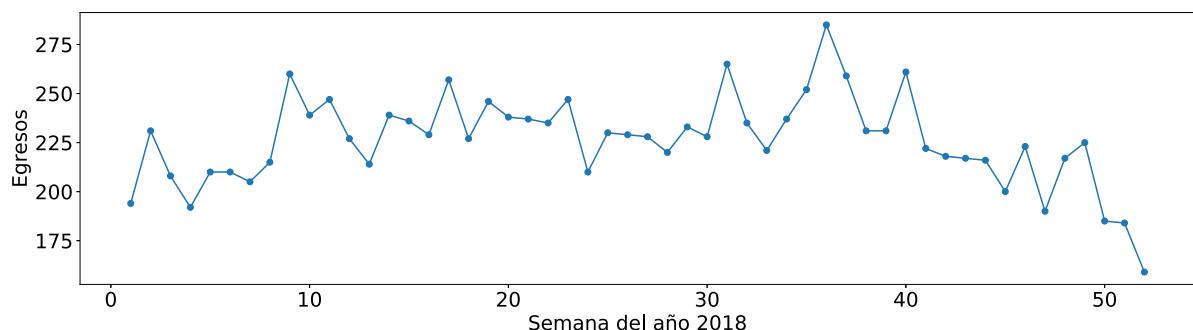
0829

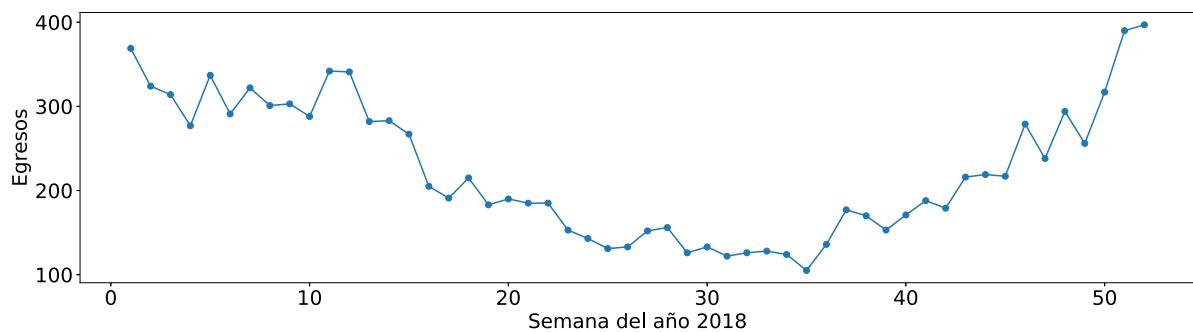
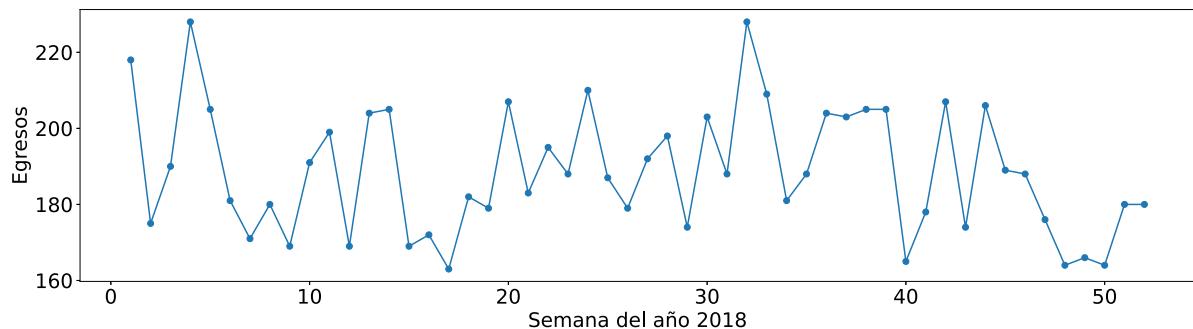
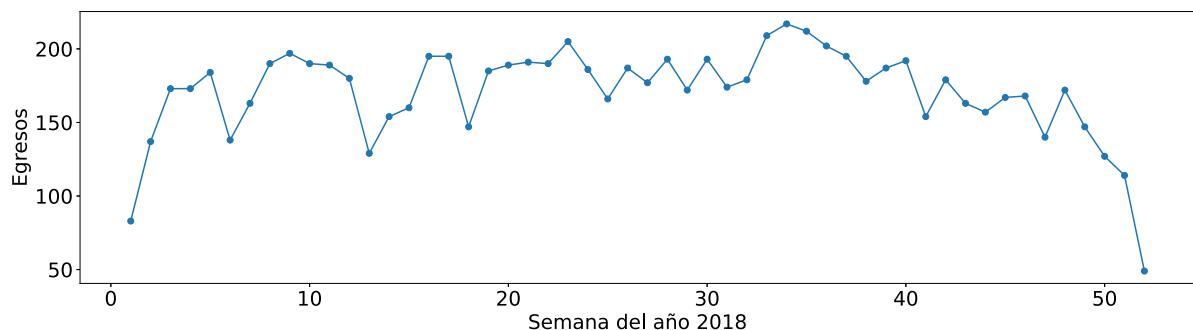
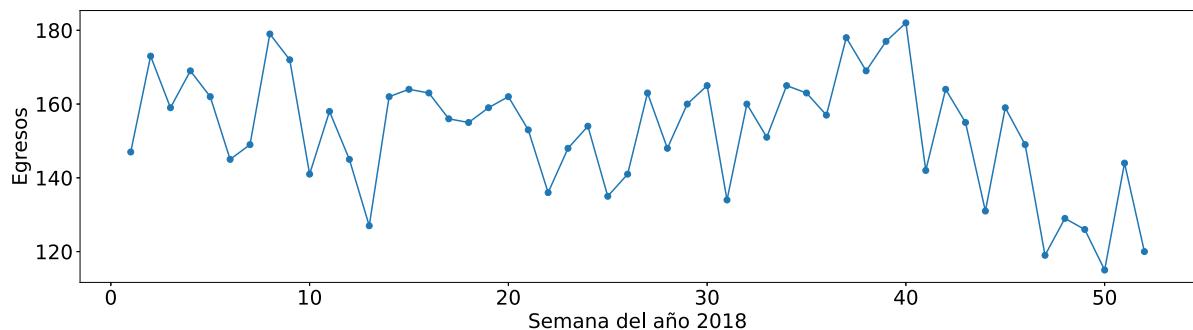


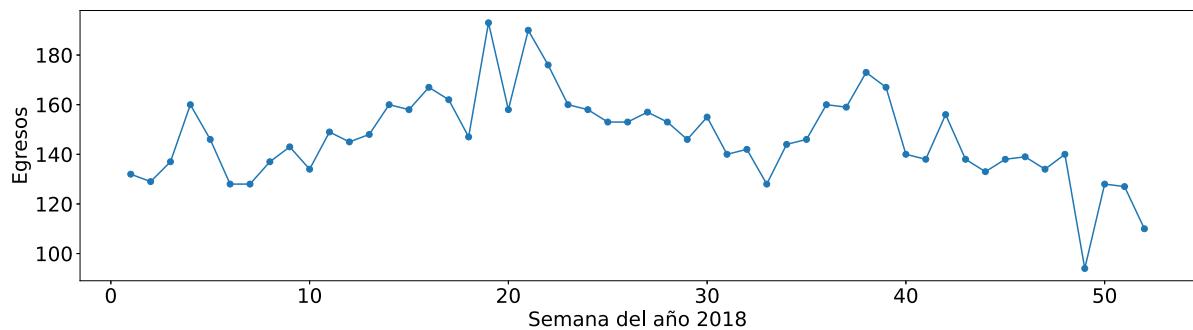
