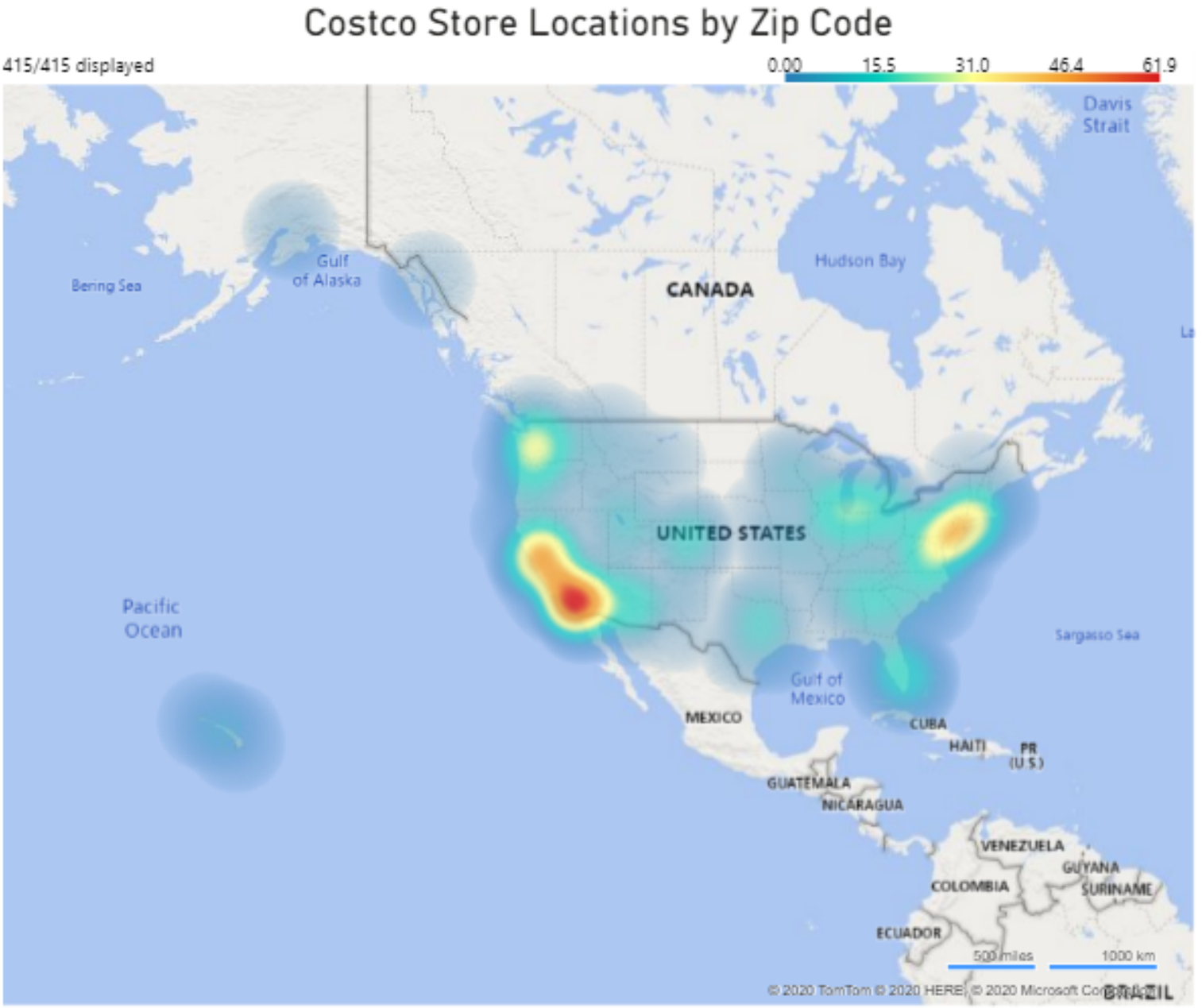
