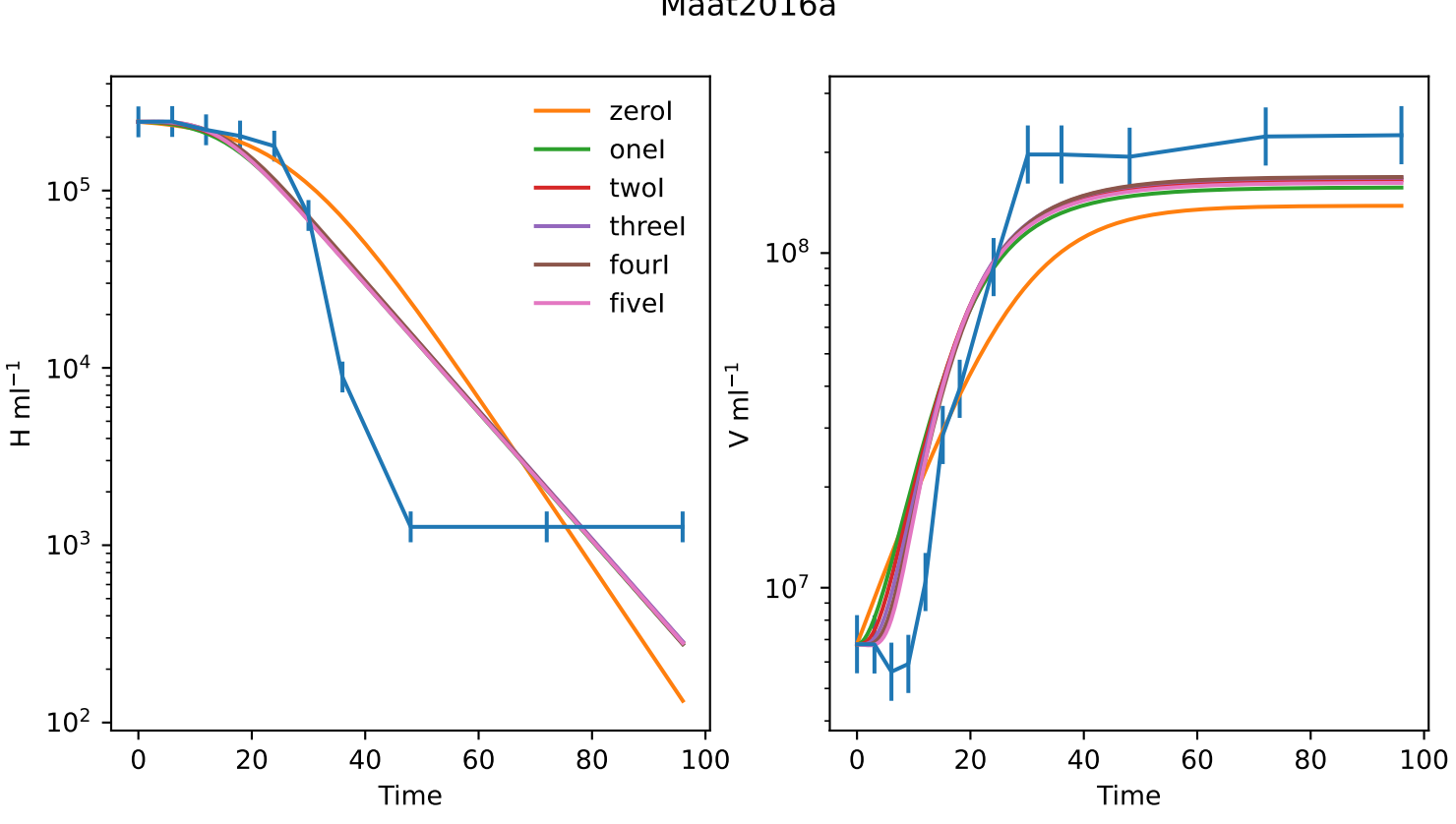
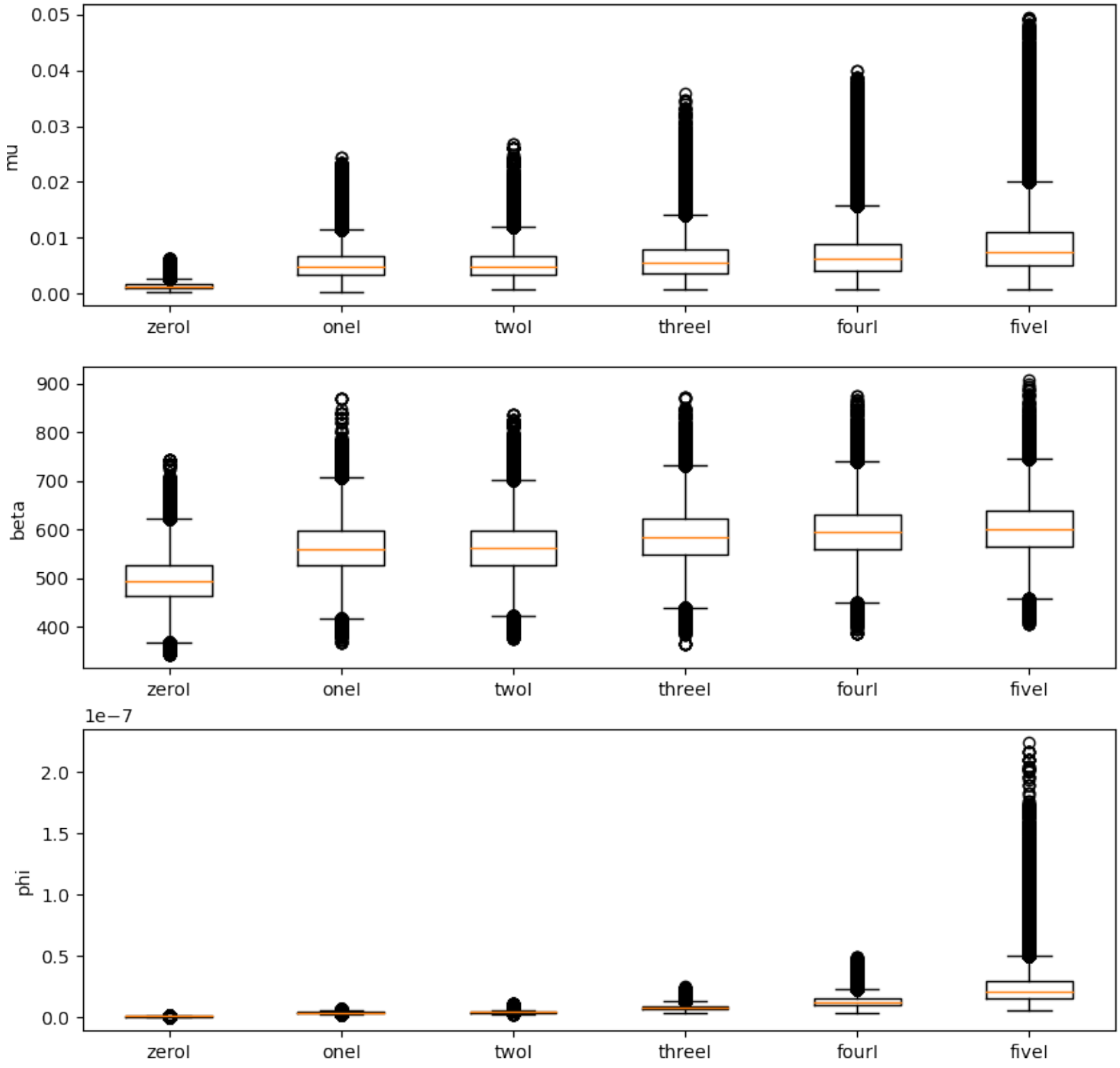
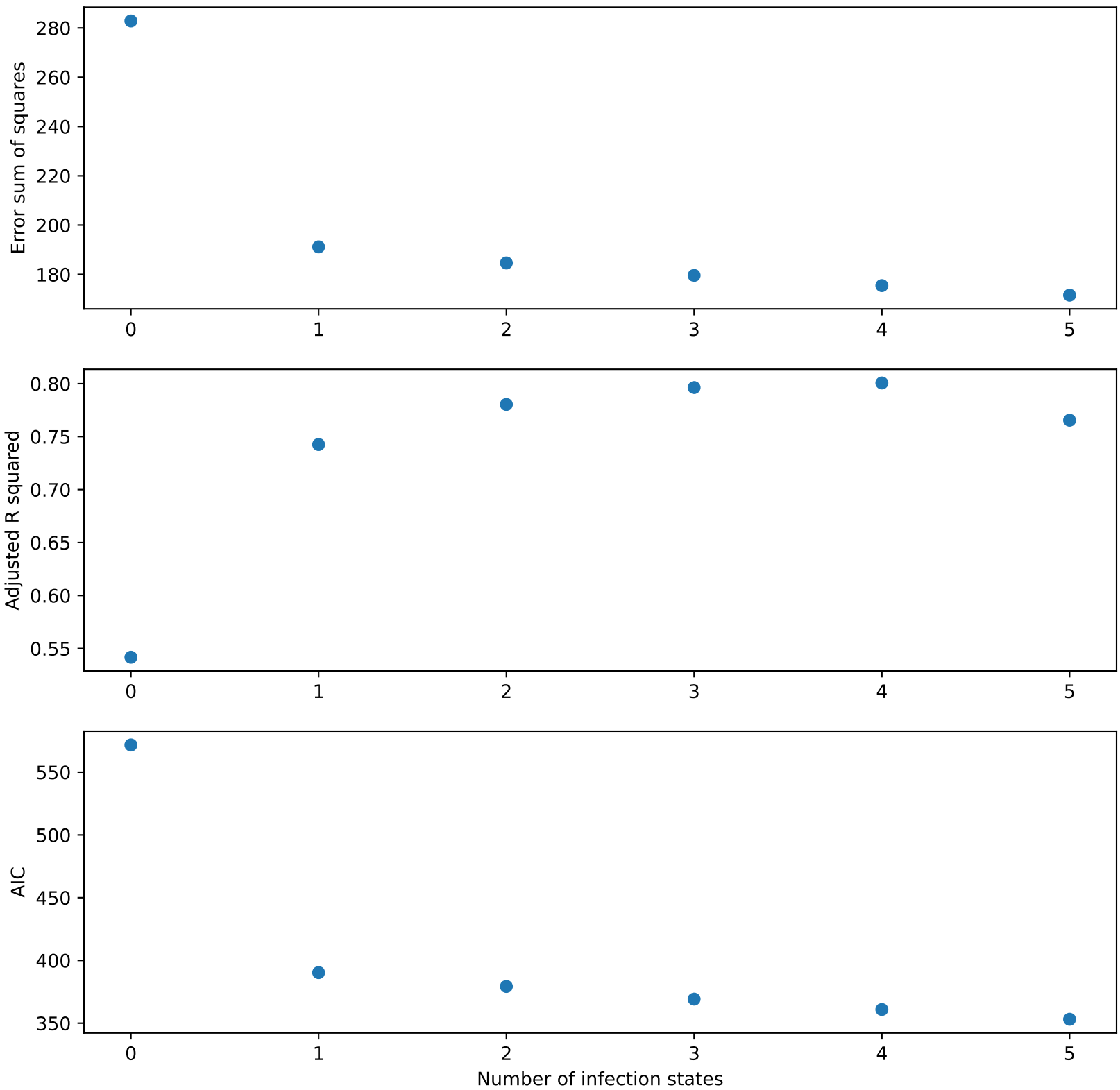
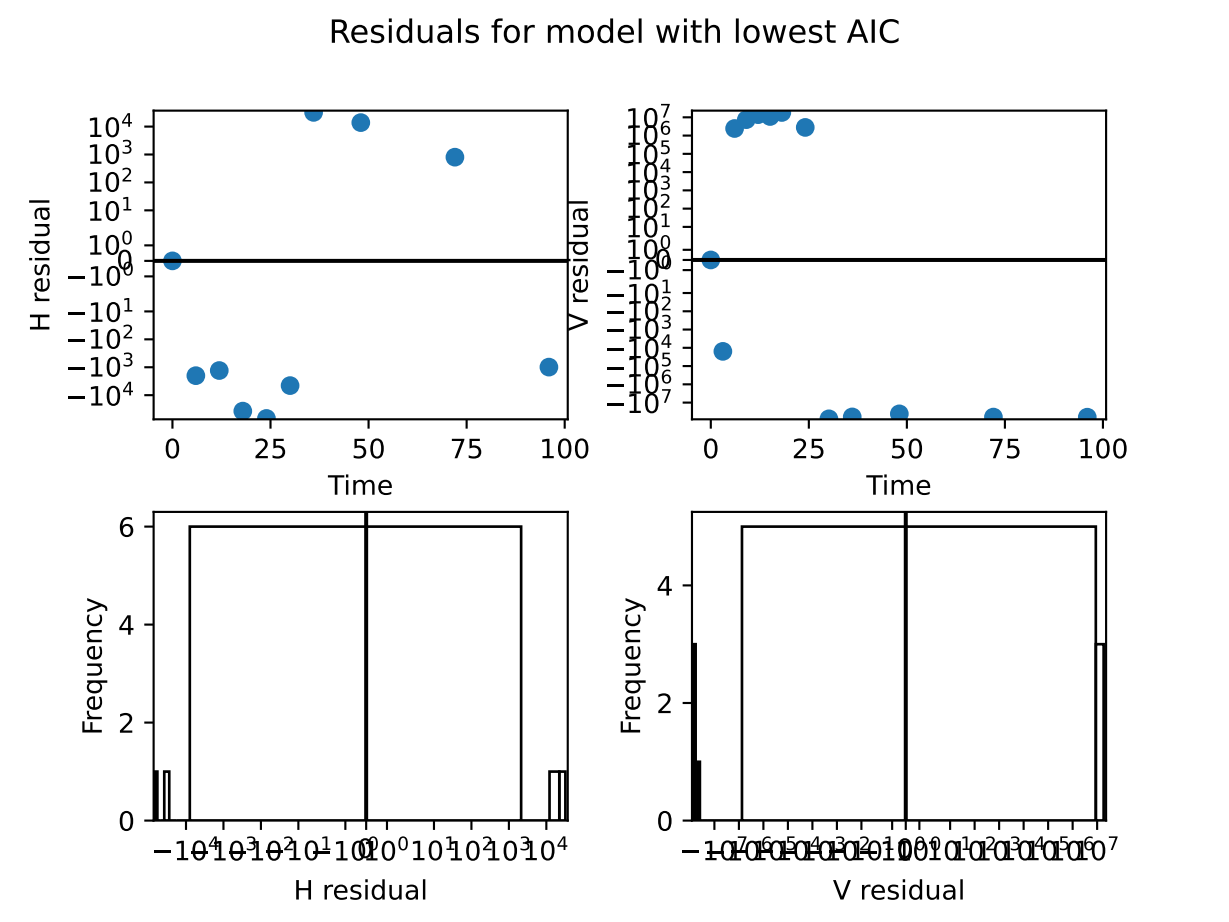