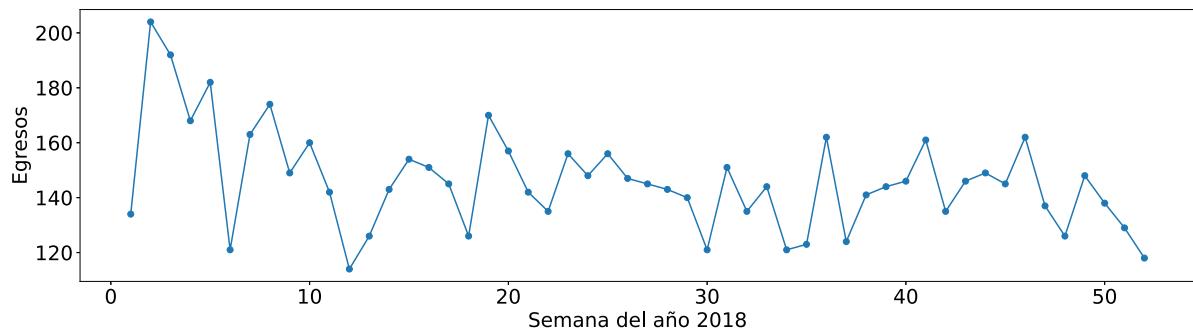
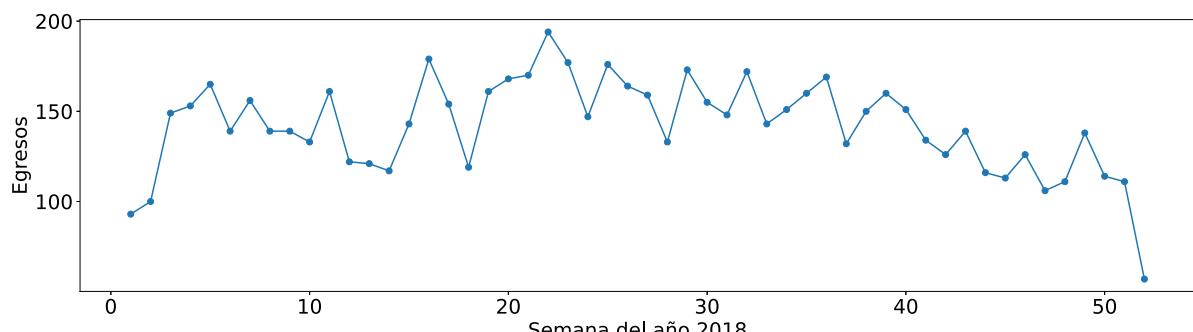
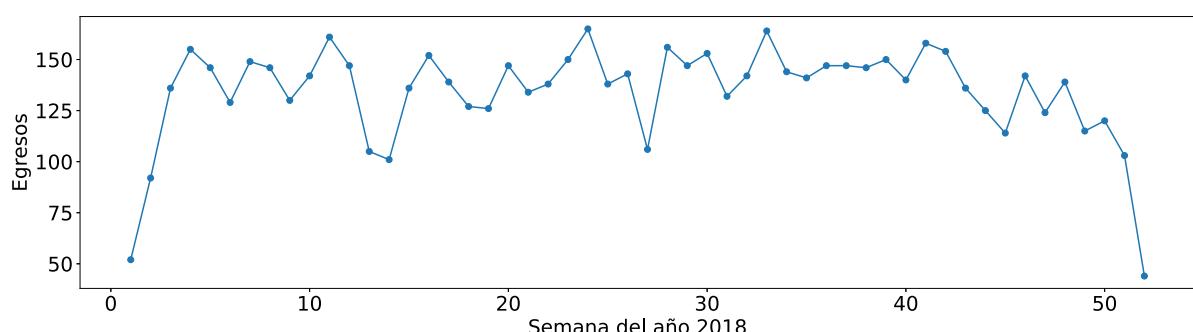
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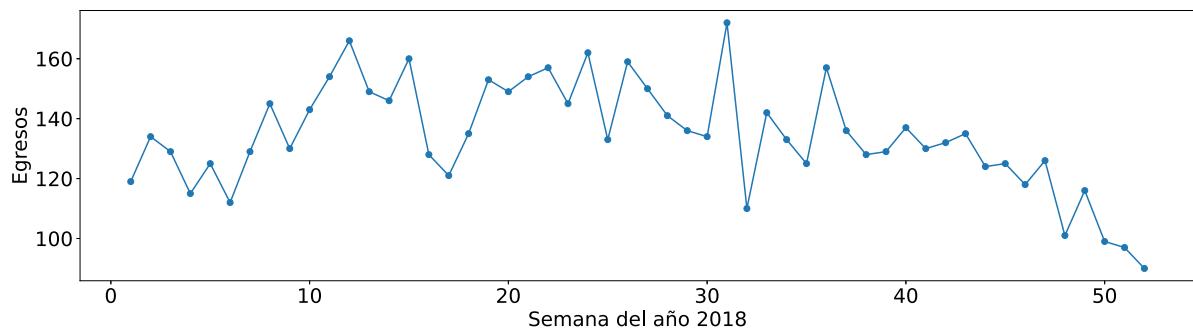