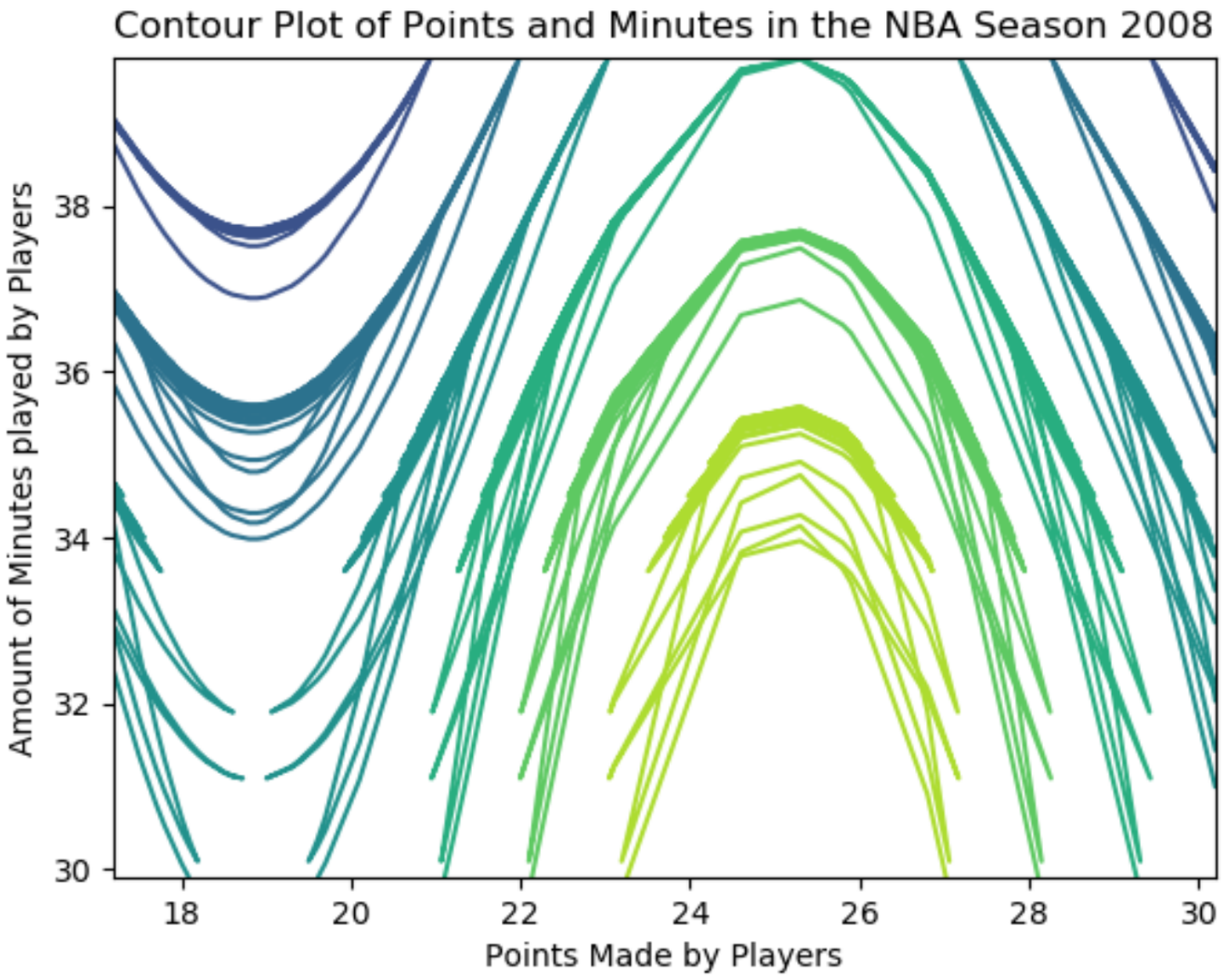
Power BI Visuals