Maat2016a
zeroI
oneI
twoI
threeI
fourI
fiveI
H ml$^{-1}$
V ml$^{-1}$
Time
Time
$10^5$
$10^4$
$10^3$
$10^2$
$10^8$
$10^7$
0
20
40
60
80
100

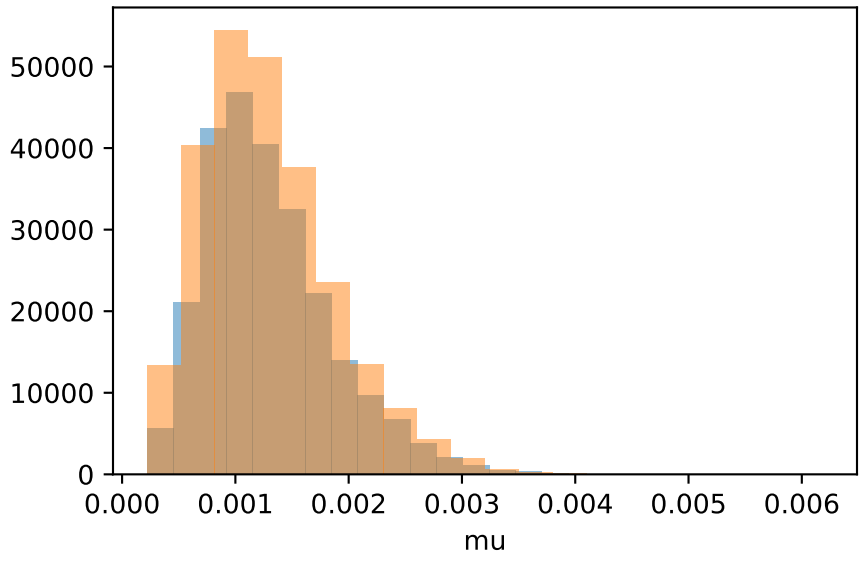
Maat2016a

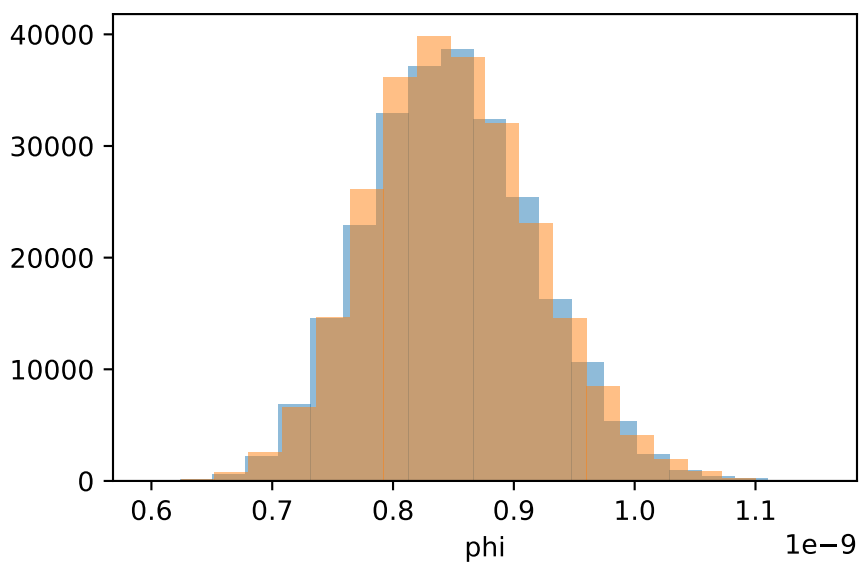

mu
0.05
0.04
0.03
0.02
0.01
0.00
zeroI
oneI