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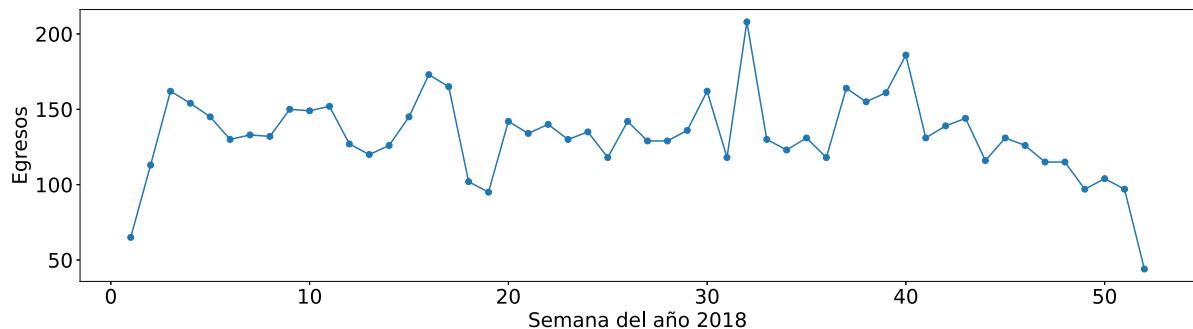
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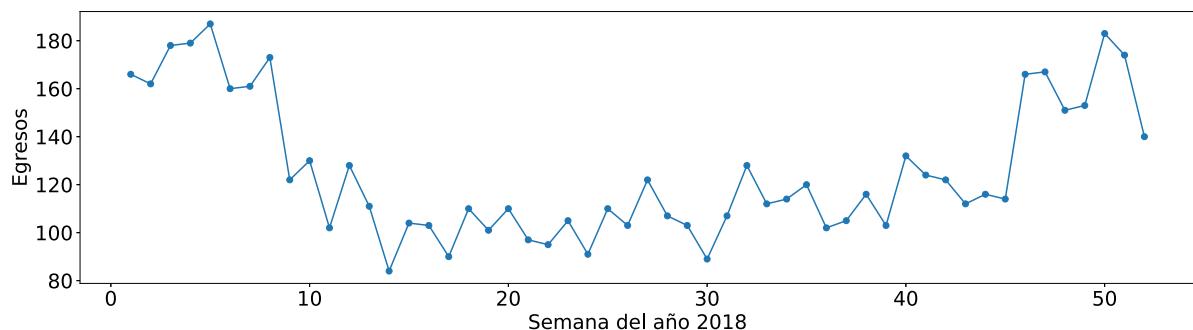
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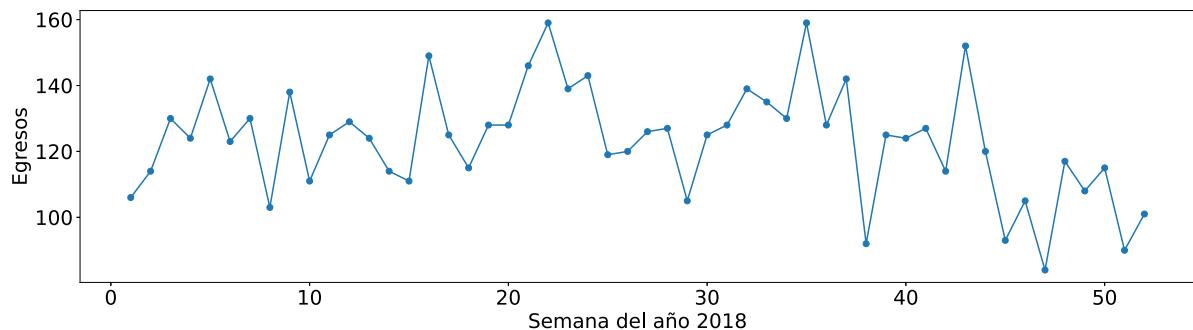