Heat Map



Spatial Chart

Contour Chart



Python Plots

In [1]:
```
# Import libraries
import pandas as pd
import matplotlib.pyplot as plt
import squarify
import numpy as np
from scipy.stats import kde
import squarify
import seaborn as sns
```

In [2]:
```
# Import Data
costco_df = pd.read_csv('costcos-geocoded.csv')
costco_df.head()
```

Out[2]:

	Address	City	State	Zip Code	Latitude	Longitude
0	1205 N. Memorial Parkway	Huntsville	Alabama	35801-5930	34.743095	-86.600955
1	3650 Galleria Circle	Hoover	Alabama	35244-2346	33.377649	-86.812420
2	8251 Eastchase Parkway	Montgomery	Alabama	36117	32.363889	-86.150884
3	5225 Commercial Boulevard	Juneau	Alaska	99801-7210	58.359200	-134.483000
4	330 West Dimond Blvd	Anchorage	Alaska	99515-1950	61.143266	-149.884217

In [3]:
```
# Import Data
nba_df = pd.read_csv('ppg2008.csv')
nba_df.head()
```

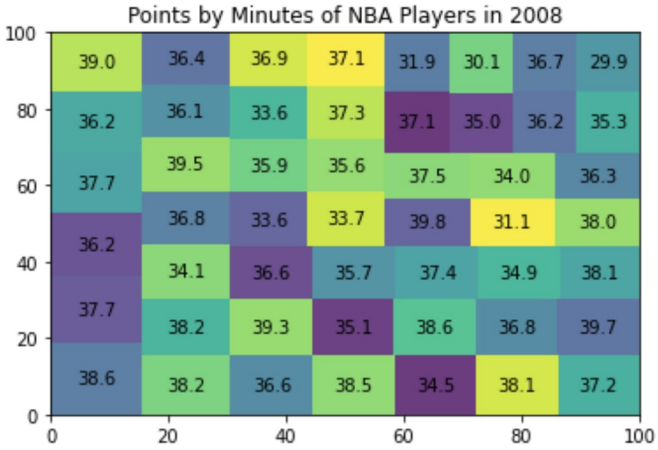
Out[3]:

	Name	G	MIN	PTS	FGM	FGA	FGP	FTM	FTA	FTP	...	3PA	3PP	ORB	DRB	TRB	AST	STL
0	Dwyane Wade	79	38.6	30.2	10.8	22.0	0.491	7.5	9.8	0.765	...	3.5	0.317	1.1	3.9	5.0	7.5	2.2
1	LeBron James	81	37.7	28.4	9.7	19.9	0.489	7.3	9.4	0.780	...	4.7	0.344	1.3	6.3	7.6	7.2	1.7
2	Kobe Bryant	82	36.2	26.8	9.8	20.9	0.467	5.9	6.9	0.856	...	4.1	0.351	1.1	4.1	5.2	4.9	1.5
3	Dirk Nowitzki	81	37.7	25.9	9.6	20.0	0.479	6.0	6.7	0.890	...	2.1	0.359	1.1	7.3	8.4	2.4	0.8
4	Danny Granger	67	36.2	25.8	8.5	19.1	0.447	6.0	6.9	0.878	...	6.7	0.404	0.7	4.4	5.1	2.7	1.0

5 rows × 21 columns

Heat Map

In [4]:
```
squarify.plot(sizes=nba_df['PTS'], label=nba_df['MIN'], alpha=0.8)
plt.title('Points by Minutes of NBA Players in 2008')
plt.show()
```



