

# rand\_walk\_omp\_diagrams

April 1, 2018

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

%matplotlib inline

N = 10000, P =

In [2]: P = np.array([1, 2, 4, 8, 16])
T = np.array([0.56536, 0.39799, 0.31338, 0.31746, 0.30502])
S = np.full(T.size, T[0]) / T
E = S / P

In [7]: plt.figure(figsize=(12, 7))
plt.xlabel('P')
plt.title('N = 10000')
plt.grid(ls=':')

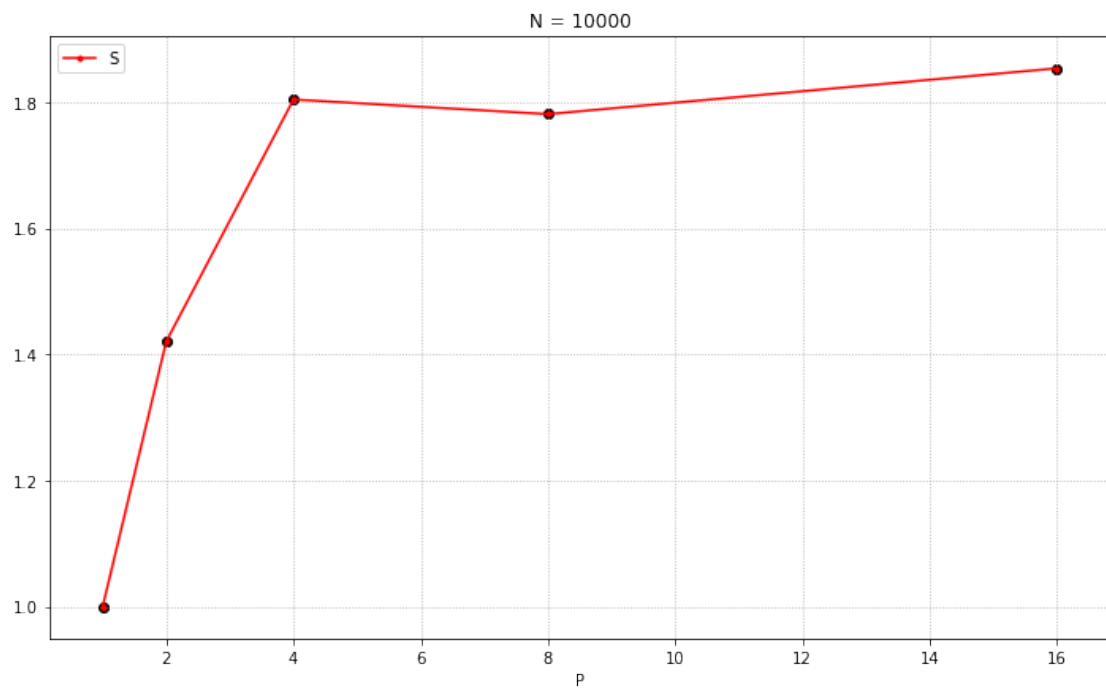
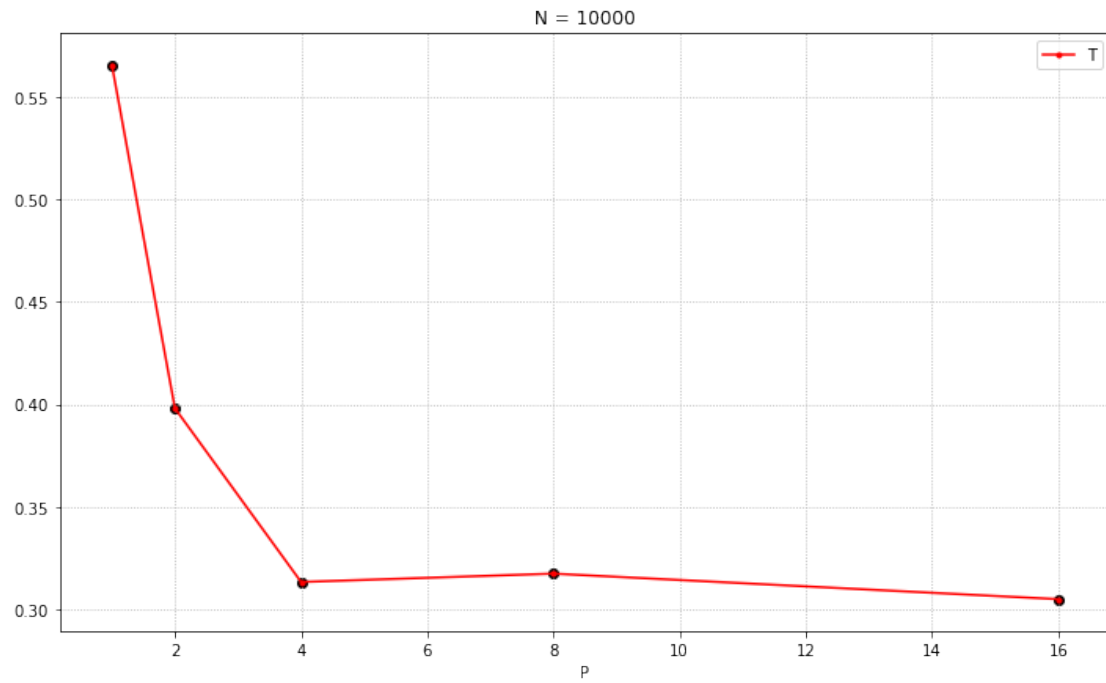
plt.plot(P, T, '.-', label = 'T', c='red')
plt.scatter(P, T, c='black')
plt.legend()
plt.show()

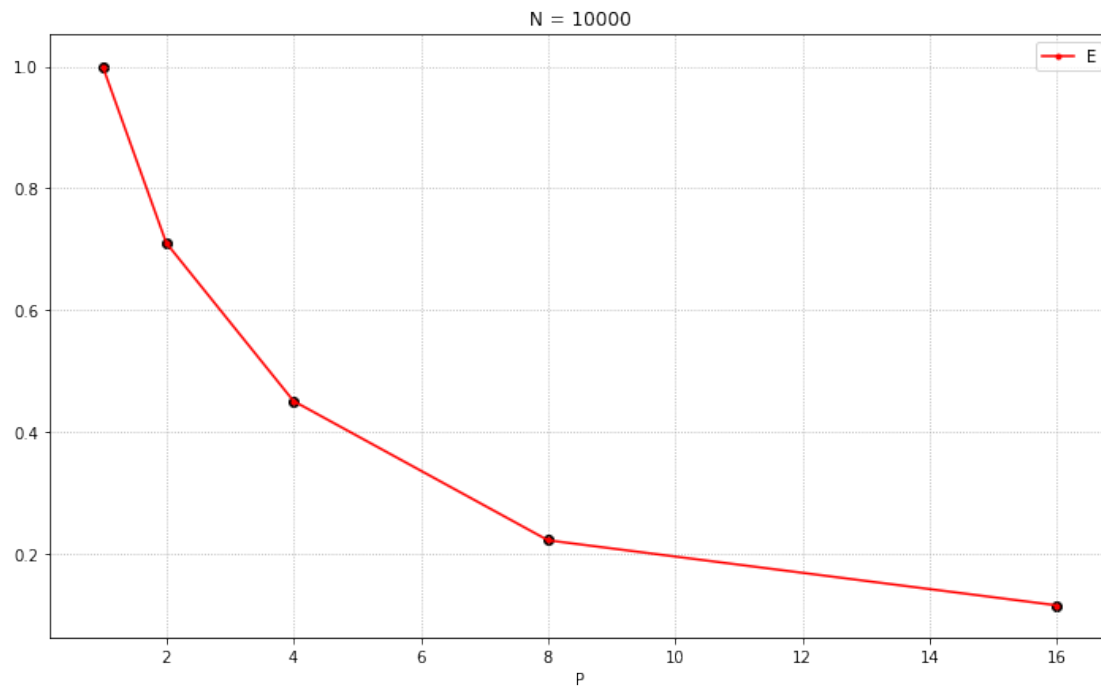
plt.figure(figsize=(12, 7))
plt.xlabel('P')
plt.title('N = 10000')
plt.grid(ls=':')

plt.plot(P, S, '.-', label = 'S', c='red')
plt.scatter(P, S, c='black')
plt.legend()
plt.show()

plt.figure(figsize=(12, 7))
plt.xlabel('P')
plt.title('N = 10000')
plt.grid(ls=':')
```

```
plt.plot(P, E, '-.', label = 'E', c='red')
plt.scatter(P, E, c='black')
plt.legend()
plt.show()
```





$P = \text{const}(4)$

```
In [8]: N = np.arange(10000, 110000, 10000)
        T_4 = np.array([0.30356, 0.62909, 0.99744, 1.28837, 1.60679, 1.90233, 2.22295, 2.60710,
        T_1 = np.array([0.55228, 1.17195, 1.72172, 2.34601, 2.82244, 3.42653, 3.92628, 4.56512,
        S = T_1 / T_4
        E = S / 4
```

```
In [9]: plt.figure(figsize=(12, 7))
        plt.xlabel('N')
        plt.title('P = 4')
        plt.grid(ls=':')

        plt.plot(N, T_4, '.-', label = 'T', c='red')
        plt.scatter(N, T_4, c='black')
        plt.legend()
        plt.show()
```

```
plt.figure(figsize=(12, 7))
plt.xlabel('N')
plt.title('P = 4')
```

```
plt.grid(ls=':')

plt.plot(N, S, '.-', label = 'S', c='red')
plt.scatter(N, S, c='black')
plt.legend()
plt.show()
```

```
plt.figure(figsize=(12, 7))
plt.xlabel('N')
plt.title('P = 4')
plt.grid(ls=':')
```

```
plt.plot(N, E, '.-', label = 'E', c='red')
plt.scatter(N, E, c='black')
plt.legend()
plt.show()
```

