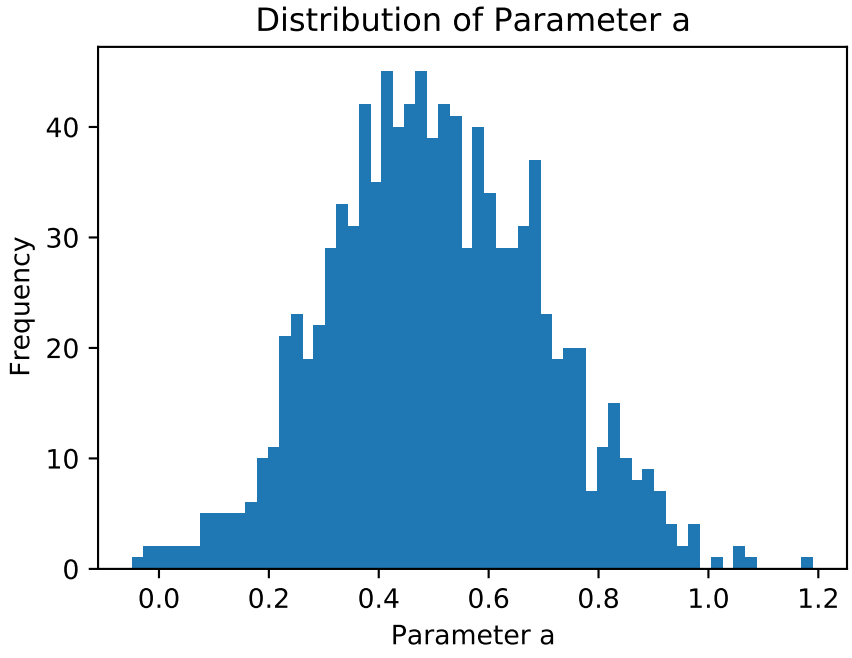
True values: a=0.5, b=1.3, c=0.5

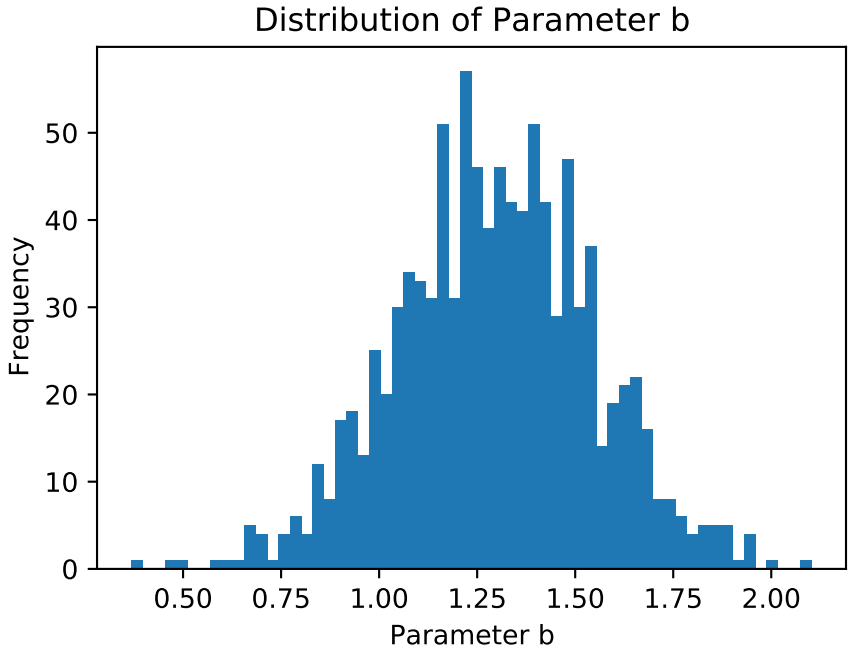
Fitted 'a': mean = 0.5051, std = 0.1937
Fitted 'b': mean = 1.2948, std = 0.2513
Fitted 'c': mean = 0.5016, std = 0.0777
Degrees of Freedom (ndf): 9