Spatial Chart

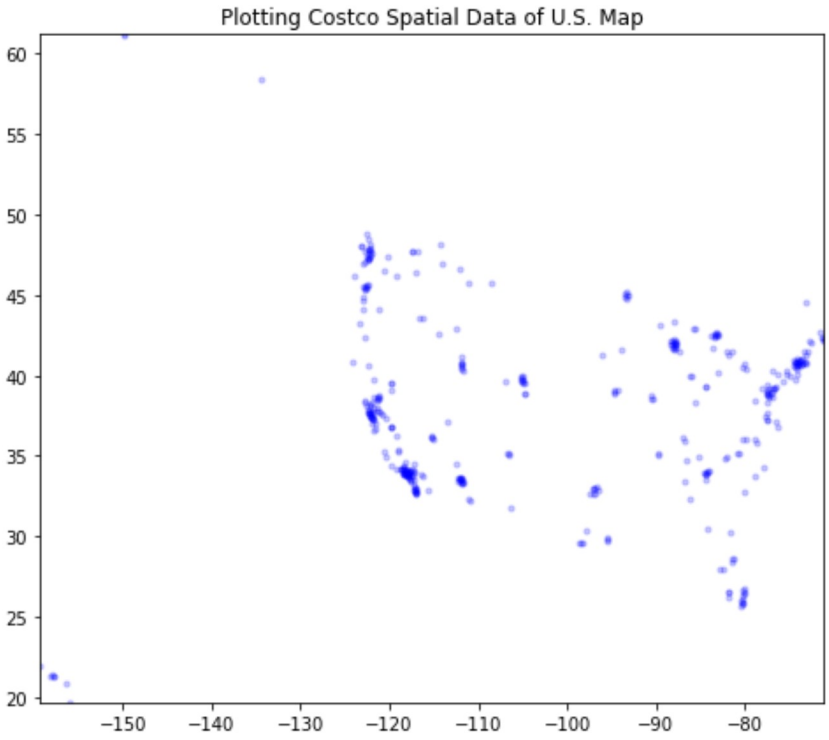
In [5]:
```
BBox = ((costco_df['Longitude'].min(), costco_df['Longitude'].max(),
         costco_df['Latitude'].min(), costco_df['Latitude'].max()))
print(BBox)
```

```
(-159.3799149, -71.066458, 19.687344, 61.210815000000004)
```

In [6]:
```
ruh_m = plt.imread('map.png')
```

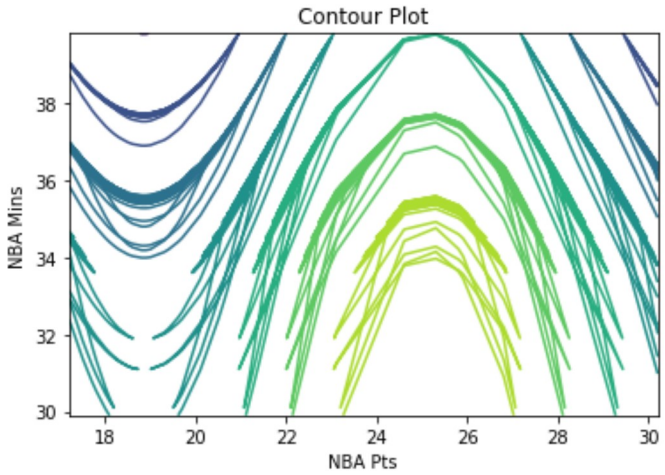
In [12]:
```
fig, ax = plt.subplots(figsize = (8,7))
ax.scatter(costco_df['Longitude'], costco_df['Latitude'], zorder=1, alpha=0.2, c='b
', s=10)

ax.set_title('Plotting Costco Spatial Data of U.S. Map')
ax.set_xlim(BBox[0], BBox[1])
ax.set_ylim(BBox[2], BBox[3])

#ax.imshow(ruh_m, zorder = 0, extent = BBox, aspect = 'equal')
```

Out[12]: (19.687344, 61.210815000000004)



Contour Plot

In [14]:
```
[X,Y] = np.meshgrid(nba_df['PTS'], nba_df['MIN'])
fig, ax = plt.subplots(1,1)
Z = np.cos(X/2) + np.sin(Y/4)
ax.contour(X,Y,Z)
ax.set_title('Contour Plot')
ax.set_xlabel('NBA Pts')
ax.set_ylabel('NBA Mins')
plt.show()
```



4.2 Exercise R Plots

Gabriel Valenzuela

7/23/2020

R Plots

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
## Google's Terms of Service: https://cloud.google.com/maps-platform/terms/.
```

```
## Please cite ggmap if you use it! See citation("ggmap") for details.
```

```
##
## Attaching package: 'plotly'
```

```
## The following object is masked from 'package:ggmap':
##
##     wind
```

```
## The following object is masked from 'package:ggplot2':
##
##     last_plot
```

```
## The following object is masked from 'package:stats':
##
##     filter
```

```
## The following object is masked from 'package:graphics':
##
##     layout
```

