

Change Values- AM Peak

March 25, 2017

```
In [1]: %matplotlib inline
```

```
In [2]: import pandas as pd
```

```
In [3]: import numpy as np
```

```
In [4]: df = pd.read_excel('means_am_peak.xlsx', 'Sheet1')
```

```
In [5]: df
```

```
Out[5]:
```

| | Station | Year | Means AM Peak |
|----|------------------------|------|---------------|
| 0 | Addison Road | 2010 | 2182.925000 |
| 1 | NaN | 2011 | 2193.325000 |
| 2 | NaN | 2012 | 2077.500000 |
| 3 | NaN | 2013 | 1995.433333 |
| 4 | NaN | 2014 | 1967.800000 |
| 5 | Anacostia | 2010 | 3014.400000 |
| 6 | NaN | 2011 | 3026.466667 |
| 7 | NaN | 2012 | 2975.716667 |
| 8 | NaN | 2013 | 2890.183333 |
| 9 | NaN | 2014 | 2893.400000 |
| 10 | Archives-Navy Memorial | 2010 | 347.375000 |
| 11 | NaN | 2011 | 378.416667 |
| 12 | NaN | 2012 | 400.516667 |
| 13 | NaN | 2013 | 389.083333 |
| 14 | NaN | 2014 | 370.591667 |
| 15 | Arlington Cemetery | 2010 | 13.650000 |
| 16 | NaN | 2011 | 16.433333 |
| 17 | NaN | 2012 | 17.075000 |
| 18 | NaN | 2013 | 14.425000 |
| 19 | NaN | 2014 | 16.333333 |
| 20 | Ballston | 2010 | 4412.925000 |
| 21 | NaN | 2011 | 4543.683333 |
| 22 | NaN | 2012 | 4466.250000 |
| 23 | NaN | 2013 | 4397.900000 |
| 24 | NaN | 2014 | 4422.241667 |
| 25 | Benning Road | 2010 | 1581.100000 |
| 26 | NaN | 2011 | 1557.808333 |

| | | | | |
|-----|-------------------|-----|------|-------------|
| 27 | | NaN | 2012 | 1553.216667 |
| 28 | | NaN | 2013 | 1571.550000 |
| 29 | | NaN | 2014 | 1583.316667 |
| .. | | ... | ... | ... |
| 409 | | NaN | 2012 | 1329.058333 |
| 410 | | NaN | 2013 | 1280.191667 |
| 411 | | NaN | 2014 | 1279.475000 |
| 412 | West Falls Church | | 2010 | 6534.150000 |
| 413 | | NaN | 2011 | 6807.950000 |
| 414 | | NaN | 2012 | 6713.683333 |
| 415 | | NaN | 2013 | 6521.550000 |
| 416 | | NaN | 2014 | 4637.383333 |
| 417 | West Hyattsville | | 2010 | 2003.800000 |
| 418 | | NaN | 2011 | 2073.725000 |
| 419 | | NaN | 2012 | 2126.650000 |
| 420 | | NaN | 2013 | 2108.158333 |
| 421 | | NaN | 2014 | 2139.775000 |
| 422 | Wheaton | | 2010 | 2160.450000 |
| 423 | | NaN | 2011 | 2236.375000 |
| 424 | | NaN | 2012 | 2119.816667 |
| 425 | | NaN | 2013 | 2030.066667 |
| 426 | | NaN | 2014 | 2070.666667 |
| 427 | White Flint | | 2010 | 1559.500000 |
| 428 | | NaN | 2011 | 1635.708333 |
| 429 | | NaN | 2012 | 1581.841667 |
| 430 | | NaN | 2013 | 1548.733333 |
| 431 | | NaN | 2014 | 1538.941667 |
| 432 | Wiehle | | 2013 | 3.366667 |
| 433 | | NaN | 2014 | 3721.714286 |
| 434 | Woodley Park-Zoo | | 2010 | 2584.450000 |
| 435 | | NaN | 2011 | 2720.841667 |
| 436 | | NaN | 2012 | 2723.983333 |
| 437 | | NaN | 2013 | 2598.083333 |
| 438 | | NaN | 2014 | 2555.966667 |