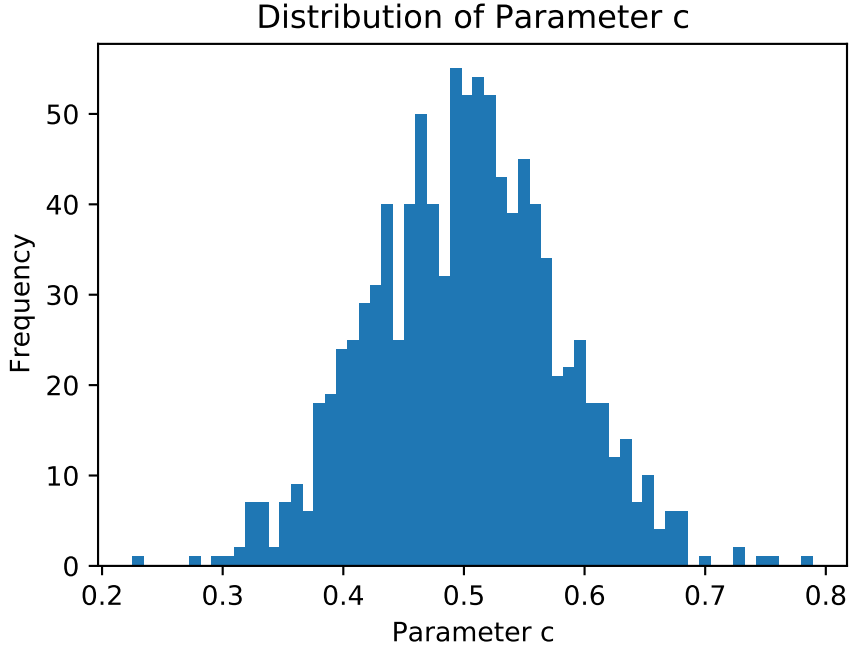
Chi^2:
- Mean: 8.9539
- Std Dev: 4.2168
- Expected Mean (ndf): 9
- Expected Std Dev (sqrt(2*ndf)): 4.2426

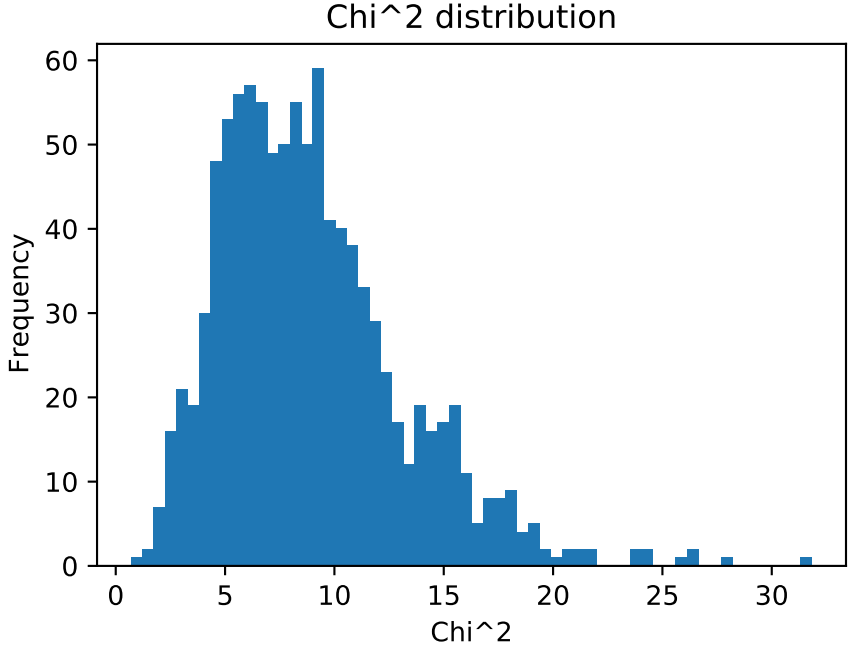
Reduced Chi^2:
- Mean: 0.9949
- Std Dev: 0.4685
- Expected Mean: 1.0

