In [ ]:

```
!pip install astroML
```

In [2]:

```
import numpy as np
import matplotlib.pyplot as plt
from astroML.correlation import bootstrap_two_point_angular
```

In [3]:

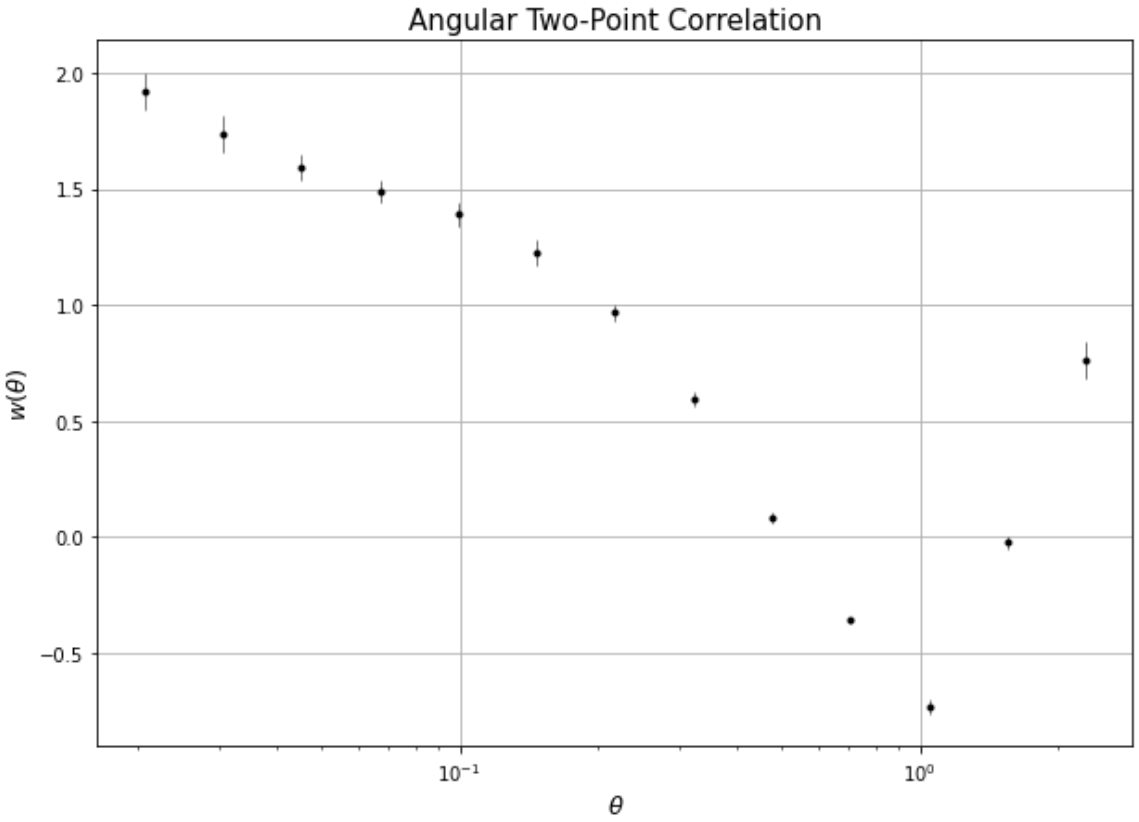
```
# extracting input data from website
data = np.loadtxt('https://www.iith.ac.in/~shantanud/BCS05hr_reduced.txt')

# filtering the data according to parameters
data = data[data[:,2] < 20]
data = data[data[:,2] > 17]
data = data[data[:,3] > 0.002]

# function for finding angular two-point correlation
def two_point_correlation(N):
    LINS = np.linspace(np.log10(1.0/60.0), np.log10(6), 16)
    bins = 10 ** LINS
    results = [bins]
    for d in [data]:
        results += bootstrap_two_point_angular(d[:,0], d[:,1], bins=bins, method='landy
-szalay', Nbootstraps=N)
    return results

# applying function according to the question asked
(bins, b_corr, b_corr_err, b_bootstraps) = two_point_correlation(10)
# finding bin centers
bin_centers = 0.5 * (bins[1:] + bins[:-1])

# plotting the values from angular two-point correlation
plt.figure(figsize=(10,7))
plt.xscale('log')
plt.yscale('linear')
plt.errorbar(bin_centers, b_corr, b_corr_err, fmt='.k', ecolor='gray', lw=1)
plt.xlabel(r'$\theta$', size = 13)
plt.ylabel(r'$w(\theta)$', size = 13)
plt.title('Angular Two-Point Correlation', size = 15)
plt.grid()
plt.show()
```


Angular Two-Point Correlation
2.0
1.5
1.0
0.5
0.0
−0.5
w(θ)
10⁻¹
10⁰
θ