[439 rows x 3 columns]

```
In [6]: df['Station'] = pd.Series(df['Station']).fillna(method='ffill')
```

```
In [7]: df
```

```
Out[7]:
```

| | Station | Year | Means AM Peak |
|---|--------------|------|---------------|
| 0 | Addison Road | 2010 | 2182.925000 |
| 1 | Addison Road | 2011 | 2193.325000 |
| 2 | Addison Road | 2012 | 2077.500000 |
| 3 | Addison Road | 2013 | 1995.433333 |
| 4 | Addison Road | 2014 | 1967.800000 |
| 5 | Anacostia | 2010 | 3014.400000 |

| | | | |
|-----|------------------------|------|-------------|
| 6 | Anacostia | 2011 | 3026.466667 |
| 7 | Anacostia | 2012 | 2975.716667 |
| 8 | Anacostia | 2013 | 2890.183333 |
| 9 | Anacostia | 2014 | 2893.400000 |
| 10 | Archives-Navy Memorial | 2010 | 347.375000 |
| 11 | Archives-Navy Memorial | 2011 | 378.416667 |
| 12 | Archives-Navy Memorial | 2012 | 400.516667 |
| 13 | Archives-Navy Memorial | 2013 | 389.083333 |
| 14 | Archives-Navy Memorial | 2014 | 370.591667 |
| 15 | Arlington Cemetery | 2010 | 13.650000 |
| 16 | Arlington Cemetery | 2011 | 16.433333 |
| 17 | Arlington Cemetery | 2012 | 17.075000 |
| 18 | Arlington Cemetery | 2013 | 14.425000 |
| 19 | Arlington Cemetery | 2014 | 16.333333 |
| 20 | Ballston | 2010 | 4412.925000 |
| 21 | Ballston | 2011 | 4543.683333 |
| 22 | Ballston | 2012 | 4466.250000 |
| 23 | Ballston | 2013 | 4397.900000 |
| 24 | Ballston | 2014 | 4422.241667 |
| 25 | Benning Road | 2010 | 1581.100000 |
| 26 | Benning Road | 2011 | 1557.808333 |
| 27 | Benning Road | 2012 | 1553.216667 |
| 28 | Benning Road | 2013 | 1571.550000 |
| 29 | Benning Road | 2014 | 1583.316667 |
| .. | ... | ... | ... |
| 409 | Waterfront | 2012 | 1329.058333 |
| 410 | Waterfront | 2013 | 1280.191667 |
| 411 | Waterfront | 2014 | 1279.475000 |
| 412 | West Falls Church | 2010 | 6534.150000 |
| 413 | West Falls Church | 2011 | 6807.950000 |
| 414 | West Falls Church | 2012 | 6713.683333 |
| 415 | West Falls Church | 2013 | 6521.550000 |
| 416 | West Falls Church | 2014 | 4637.383333 |
| 417 | West Hyattsville | 2010 | 2003.800000 |
| 418 | West Hyattsville | 2011 | 2073.725000 |
| 419 | West Hyattsville | 2012 | 2126.650000 |
| 420 | West Hyattsville | 2013 | 2108.158333 |
| 421 | West Hyattsville | 2014 | 2139.775000 |
| 422 | Wheaton | 2010 | 2160.450000 |
| 423 | Wheaton | 2011 | 2236.375000 |
| 424 | Wheaton | 2012 | 2119.816667 |
| 425 | Wheaton | 2013 | 2030.066667 |
| 426 | Wheaton | 2014 | 2070.666667 |
| 427 | White Flint | 2010 | 1559.500000 |
| 428 | White Flint | 2011 | 1635.708333 |
| 429 | White Flint | 2012 | 1581.841667 |
| 430 | White Flint | 2013 | 1548.733333 |
| 431 | White Flint | 2014 | 1538.941667 |

```

432          Wiehle  2013      3.366667
433          Wiehle  2014    3721.714286
434    Woodley Park-Zoo  2010    2584.450000
435    Woodley Park-Zoo  2011    2720.841667
436    Woodley Park-Zoo  2012    2723.983333
437    Woodley Park-Zoo  2013    2598.083333
438    Woodley Park-Zoo  2014    2555.966667