```
##             Name  G  MIN  PTS  FGM  FGA   FGP FTM FTA   FTP X3PM X3PA  X3PP ORB
## 1   Dwyane Wade  79 38.6 30.2 10.8 22.0 0.491 7.5 9.8 0.765  1.1  3.5 0.317 1.1
## 2  LeBron James  81 37.7 28.4  9.7 19.9 0.489 7.3 9.4 0.780  1.6  4.7 0.344 1.3
## 3   Kobe Bryant  82 36.2 26.8  9.8 20.9 0.467 5.9 6.9 0.856  1.4  4.1 0.351 1.1
## 4 Dirk Nowitzki  81 37.7 25.9  9.6 20.0 0.479 6.0 6.7 0.890  0.8  2.1 0.359 1.1
## 5 Danny Granger  67 36.2 25.8  8.5 19.1 0.447 6.0 6.9 0.878  2.7  6.7 0.404 0.7
## 6  Kevin Durant  74 39.0 25.3  8.9 18.8 0.476 6.1 7.1 0.863  1.3  3.1 0.422 1.0
##   DRB TRB AST STL BLK  TO  PF
## 1 3.9 5.0 7.5 2.2 1.3 3.4 2.3
## 2 6.3 7.6 7.2 1.7 1.1 3.0 1.7
## 3 4.1 5.2 4.9 1.5 0.5 2.6 2.3
## 4 7.3 8.4 2.4 0.8 0.8 1.9 2.2
## 5 4.4 5.1 2.7 1.0 1.4 2.5 3.1
## 6 5.5 6.5 2.8 1.3 0.7 3.0 1.8
```

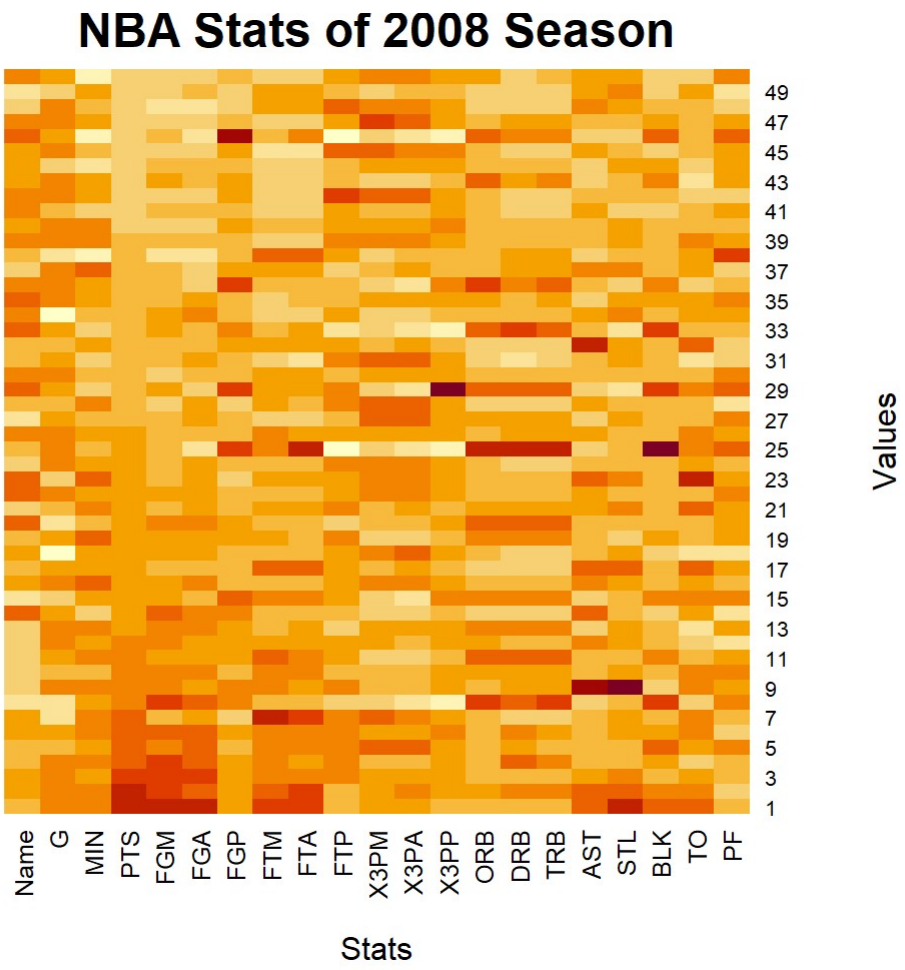
```
##                    Address       City   State   Zip.Code Latitude  Longitude
## 1  1205 N. Memorial Parkway Huntsville Alabama 35801-5930 34.74309  -86.60096
## 2      3650 Galleria Circle     Hoover Alabama 35244-2346 33.37765  -86.81242
## 3    8251 Eastchase Parkway Montgomery Alabama      36117 32.36389  -86.15088
## 4 5225 Commercial Boulevard     Juneau  Alaska 99801-7210 58.35920 -134.48300
## 5      330 West Dimond Blvd  Anchorage  Alaska 99515-1950 61.14327 -149.88422
## 6          4125 DeBarr Road  Anchorage  Alaska 99508-3115 61.21081 -149.80434
```

Heat Map