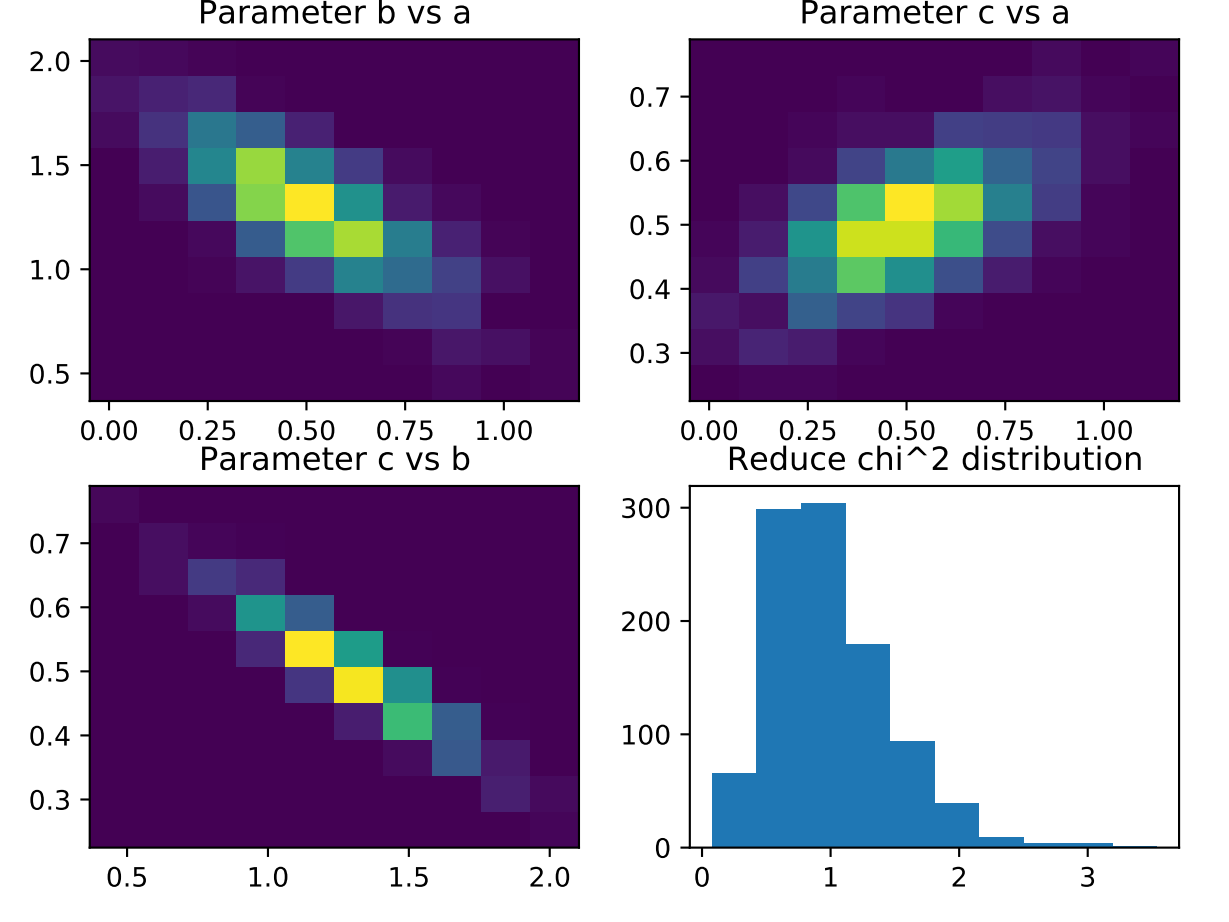
Note:
I observed that increasing the number of points decreases the uncertainty of the parameters,
while decreasing it increases the uncertainty.


Distribution of Parameter a
Frequency
Parameter a
0
10
20
30
40
0.0
0.2
0.4
0.6
0.8
1.0
1.2


Distribution of Parameter b
Frequency
Parameter b
0
10
20
30
40
50
0.50
0.75
1.00
1.25
1.50
1.75
2.00


Distribution of Parameter c
Frequency
Parameter c
0
10
20
30
40
50
0.2
0.3
0.4
0.5
0.6
0.7
0.8


Chi^2 distribution
Frequency
Chi^2
0
10
20
30
40
50
60
0
5
10
15
20
25
30


Parameter b vs a
Parameter c vs a
Parameter c vs b
Reduce chi^2 distribution
2.0
1.5
1.0
0.5
0.7
0.6
0.5
0.4
0.3
0.00
0.25
0.50
0.75
1.00
300
200
100
0
1
2
3