```

[439 rows x 3 columns]

```
In [8]: df['Diff'] = df.groupby('Station')['Means AM Peak'].transform(pd.Series.diff).fillna(val)
```

```
In [9]: df
```

```

Out[9]:
      Station  Year  Means AM Peak  Diff
0    Addison Road  2010    2182.925000  0.000000
1    Addison Road  2011    2193.325000  10.400000
2    Addison Road  2012    2077.500000 -115.825000
3    Addison Road  2013    1995.433333 -82.066667
4    Addison Road  2014    1967.800000 -27.633333
5      Anacostia  2010    3014.400000  0.000000
6      Anacostia  2011    3026.466667  12.066667
7      Anacostia  2012    2975.716667 -50.750000
8      Anacostia  2013    2890.183333 -85.533333
9      Anacostia  2014    2893.400000  3.216667
10 Archives-Navy Memorial  2010    347.375000  0.000000
11 Archives-Navy Memorial  2011    378.416667  31.041667
12 Archives-Navy Memorial  2012    400.516667  22.100000
13 Archives-Navy Memorial  2013    389.083333 -11.433333
14 Archives-Navy Memorial  2014    370.591667 -18.491667
15  Arlington Cemetery  2010    13.650000  0.000000
16  Arlington Cemetery  2011    16.433333  2.783333
17  Arlington Cemetery  2012    17.075000  0.641667
18  Arlington Cemetery  2013    14.425000 -2.650000
19  Arlington Cemetery  2014    16.333333  1.908333
20      Ballston  2010    4412.925000  0.000000
21      Ballston  2011    4543.683333 130.758333
22      Ballston  2012    4466.250000 -77.433333
23      Ballston  2013    4397.900000 -68.350000
24      Ballston  2014    4422.241667  24.341667
25    Benning Road  2010    1581.100000  0.000000
26    Benning Road  2011    1557.808333 -23.291667
27    Benning Road  2012    1553.216667 -4.591667
28    Benning Road  2013    1571.550000  18.333333
29    Benning Road  2014    1583.316667  11.766667
..          ...    ...          ...
409    Waterfront  2012    1329.058333  82.775000
410    Waterfront  2013    1280.191667 -48.866667

```

| | | | | |
|-----|-------------------|------|-------------|--------------|
| 411 | Waterfront | 2014 | 1279.475000 | -0.716667 |
| 412 | West Falls Church | 2010 | 6534.150000 | 0.000000 |
| 413 | West Falls Church | 2011 | 6807.950000 | 273.800000 |
| 414 | West Falls Church | 2012 | 6713.683333 | -94.266667 |
| 415 | West Falls Church | 2013 | 6521.550000 | -192.133333 |
| 416 | West Falls Church | 2014 | 4637.383333 | -1884.166667 |
| 417 | West Hyattsville | 2010 | 2003.800000 | 0.000000 |
| 418 | West Hyattsville | 2011 | 2073.725000 | 69.925000 |
| 419 | West Hyattsville | 2012 | 2126.650000 | 52.925000 |
| 420 | West Hyattsville | 2013 | 2108.158333 | -18.491667 |
| 421 | West Hyattsville | 2014 | 2139.775000 | 31.616667 |
| 422 | Wheaton | 2010 | 2160.450000 | 0.000000 |
| 423 | Wheaton | 2011 | 2236.375000 | 75.925000 |
| 424 | Wheaton | 2012 | 2119.816667 | -116.558333 |
| 425 | Wheaton | 2013 | 2030.066667 | -89.750000 |
| 426 | Wheaton | 2014 | 2070.666667 | 40.600000 |
| 427 | White Flint | 2010 | 1559.500000 | 0.000000 |
| 428 | White Flint | 2011 | 1635.708333 | 76.208333 |
| 429 | White Flint | 2012 | 1581.841667 | -53.866667 |
| 430 | White Flint | 2013 | 1548.733333 | -33.108333 |
| 431 | White Flint | 2014 | 1538.941667 | -9.791667 |
| 432 | Wiehle | 2013 | 3.366667 | 0.000000 |
| 433 | Wiehle | 2014 | 3721.714286 | 3718.347619 |
| 434 | Woodley Park-Zoo | 2010 | 2584.450000 | 0.000000 |
| 435 | Woodley Park-Zoo | 2011 | 2720.841667 | 136.391667 |
| 436 | Woodley Park-Zoo | 2012 | 2723.983333 | 3.141667 |
| 437 | Woodley Park-Zoo | 2013 | 2598.083333 | -125.900000 |
| 438 | Woodley Park-Zoo | 2014 | 2555.966667 | -42.116667 |

[439 rows x 4 columns]

```
In [10]: df['% Change'] = df.groupby('Station')['Means AM Peak'].pct_change().fillna(value=0)
```

```
In [11]: df
```

```
Out[11]:
```

| | Station | Year | Means AM Peak | Diff | % Change |
|----|------------------------|------|---------------|-------------|-----------|
| 0 | Addison Road | 2010 | 2182.925000 | 0.000000 | 0.000000 |
| 1 | Addison Road | 2011 | 2193.325000 | 10.400000 | 0.004764 |
| 2 | Addison Road | 2012 | 2077.500000 | -115.825000 | -0.052808 |
| 3 | Addison Road | 2013 | 1995.433333 | -82.066667 | -0.039503 |
| 4 | Addison Road | 2014 | 1967.800000 | -27.633333 | -0.013848 |
| 5 | Anacostia | 2010 | 3014.400000 | 0.000000 | 0.000000 |
| 6 | Anacostia | 2011 | 3026.466667 | 12.066667 | 0.004003 |
| 7 | Anacostia | 2012 | 2975.716667 | -50.750000 | -0.016769 |
| 8 | Anacostia | 2013 | 2890.183333 | -85.533333 | -0.028744 |
| 9 | Anacostia | 2014 | 2893.400000 | 3.216667 | 0.001113 |
| 10 | Archives-Navy Memorial | 2010 | 347.375000 | 0.000000 | 0.000000 |
| 11 | Archives-Navy Memorial | 2011 | 378.416667 | 31.041667 | 0.089361 |

| | | | | | |
|-----|------------------------|------|-------------|--------------|-------------|
| 12 | Archives-Navy Memorial | 2012 | 400.516667 | 22.100000 | 0.058401 |
| 13 | Archives-Navy Memorial | 2013 | 389.083333 | -11.433333 | -0.028546 |
| 14 | Archives-Navy Memorial | 2014 | 370.591667 | -18.491667 | -0.047526 |
| 15 | Arlington Cemetery | 2010 | 13.650000 | 0.000000 | 0.000000 |
| 16 | Arlington Cemetery | 2011 | 16.433333 | 2.783333 | 0.203907 |
| 17 | Arlington Cemetery | 2012 | 17.075000 | 0.641667 | 0.039047 |
| 18 | Arlington Cemetery | 2013 | 14.425000 | -2.650000 | -0.155198 |
| 19 | Arlington Cemetery | 2014 | 16.333333 | 1.908333 | 0.132293 |
| 20 | Ballston | 2010 | 4412.925000 | 0.000000 | 0.000000 |
| 21 | Ballston | 2011 | 4543.683333 | 130.758333 | 0.029631 |
| 22 | Ballston | 2012 | 4466.250000 | -77.433333 | -0.017042 |
| 23 | Ballston | 2013 | 4397.900000 | -68.350000 | -0.015304 |
| 24 | Ballston | 2014 | 4422.241667 | 24.341667 | 0.005535 |
| 25 | Benning Road | 2010 | 1581.100000 | 0.000000 | 0.000000 |
| 26 | Benning Road | 2011 | 1557.808333 | -23.291667 | -0.014731 |
| 27 | Benning Road | 2012 | 1553.216667 | -4.591667 | -0.002948 |
| 28 | Benning Road | 2013 | 1571.550000 | 18.333333 | 0.011803 |
| 29 | Benning Road | 2014 | 1583.316667 | 11.766667 | 0.007487 |
| .. | ... | ... | ... | ... | ... |
| 409 | Waterfront | 2012 | 1329.058333 | 82.775000 | 0.066417 |
| 410 | Waterfront | 2013 | 1280.191667 | -48.866667 | -0.036768 |
| 411 | Waterfront | 2014 | 1279.475000 | -0.716667 | -0.000560 |
| 412 | West Falls Church | 2010 | 6534.150000 | 0.000000 | 0.000000 |
| 413 | West Falls Church | 2011 | 6807.950000 | 273.800000 | 0.041903 |
| 414 | West Falls Church | 2012 | 6713.683333 | -94.266667 | -0.013847 |
| 415 | West Falls Church | 2013 | 6521.550000 | -192.133333 | -0.028618 |
| 416 | West Falls Church | 2014 | 4637.383333 | -1884.166667 | -0.288914 |
| 417 | West Hyattsville | 2010 | 2003.800000 | 0.000000 | 0.000000 |
| 418 | West Hyattsville | 2011 | 2073.725000 | 69.925000 | 0.034896 |
| 419 | West Hyattsville | 2012 | 2126.650000 | 52.925000 | 0.025522 |
| 420 | West Hyattsville | 2013 | 2108.158333 | -18.491667 | -0.008695 |
| 421 | West Hyattsville | 2014 | 2139.775000 | 31.616667 | 0.014997 |
| 422 | Wheaton | 2010 | 2160.450000 | 0.000000 | 0.000000 |
| 423 | Wheaton | 2011 | 2236.375000 | 75.925000 | 0.035143 |
| 424 | Wheaton | 2012 | 2119.816667 | -116.558333 | -0.052119 |
| 425 | Wheaton | 2013 | 2030.066667 | -89.750000 | -0.042339 |
| 426 | Wheaton | 2014 | 2070.666667 | 40.600000 | 0.019999 |
| 427 | White Flint | 2010 | 1559.500000 | 0.000000 | 0.000000 |
| 428 | White Flint | 2011 | 1635.708333 | 76.208333 | 0.048867 |
| 429 | White Flint | 2012 | 1581.841667 | -53.866667 | -0.032932 |
| 430 | White Flint | 2013 | 1548.733333 | -33.108333 | -0.020930 |
| 431 | White Flint | 2014 | 1538.941667 | -9.791667 | -0.006322 |
| 432 | Wiehle | 2013 | 3.366667 | 0.000000 | 0.000000 |
| 433 | Wiehle | 2014 | 3721.714286 | 3718.347619 | 1104.459689 |
| 434 | Woodley Park-Zoo | 2010 | 2584.450000 | 0.000000 | 0.000000 |
| 435 | Woodley Park-Zoo | 2011 | 2720.841667 | 136.391667 | 0.052774 |
| 436 | Woodley Park-Zoo | 2012 | 2723.983333 | 3.141667 | 0.001155 |
| 437 | Woodley Park-Zoo | 2013 | 2598.083333 | -125.900000 | -0.046219 |

```
438          Woodley Park-Zoo  2014    2555.966667   -42.116667   -0.016211
```

```
[439 rows x 5 columns]
```

```
In [13]: def label(change):
         if change < 0.05 and change > -0.05:
             return "flat"
         if change < 0:
             return "down"
         if change > 0:
             return "up"
```

```
In [14]: df['Label'] = df.apply(lambda row: label(row['% Change']), axis=1)
```

```
In [15]: df
```

```
Out[15]:
```

| | Station | Year | Means AM Peak | Diff | % Change \ |
|-----|------------------------|------|---------------|-------------|------------|
| 0 | Addison Road | 2010 | 2182.925000 | 0.000000 | 0.000000 |
| 1 | Addison Road | 2011 | 2193.325000 | 10.400000 | 0.004764 |
| 2 | Addison Road | 2012 | 2077.500000 | -115.825000 | -0.052808 |
| 3 | Addison Road | 2013 | 1995.433333 | -82.066667 | -0.039503 |
| 4 | Addison Road | 2014 | 1967.800000 | -27.633333 | -0.013848 |
| 5 | Anacostia | 2010 | 3014.400000 | 0.000000 | 0.000000 |
| 6 | Anacostia | 2011 | 3026.466667 | 12.066667 | 0.004003 |
| 7 | Anacostia | 2012 | 2975.716667 | -50.750000 | -0.016769 |
| 8 | Anacostia | 2013 | 2890.183333 | -85.533333 | -0.028744 |
| 9 | Anacostia | 2014 | 2893.400000 | 3.216667 | 0.001113 |
| 10 | Archives-Navy Memorial | 2010 | 347.375000 | 0.000000 | 0.000000 |
| 11 | Archives-Navy Memorial | 2011 | 378.416667 | 31.041667 | 0.089361 |
| 12 | Archives-Navy Memorial | 2012 | 400.516667 | 22.100000 | 0.058401 |
| 13 | Archives-Navy Memorial | 2013 | 389.083333 | -11.433333 | -0.028546 |
| 14 | Archives-Navy Memorial | 2014 | 370.591667 | -18.491667 | -0.047526 |
| 15 | Arlington Cemetery | 2010 | 13.650000 | 0.000000 | 0.000000 |
| 16 | Arlington Cemetery | 2011 | 16.433333 | 2.783333 | 0.203907 |
| 17 | Arlington Cemetery | 2012 | 17.075000 | 0.641667 | 0.039047 |
| 18 | Arlington Cemetery | 2013 | 14.425000 | -2.650000 | -0.155198 |
| 19 | Arlington Cemetery | 2014 | 16.333333 | 1.908333 | 0.132293 |
| 20 | Ballston | 2010 | 4412.925000 | 0.000000 | 0.000000 |
| 21 | Ballston | 2011 | 4543.683333 | 130.758333 | 0.029631 |
| 22 | Ballston | 2012 | 4466.250000 | -77.433333 | -0.017042 |
| 23 | Ballston | 2013 | 4397.900000 | -68.350000 | -0.015304 |
| 24 | Ballston | 2014 | 4422.241667 | 24.341667 | 0.005535 |
| 25 | Benning Road | 2010 | 1581.100000 | 0.000000 | 0.000000 |
| 26 | Benning Road | 2011 | 1557.808333 | -23.291667 | -0.014731 |
| 27 | Benning Road | 2012 | 1553.216667 | -4.591667 | -0.002948 |
| 28 | Benning Road | 2013 | 1571.550000 | 18.333333 | 0.011803 |
| 29 | Benning Road | 2014 | 1583.316667 | 11.766667 | 0.007487 |
| .. | ... | ... | ... | ... | ... |
| 409 | Waterfront | 2012 | 1329.058333 | 82.775000 | 0.066417 |

| | | | | | |
|-----|-------------------|------|-------------|--------------|-------------|
| 410 | Waterfront | 2013 | 1280.191667 | -48.866667 | -0.036768 |
| 411 | Waterfront | 2014 | 1279.475000 | -0.716667 | -0.000560 |
| 412 | West Falls Church | 2010 | 6534.150000 | 0.000000 | 0.000000 |
| 413 | West Falls Church | 2011 | 6807.950000 | 273.800000 | 0.041903 |
| 414 | West Falls Church | 2012 | 6713.683333 | -94.266667 | -0.013847 |
| 415 | West Falls Church | 2013 | 6521.550000 | -192.133333 | -0.028618 |
| 416 | West Falls Church | 2014 | 4637.383333 | -1884.166667 | -0.288914 |
| 417 | West Hyattsville | 2010 | 2003.800000 | 0.000000 | 0.000000 |
| 418 | West Hyattsville | 2011 | 2073.725000 | 69.925000 | 0.034896 |
| 419 | West Hyattsville | 2012 | 2126.650000 | 52.925000 | 0.025522 |
| 420 | West Hyattsville | 2013 | 2108.158333 | -18.491667 | -0.008695 |
| 421 | West Hyattsville | 2014 | 2139.775000 | 31.616667 | 0.014997 |
| 422 | Wheaton | 2010 | 2160.450000 | 0.000000 | 0.000000 |
| 423 | Wheaton | 2011 | 2236.375000 | 75.925000 | 0.035143 |
| 424 | Wheaton | 2012 | 2119.816667 | -116.558333 | -0.052119 |
| 425 | Wheaton | 2013 | 2030.066667 | -89.750000 | -0.042339 |
| 426 | Wheaton | 2014 | 2070.666667 | 40.600000 | 0.019999 |
| 427 | White Flint | 2010 | 1559.500000 | 0.000000 | 0.000000 |
| 428 | White Flint | 2011 | 1635.708333 | 76.208333 | 0.048867 |
| 429 | White Flint | 2012 | 1581.841667 | -53.866667 | -0.032932 |
| 430 | White Flint | 2013 | 1548.733333 | -33.108333 | -0.020930 |
| 431 | White Flint | 2014 | 1538.941667 | -9.791667 | -0.006322 |
| 432 | Wiehle | 2013 | 3.366667 | 0.000000 | 0.000000 |
| 433 | Wiehle | 2014 | 3721.714286 | 3718.347619 | 1104.459689 |
| 434 | Woodley Park-Zoo | 2010 | 2584.450000 | 0.000000 | 0.000000 |
| 435 | Woodley Park-Zoo | 2011 | 2720.841667 | 136.391667 | 0.052774 |
| 436 | Woodley Park-Zoo | 2012 | 2723.983333 | 3.141667 | 0.001155 |
| 437 | Woodley Park-Zoo | 2013 | 2598.083333 | -125.900000 | -0.046219 |
| 438 | Woodley Park-Zoo | 2014 | 2555.966667 | -42.116667 | -0.016211 |

| | Label |
|----|-------|
| 0 | flat |
| 1 | flat |
| 2 | down |
| 3 | flat |
| 4 | flat |
| 5 | flat |
| 6 | flat |
| 7 | flat |
| 8 | flat |
| 9 | flat |
| 10 | flat |
| 11 | up |
| 12 | up |
| 13 | flat |
| 14 | flat |
| 15 | flat |
| 16 | up |


```

17    flat
18    down
19      up
20    flat
21    flat
22    flat
23    flat
24    flat
25    flat
26    flat
27    flat
28    flat
29    flat
..     ...
409    up
410    flat
411    flat
412    flat
413    flat
414    flat
415    flat
416    down
417    flat
418    flat
419    flat
420    flat
421    flat
422    flat
423    flat
424    down
425    flat
426    flat
427    flat
428    flat
429    flat
430    flat
431    flat
432    flat
433      up
434    flat
435      up
436    flat
437    flat
438    flat

```

```
[439 rows x 6 columns]
```

```
In [16]: df.to_excel('change_values_am_peak.xlsx', sheet_name='Sheet1')
```

```
In [ ]:
```