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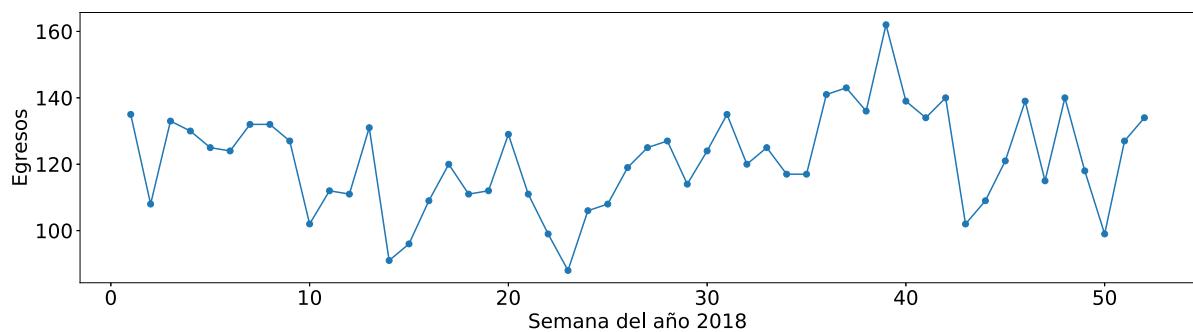
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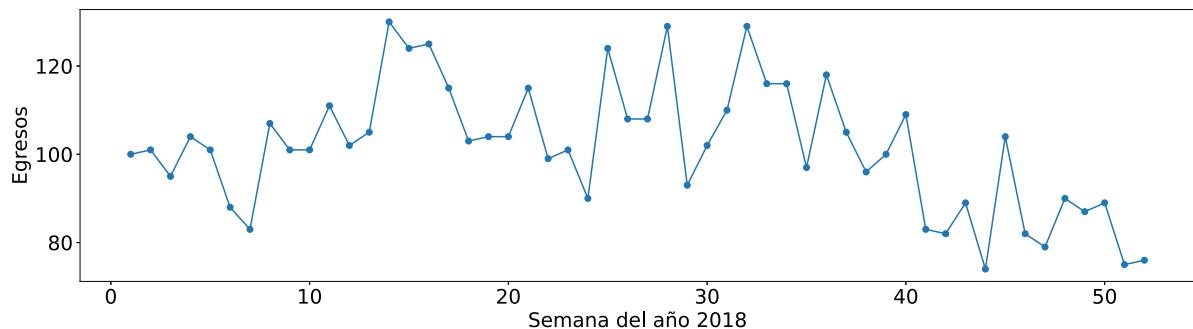
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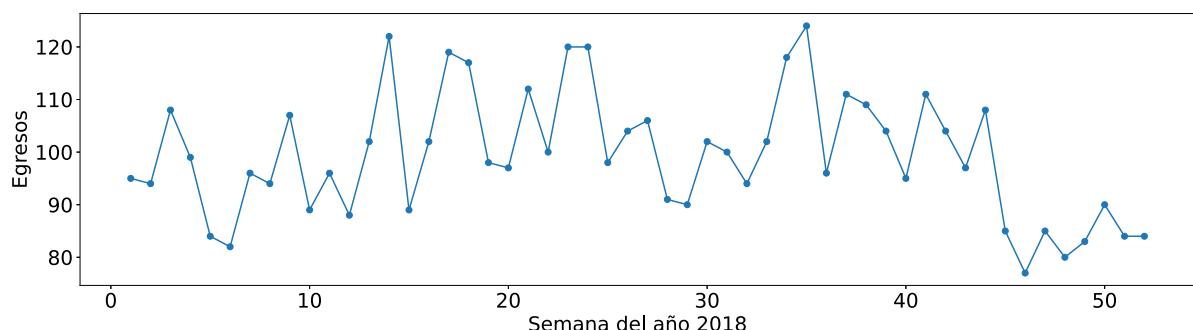
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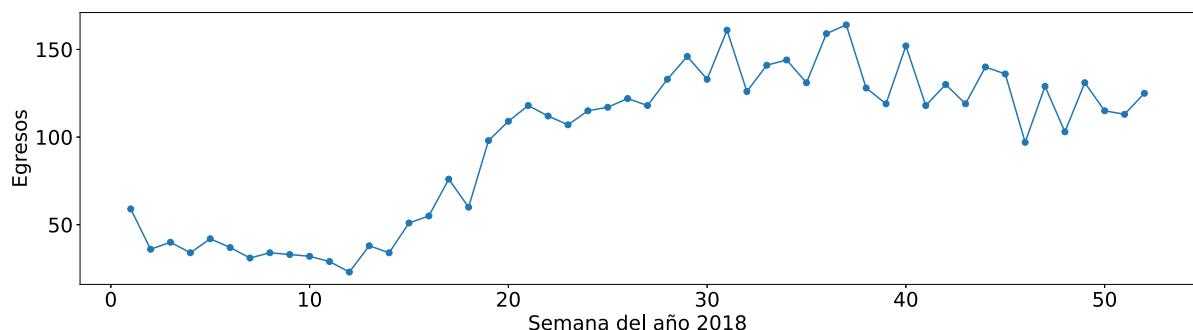
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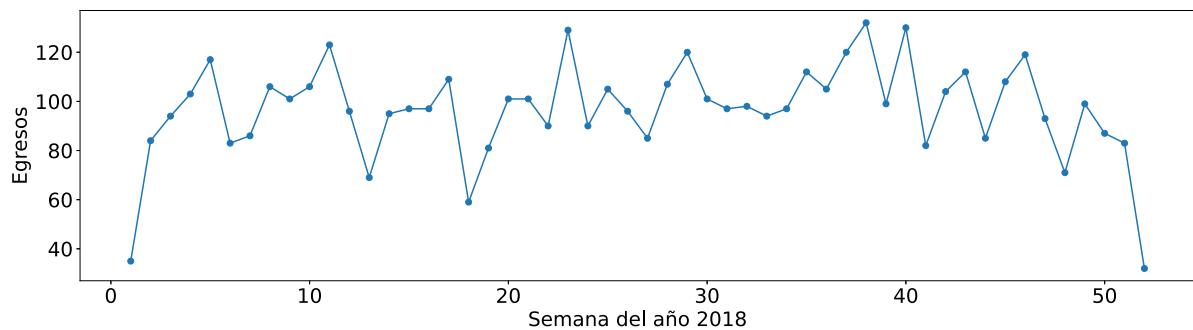
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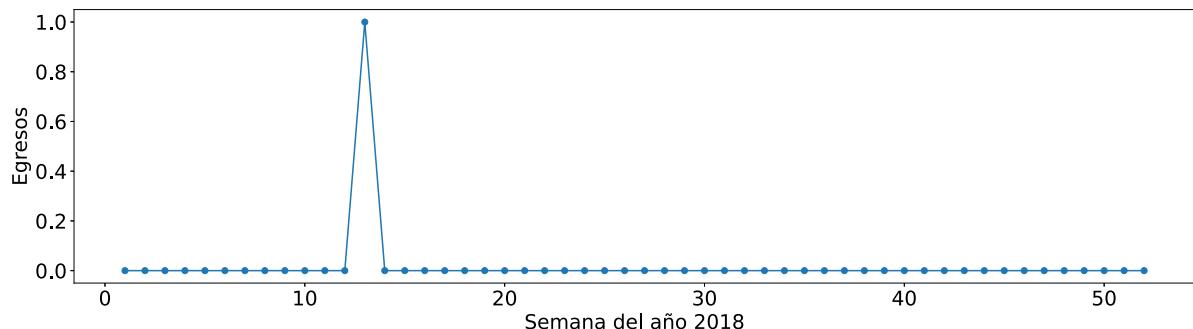
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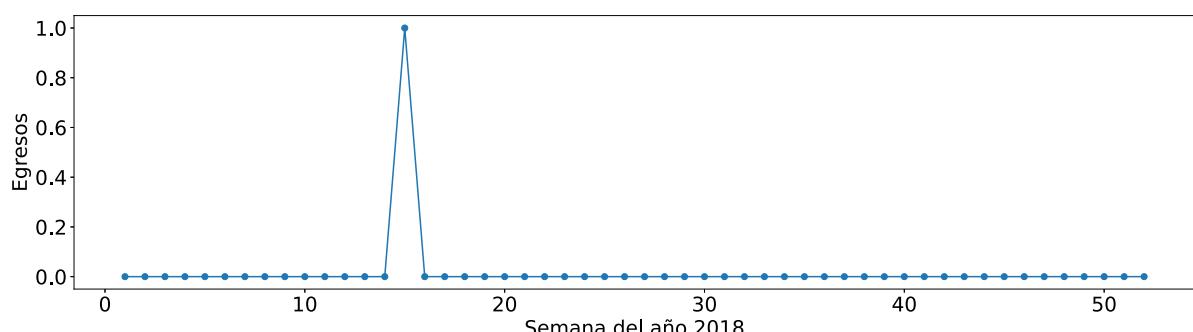
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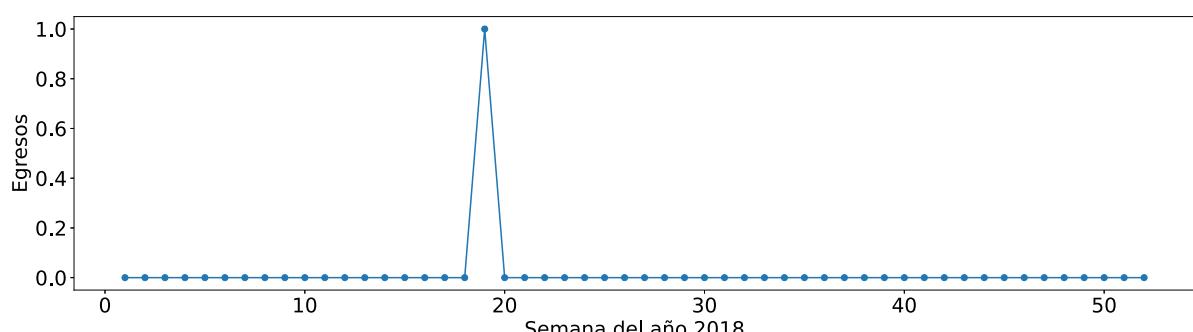
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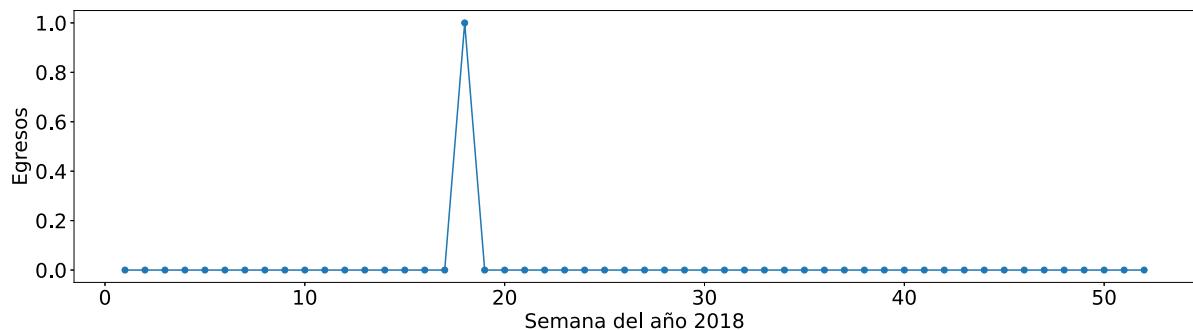
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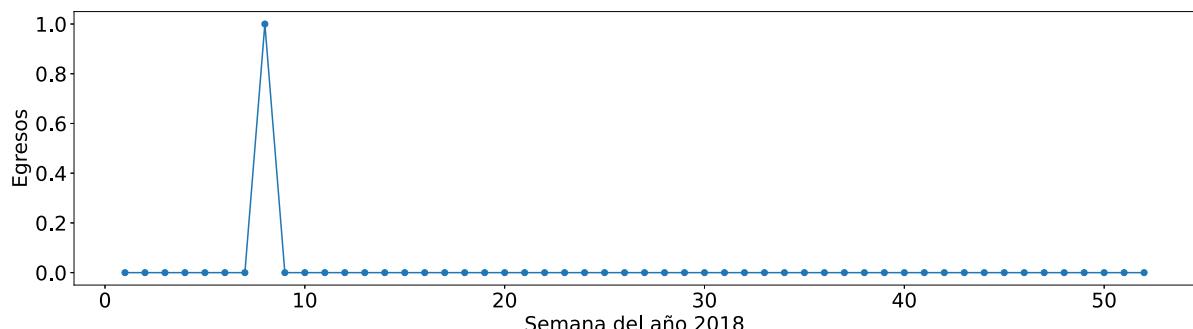
R412



T804



Z749



In [ ]: