Grando_ABC_all_param

February 24, 2021

1 Grando ABC - Estimating all paramters

Calculations here were made using the same variables as used by grando.

• 1 U ([5, 15]) , 2 U ([16, 25]) and 3 U ([26, 35]) ; • 1 U ([0.03, 0.07]) , 2 U ([0.008, 0.02]) and 3 U ([0.001, 0.007]) ; • 1 U ([0.8, 1.4]) , 2 U ([0.3, 0.7]) and 3 U ([0.07, 0.2]) .

The data includes 100 iterations, again as per Grando.

Computation took 18.8768 seconds.

The graphs below correspond to the ones found in Grando's paper pages 75 and 76. As one may notice the results are extremely close to those found in the original paper.

[1]:
```
import numpy as np
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
%matplotlib inline
```

[2]:
```
headers =['lambda1', 'lambda2', 'lambda3', 'xi_1', 'xi_2', 'xi_3', 'tau_1',␣
↪'tau_2', 'tau_3', 'distSit', 'distSitAss']
```

[3]:
```
data = pd.read_csv('avg.csv', names = headers)
```

[4]:
```
data.head()
```

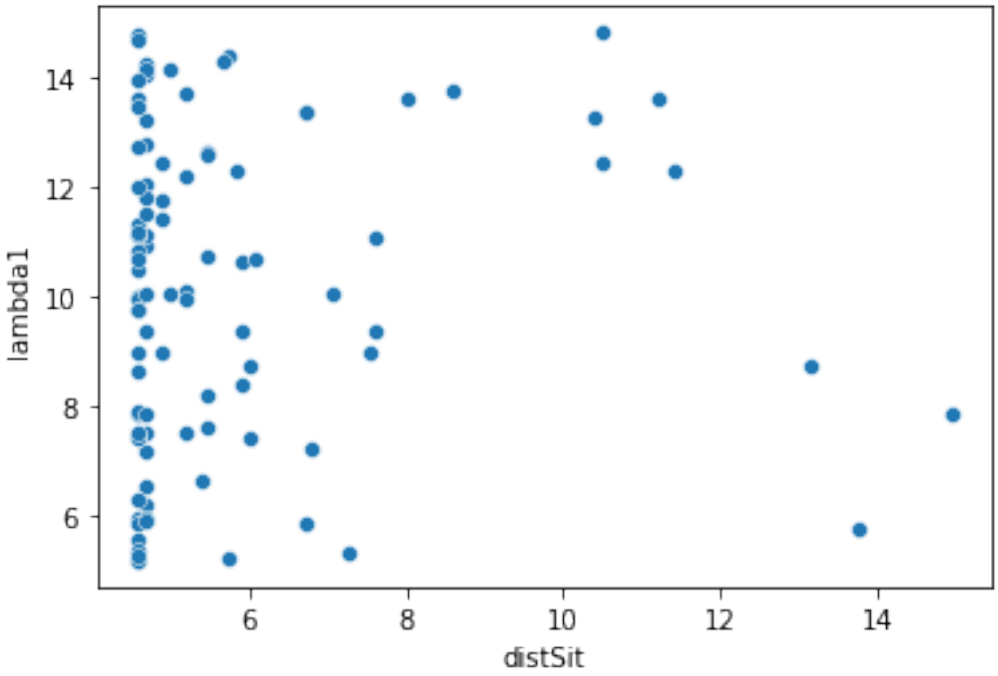
[4]:

	lambda1	lambda2	lambda3	xi_1	xi_2	xi_3	tau_1	tau_2	tau_3	distSit	distSitAss
0	12.61630	20.2712	29.8782	0.058566	0.013974	0.001704	1.105170	0.557993	0.170970	5.47723	1122.68
1	7.17869	16.2814	30.6060	0.065246	0.015663	0.003045	1.200170	0.315613	0.191866	4.69042	1069.19
2	10.74240	20.9422	34.9502	0.053176	0.017495	0.004078	1.367360	0.522839	0.098888	5.47723	1118.38
3	8.96069	23.1661	27.8539	0.036999	0.008294	0.004340	0.873247	0.435430	0.166368	4.58258	1049.88
4	5.18202	16.6533	32.6853	0.058094	0.012155	0.004524	0.964010	0.431054	0.165823	4.58258	1053.87

[19]:
```
# Lambda1 vs distance

sns.scatterplot(x = data['distSit'],y = data['lambda1'])
```

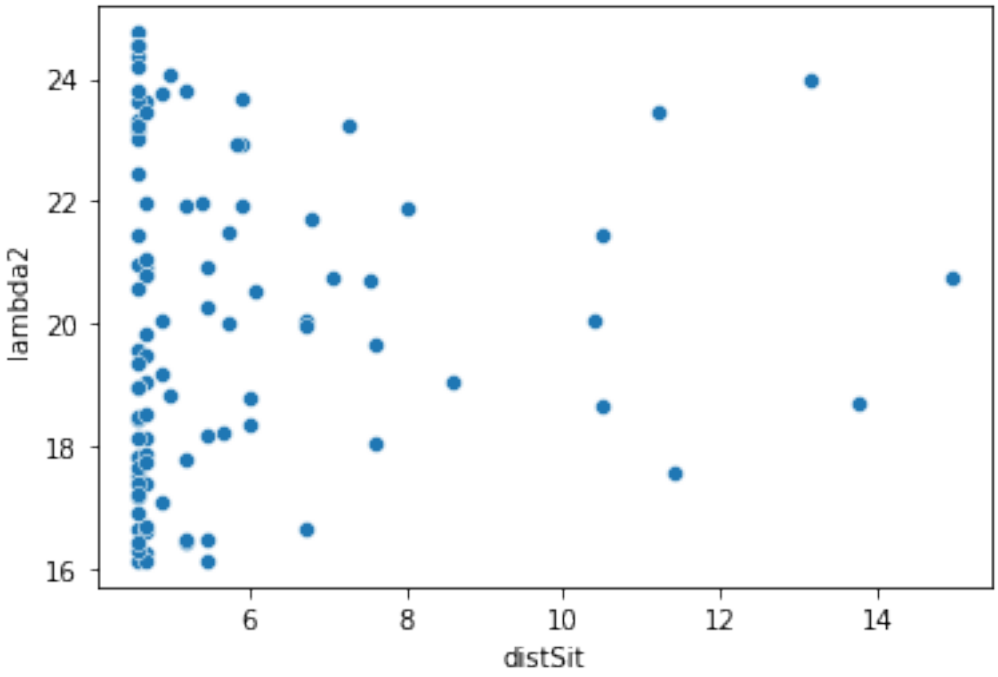
[19]: <AxesSubplot:xlabel='distSit', ylabel='lambda1'>



[20]:
```
# Lambda2 vs distance

sns.scatterplot(x = data['distSit'],y = data['lambda2'])
```

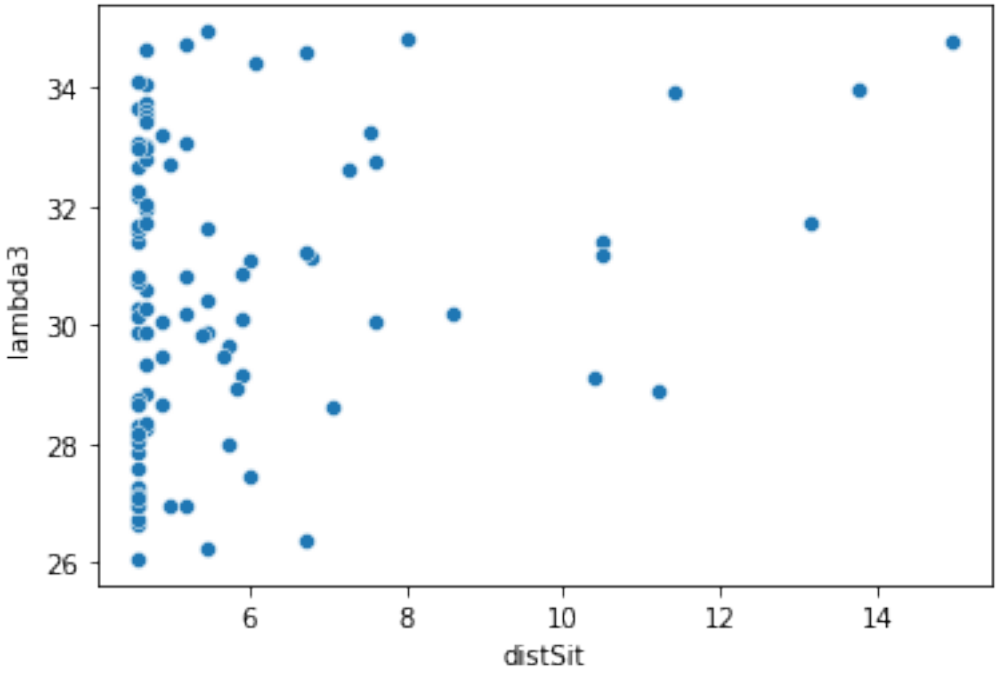
[20]: <AxesSubplot:xlabel='distSit', ylabel='lambda2'>



[22]:
```
# Lambda3 vs distance

sns.scatterplot(x = data['distSit'], y = data['lambda3'])
```

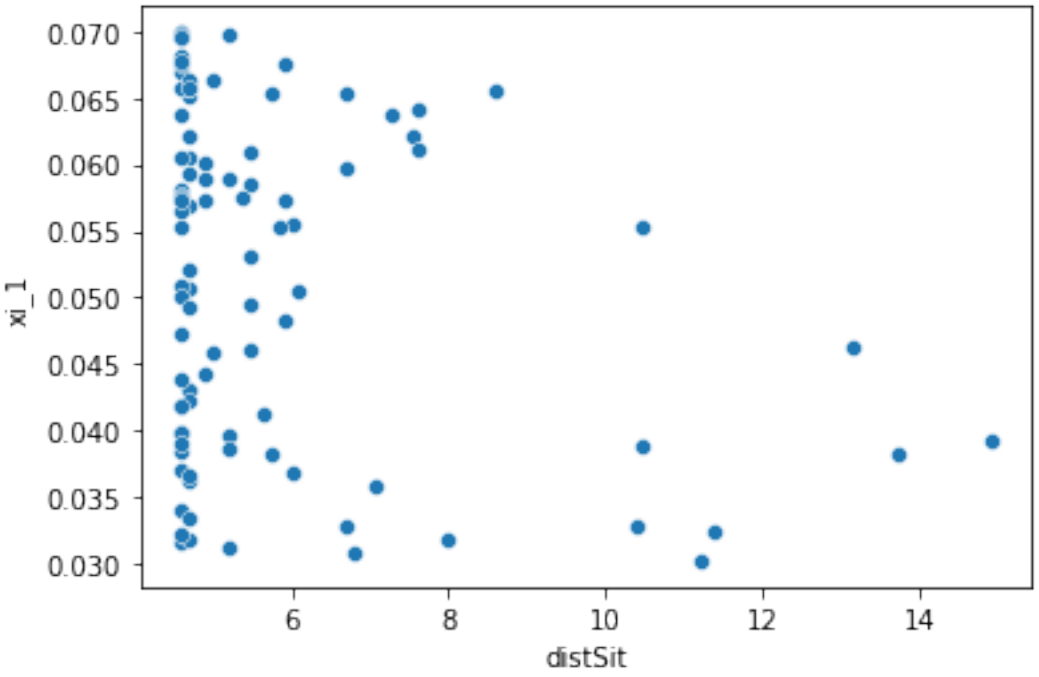
[22]: <AxesSubplot:xlabel='distSit', ylabel='lambda3'>



[23]:
```
# xi_1 vs distance

sns.scatterplot(x = data['distSit'],y = data['xi_1'])
```

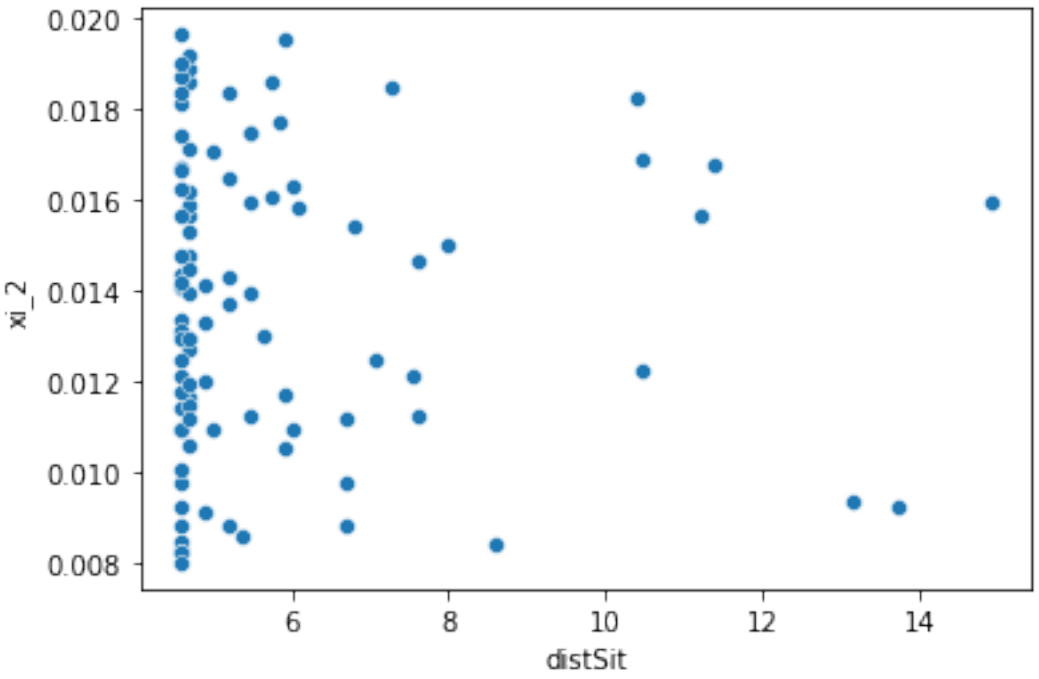
[23]: <AxesSubplot:xlabel='distSit', ylabel='xi_1'>



[24]:
```
# xi_2 vs distance

sns.scatterplot(x = data['distSit'],y = data['xi_2'])
```

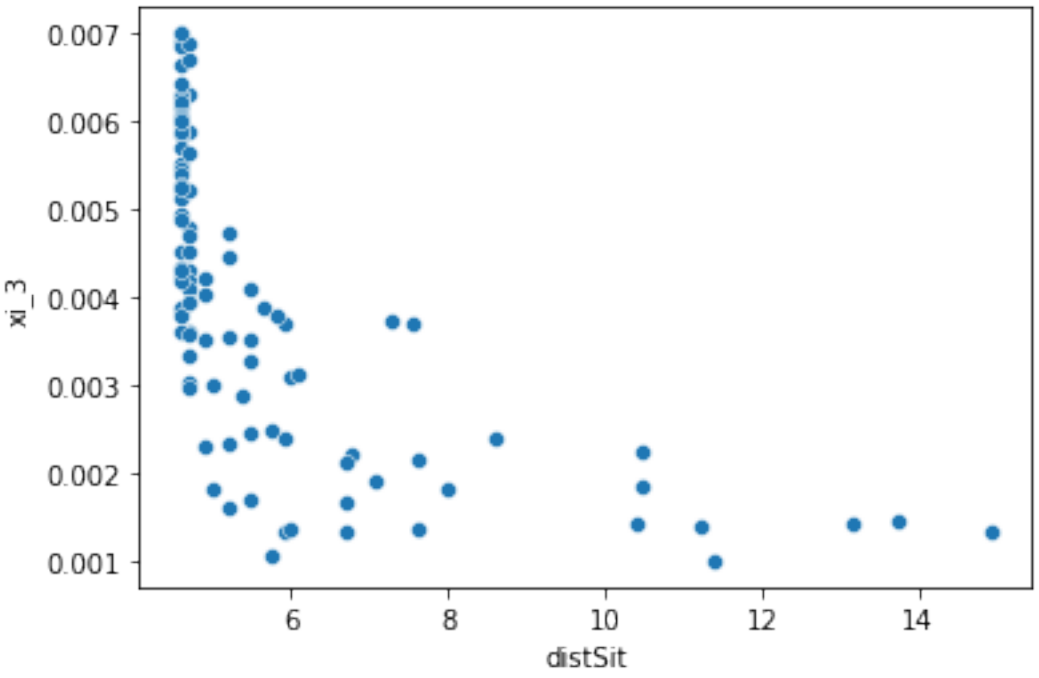
[24]: <AxesSubplot:xlabel='distSit', ylabel='xi_2'>



[25]:
```
# xi_3 vs distance

sns.scatterplot(x = data['distSit'], y = data['xi_3'])
```

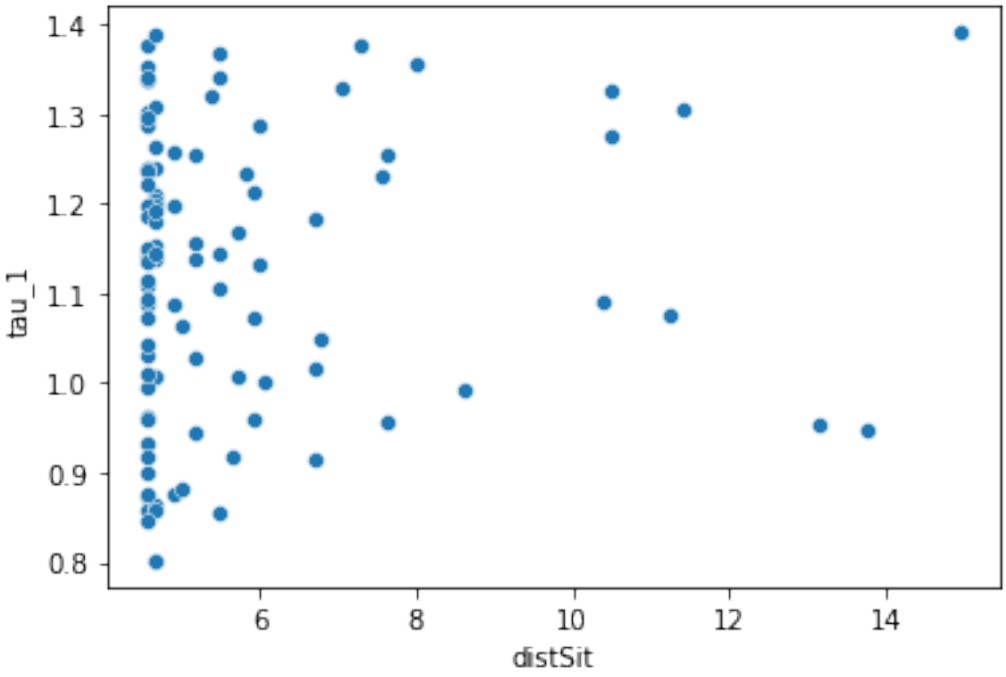
[25]: <AxesSubplot:xlabel='distSit', ylabel='xi_3'>



[27]:
```
# tau_1 vs distance

sns.scatterplot(x = data['distSit'], y = data['tau_1'])
```

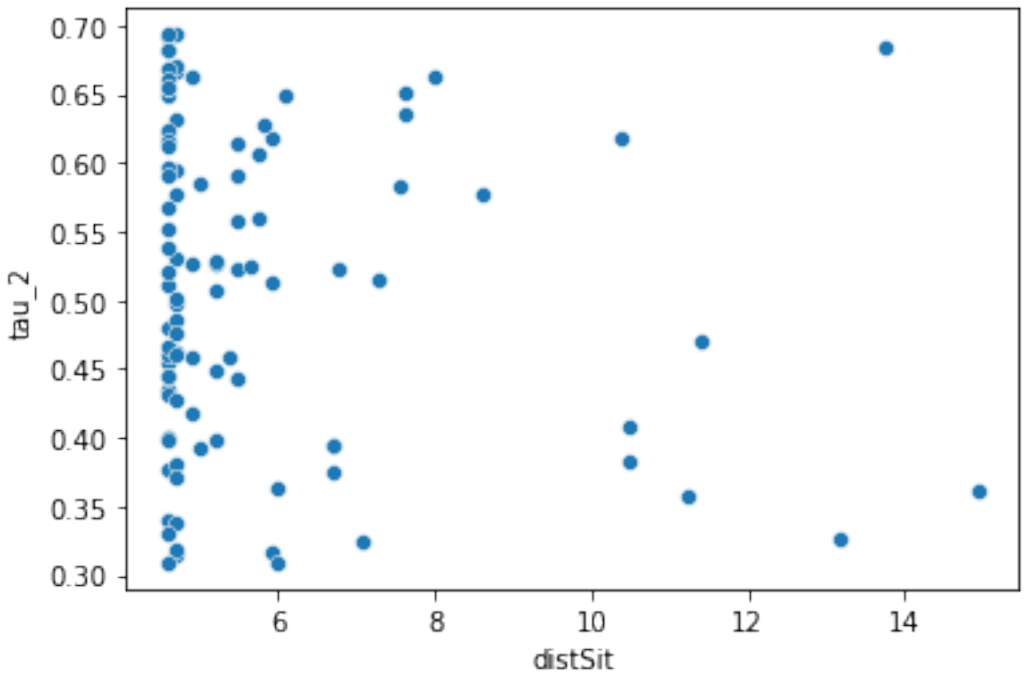
[27]: <AxesSubplot:xlabel='distSit', ylabel='tau_1'>



[29]:
```
# tau_2vs distance

sns.scatterplot(x = data['distSit'], y = data['tau_2'])
```

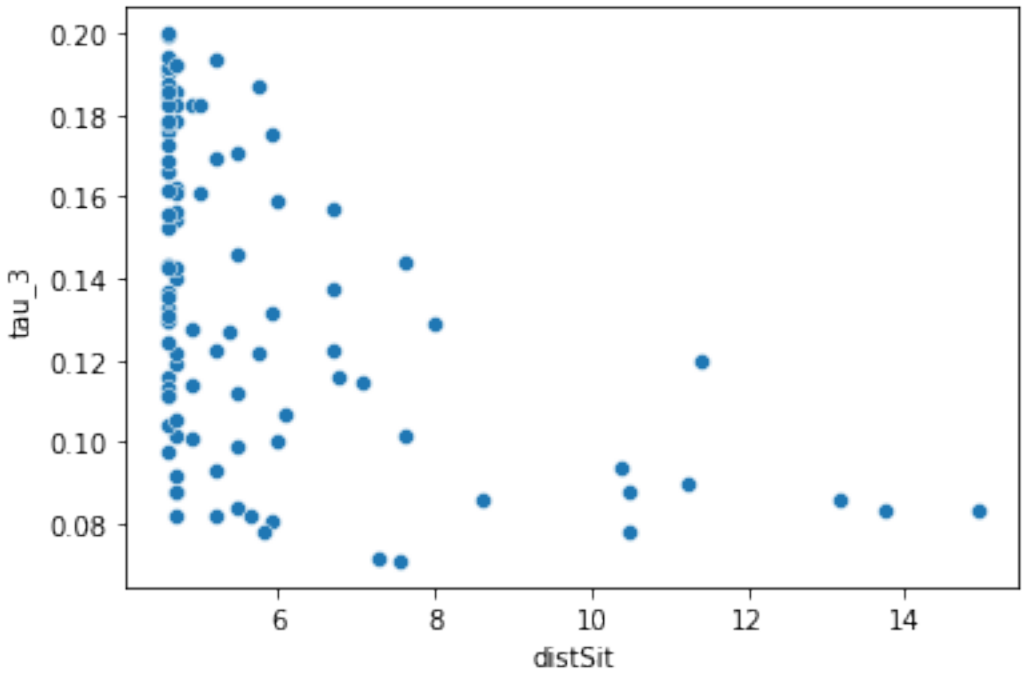
[29]: <AxesSubplot:xlabel='distSit', ylabel='tau_2'>



[30]:
```
# tau_3 vs distance

sns.scatterplot(x = data['distSit'], y = data['tau_3'])
```

[30]: <AxesSubplot:xlabel='distSit', ylabel='tau_3'>



[ ]: