

0.1 Simulation error of Wang-Landau results for AJP Ising setup

We compare our results to those of Landau et. al. in their [AJP article](#).

```
1 import numpy as np
2 import os, h5py, hickle
3 import matplotlib.pyplot as plt

1 import sys
2 if 'src' not in sys.path: sys.path.append('src')
3 import wanglandau as wl

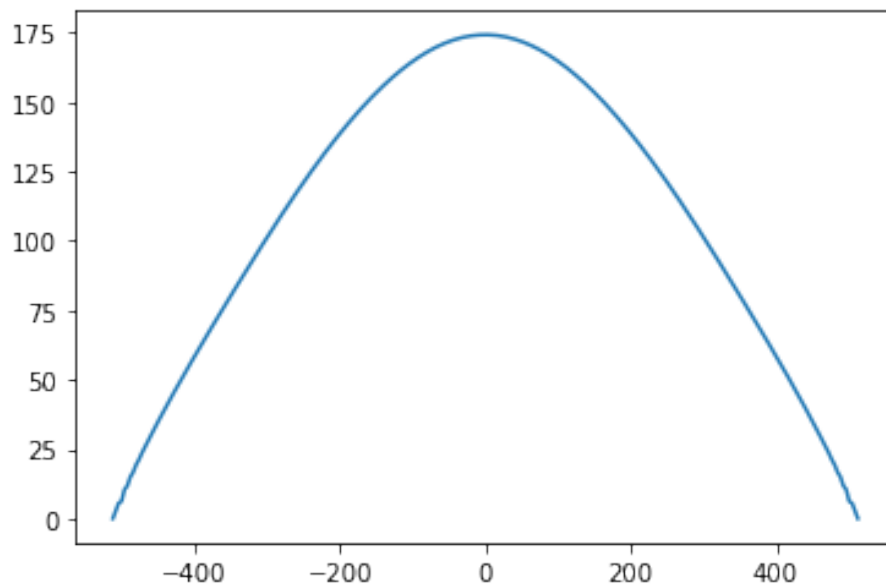
1 paths = [os.path.join('data/ising-ajp', f) for f in os.listdir('data/ising-ajp')]

1 with h5py.File(paths[0], 'r') as f:
2     result = hickle.load(f)
3     Es = result['results']['Es'][:-1]

1 def file_lngs(path):
2     with h5py.File(path, 'r') as f:
3         result = hickle.load(f)
4         S = result['results']['S']
5         return S - min(S)

1 mean_lng = np.zeros(len(Es))
2 std_lng = np.zeros(len(Es))
3 for lng in map(file_lngs, paths):
4     mean_lng += lng
5 mean_lng /= len(paths)
6 for lng in map(file_lngs, paths):
7     std_lng += (mean_lng - lng)**2
8 std_lng = np.sqrt(std_lng / (len(paths) - 1))

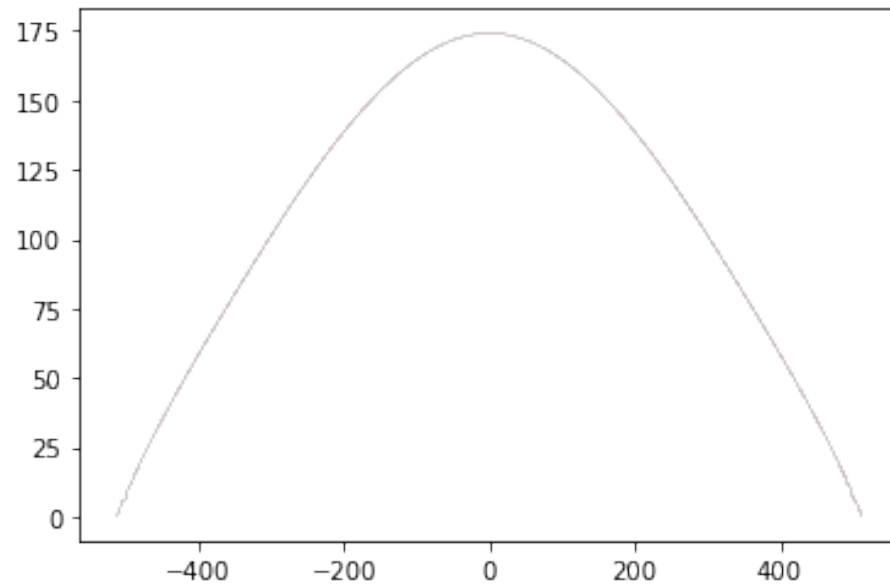
1 plt.plot(Es, mean_lng);
```



```

1 for lng in map(file_lngs, paths):
2     plt.plot(Es, lng, alpha=0.05, linewidth=0.1)

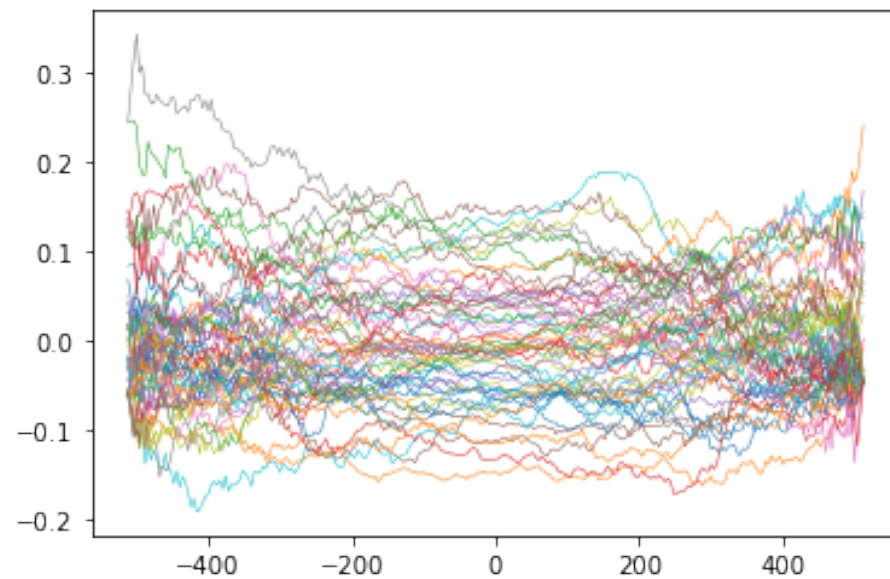
```



```

1 for lng in map(file_lngs, paths):
2     plt.plot(Es, lng - mean_lng, alpha=1, linewidth=0.5)

```



```

1 plt.plot(Es, std_lng);

```