```
##     G  MIN  PTS  FGM  FGA   FGP FTM  FTA   FTP X3PM X3PA  X3PP ORB DRB  TRB
## 1  79 38.6 30.2 10.8 22.0 0.491 7.5  9.8 0.765  1.1  3.5 0.317 1.1 3.9  5.0
## 2  81 37.7 28.4  9.7 19.9 0.489 7.3  9.4 0.780  1.6  4.7 0.344 1.3 6.3  7.6
## 3  82 36.2 26.8  9.8 20.9 0.467 5.9  6.9 0.856  1.4  4.1 0.351 1.1 4.1  5.2
## 4  81 37.7 25.9  9.6 20.0 0.479 6.0  6.7 0.890  0.8  2.1 0.359 1.1 7.3  8.4
## 5  67 36.2 25.8  8.5 19.1 0.447 6.0  6.9 0.878  2.7  6.7 0.404 0.7 4.4  5.1
## 6  74 39.0 25.3  8.9 18.8 0.476 6.1  7.1 0.863  1.3  3.1 0.422 1.0 5.5  6.5
## 7  51 38.2 24.6  6.7 15.9 0.420 9.0 10.3 0.867  2.3  5.4 0.415 0.6 3.0  3.6
## 8  50 36.6 23.1  9.7 19.5 0.497 3.7  5.0 0.738  0.0  0.1 0.000 3.4 7.5 11.0
## 9  78 38.5 22.8  8.1 16.1 0.503 5.8  6.7 0.868  0.8  2.3 0.364 0.9 4.7  5.5
## 10 66 34.5 22.8  8.1 18.3 0.443 5.6  7.1 0.793  1.0  2.6 0.371 1.6 5.2  6.8
## 11 77 38.1 22.7  8.0 16.4 0.487 6.5  8.0 0.817  0.2  0.6 0.245 2.8 7.2 10.0
## 12 78 37.2 22.6  8.1 16.9 0.480 5.3  6.5 0.824  1.1  2.8 0.377 1.3 3.4  4.7
## 13 81 38.2 22.2  8.3 17.8 0.468 4.2  5.6 0.754  1.4  3.9 0.351 2.4 6.5  8.9
## 14 72 34.1 22.0  8.9 17.5 0.506 3.9  5.0 0.782  0.3  0.9 0.292 0.4 2.7  3.1
## 15 53 36.8 21.4  7.6 14.1 0.539 6.1  7.3 0.835  0.1  0.1 0.429 2.2 5.9  8.1
## 16 79 39.5 21.4  7.8 18.0 0.437 3.8  4.6 0.826  1.9  5.2 0.360 0.8 3.6  4.4
## 17 69 36.1 21.3  6.6 15.1 0.438 7.2  8.8 0.820  0.9  3.2 0.291 0.4 2.9  3.3
## 18 33 36.4 21.2  7.5 16.6 0.455 4.0  4.9 0.814  2.1  5.8 0.366 0.7 2.5  3.2
## 19 76 39.3 21.0  8.0 17.0 0.472 4.8  5.5 0.884  0.1  0.3 0.240 2.1 6.4  8.5
## 20 50 35.1 20.8  8.3 17.5 0.475 3.6  4.9 0.734  0.6  1.9 0.330 3.1 6.9 10.1
## 21 67 38.6 20.8  7.3 16.2 0.453 5.1  6.0 0.858  1.0  3.1 0.310 1.8 4.4  6.2
## 22 80 36.8 20.8  7.4 16.8 0.437 4.2  5.1 0.817  1.9  4.9 0.385 0.9 4.2  5.1
## 23 59 39.7 20.7  7.0 16.9 0.414 5.0  6.0 0.826  1.7  5.2 0.338 1.2 3.9  5.1
## 24 82 36.6 20.7  7.3 16.0 0.455 4.0  4.7 0.864  2.1  5.1 0.410 0.6 2.8  3.5
## 25 79 35.7 20.6  7.1 12.4 0.572 6.4 10.7 0.594  0.0  0.0 0.000 4.3 9.6 13.8
## 26 81 37.4 20.5  6.7 14.6 0.457 5.7  6.8 0.830  1.5  3.8 0.391 0.7 5.0  5.6
## 27 73 34.9 20.1  7.3 16.6 0.439 3.2  4.0 0.793  2.3  6.4 0.364 1.4 4.9  6.2
## 28 65 38.1 19.7  6.4 15.7 0.410 4.6  5.3 0.872  2.2  6.1 0.360 0.4 2.6  3.0
## 29 77 33.6 19.7  7.4 13.4 0.548 4.9  5.7 0.866  0.0  0.0 1.000 2.6 7.2  9.9
## 30 82 35.9 19.6  6.5 14.9 0.439 5.1  6.3 0.805  1.4  3.6 0.397 0.7 3.9  4.6
## 31 74 33.6 19.6  7.3 15.8 0.463 2.7  3.0 0.880  2.3  6.2 0.366 0.5 1.9  2.4
## 32 68 36.9 19.4  6.8 14.5 0.471 4.8  5.6 0.849  1.0  3.3 0.310 0.4 2.5  2.9
## 33 75 33.7 19.3  7.4 14.8 0.504 4.5  6.4 0.692  0.0  0.0 0.000 2.7 8.0 10.7
## 34 25 35.6 19.0  7.8 17.2 0.451 3.1  3.8 0.830  0.3  1.0 0.308 0.6 3.8  4.3
## 35 79 37.3 18.9  7.2 16.0 0.453 3.3  4.4 0.767  1.1  3.1 0.351 1.4 4.2  5.5
## 36 81 37.1 18.9  7.3 12.9 0.567 4.2  5.4 0.781  0.0  0.0 0.500 3.2 6.4  9.6
## 37 82 39.8 18.8  6.6 14.0 0.473 4.6  6.4 0.724  1.0  3.2 0.307 1.1 4.6  5.7
## 38 51 31.1 18.6  5.7 12.4 0.461 6.7  8.1 0.824  0.5  1.9 0.253 1.0 4.6  5.5
## 39 82 38.0 18.5  6.9 15.6 0.438 3.0  3.4 0.879  1.8  4.6 0.384 0.7 3.1  3.8
## 40 79 37.5 18.3  6.5 13.8 0.472 3.6  4.4 0.830  1.6  3.8 0.417 0.7 3.5  4.2
## 41 67 34.0 18.3  7.0 15.6 0.447 3.3  3.9 0.848  1.0  2.8 0.368 0.7 2.4  3.1
## 42 79 36.3 18.2  6.3 13.2 0.480 3.0  3.2 0.952  2.5  6.2 0.409 0.8 2.7  3.5
## 43 81 37.1 18.1  7.4 15.3 0.484 3.2  4.1 0.781  0.1  0.3 0.250 2.9 4.6  7.5
## 44 52 31.9 18.0  6.8 15.1 0.451 3.3  4.2 0.782  1.1  3.2 0.345 1.1 3.9  5.1
## 45 81 35.0 17.8  6.5 13.9 0.467 2.6  2.8 0.912  2.3  5.2 0.436 0.6 2.9  3.4
## 46 75 30.1 17.8  6.8 11.2 0.609 4.1  6.9 0.595  0.0  0.0 0.000 2.5 5.9  8.4
## 47 79 36.2 17.7  6.1 13.8 0.439 2.8  3.4 0.836  2.8  7.0 0.397 1.2 4.6  5.7
## 48 79 35.3 17.7  5.2 12.4 0.418 5.3  5.8 0.913  2.1  5.0 0.408 0.4 2.6  3.0
## 49 57 36.7 17.5  6.1 14.6 0.417 4.8  6.1 0.781  0.5  1.7 0.283 0.5 2.5  3.0
```

```
## 50 74 29.9 17.2  6.1 13.9 0.437 3.4  4.0 0.841  1.7  5.2 0.325 1.3 2.6  3.9
##      AST STL BLK  TO  PF
## 1    7.5 2.2 1.3 3.4 2.3
## 2    7.2 1.7 1.1 3.0 1.7
## 3    4.9 1.5 0.5 2.6 2.3
## 4    2.4 0.8 0.8 1.9 2.2
## 5    2.7 1.0 1.4 2.5 3.1
## 6    2.8 1.3 0.7 3.0 1.8
## 7    2.7 1.2 0.2 2.9 2.3
## 8    1.6 0.8 1.7 1.8 2.8
## 9   11.0 2.8 0.1 3.0 2.7
## 10   3.4 1.1 0.4 3.0 3.0
## 11   2.5 0.9 1.0 2.3 2.5
## 12   5.1 1.1 0.3 1.9 1.6
## 13   1.9 1.2 0.3 1.5 2.7
## 14   6.9 0.9 0.1 2.6 1.5
## 15   2.0 0.9 1.1 2.8 3.1
## 16   5.8 1.1 0.2 2.5 2.2
## 17   6.9 1.7 0.2 3.1 2.4
## 18   2.7 1.1 0.1 1.6 1.4
## 19   2.3 0.6 0.9 2.1 2.7
## 20   2.1 0.9 0.3 2.3 2.7
## 21   4.3 1.6 0.3 3.1 2.5
## 22   4.7 1.0 0.5 2.1 2.9
## 23   6.5 1.5 0.5 3.9 2.6
## 24   3.4 0.9 0.3 2.4 2.2
## 25   1.4 1.0 2.9 3.0 3.4
## 26   3.6 1.0 0.3 2.8 2.7
## 27   1.4 1.2 0.3 2.2 3.1
## 28   4.4 0.9 0.2 2.3 1.4
## 29   1.8 0.4 1.9 3.0 3.3
## 30   2.4 0.8 0.2 2.0 3.1
## 31   3.4 1.3 0.3 1.6 1.9
## 32  10.7 1.1 0.3 3.4 2.0
## 33   3.5 0.5 1.7 2.2 2.3
## 34   3.7 1.6 0.3 2.7 2.7
## 35   1.7 1.2 0.7 2.6 2.8
## 36   3.5 0.6 1.0 1.9 2.1
## 37   5.3 1.6 0.4 2.7 1.9
## 38   1.8 0.9 0.2 2.4 3.8
## 39   3.2 1.1 0.2 2.8 2.5
## 40   3.2 1.1 0.3 2.1 2.3
## 41   4.4 0.6 0.1 2.0 2.6
## 42   2.8 0.9 0.2 1.7 2.0
## 43   1.9 1.0 1.0 1.5 2.6
## 44   1.6 1.1 0.6 1.7 2.6
## 45   4.1 0.9 0.1 2.2 2.7
## 46   1.7 0.7 1.4 2.2 3.4
## 47   2.6 1.0 0.6 2.0 2.5
## 48   6.4 1.2 0.2 2.2 2.0
## 49   5.0 1.5 0.1 2.6 1.5
```

```
## 50  4.1 1.3 0.1 1.9 2.8
```



Spatial Plot

Contour Plot