twoI
threeI
fourI
fiveI
beta
900
800
700
600
500
400
zeroI
oneI
twoI
threeI
fourI
fiveI
1e−7
phi
2.0
1.5
1.0
0.5
0.0
zeroI
oneI
twoI
threeI
fourI
fiveI

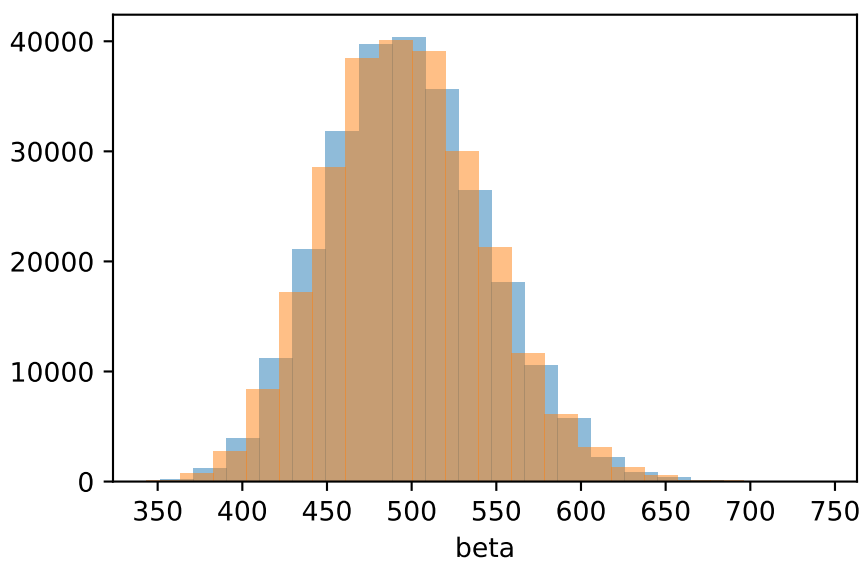

Maat2016a
Error sum of squares
280
260
240
220
200
180
0
1
2
3
4
5
Adjusted R squared
0.80
0.75
0.70
0.65
0.60
0.55
0
1
2
3
4
5
AIC
550
500
450
400
350
0
1
2
3
4
5
Number of infection states

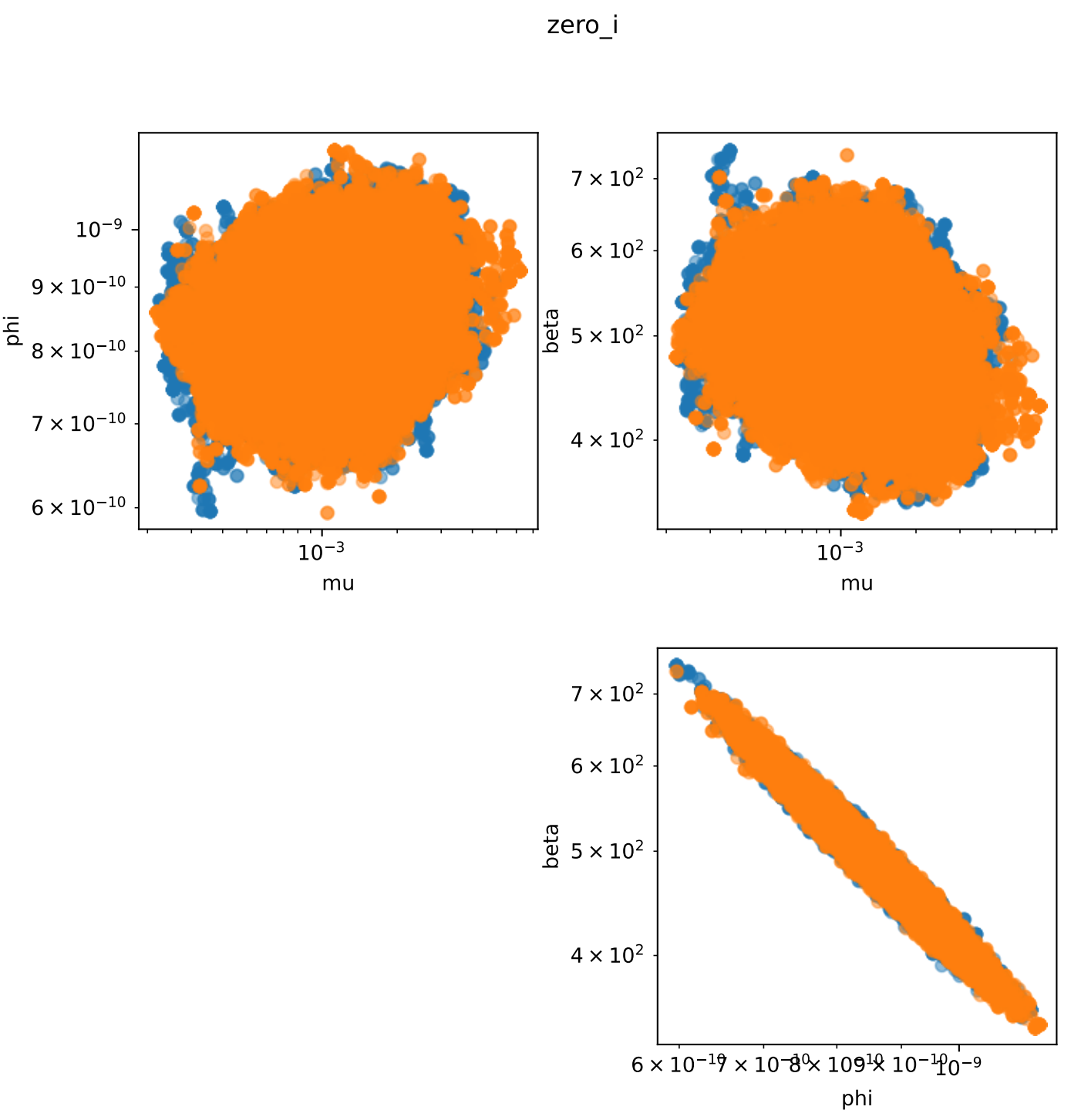

Residuals for model with lowest AIC
H residual
Time
V residual
Time
Frequency
H residual
Frequency
V residual

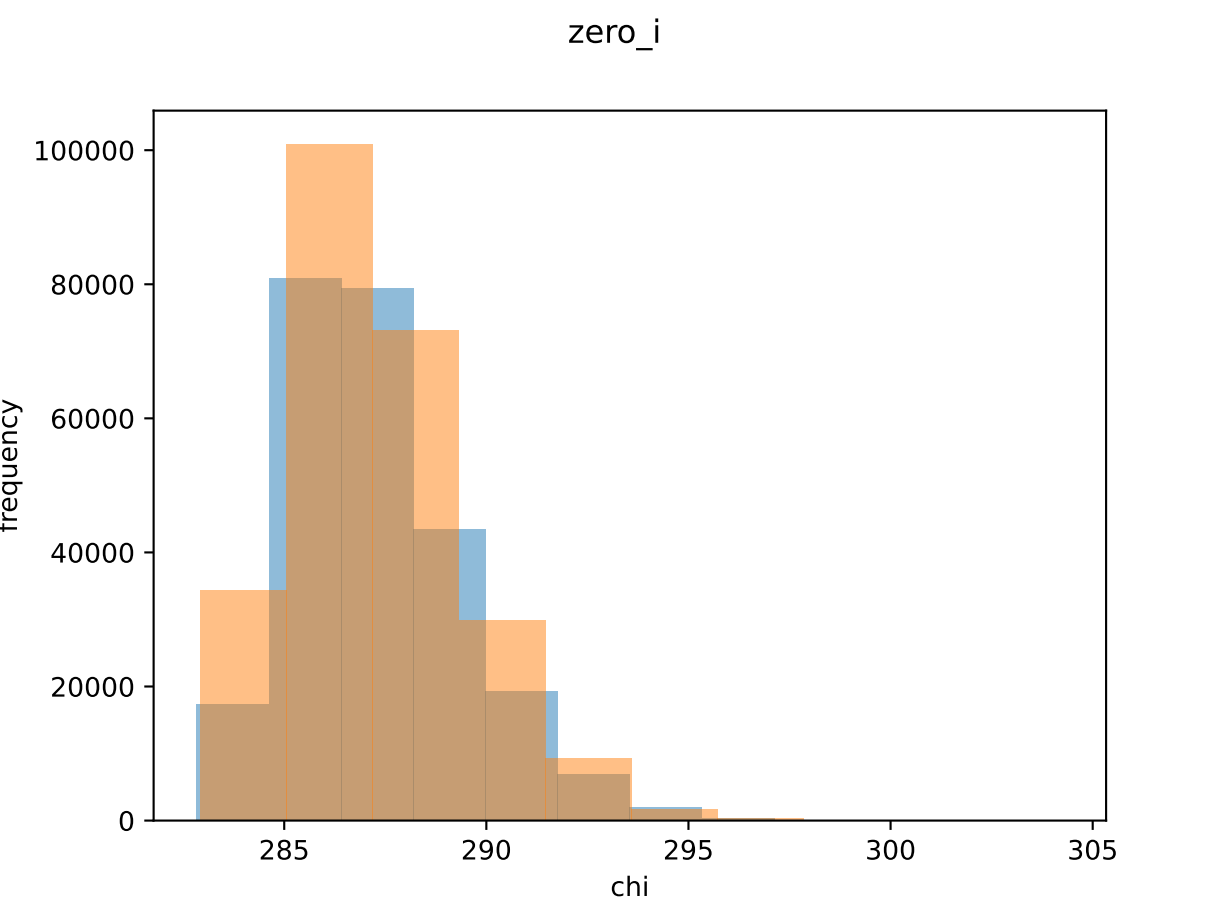
zero_i

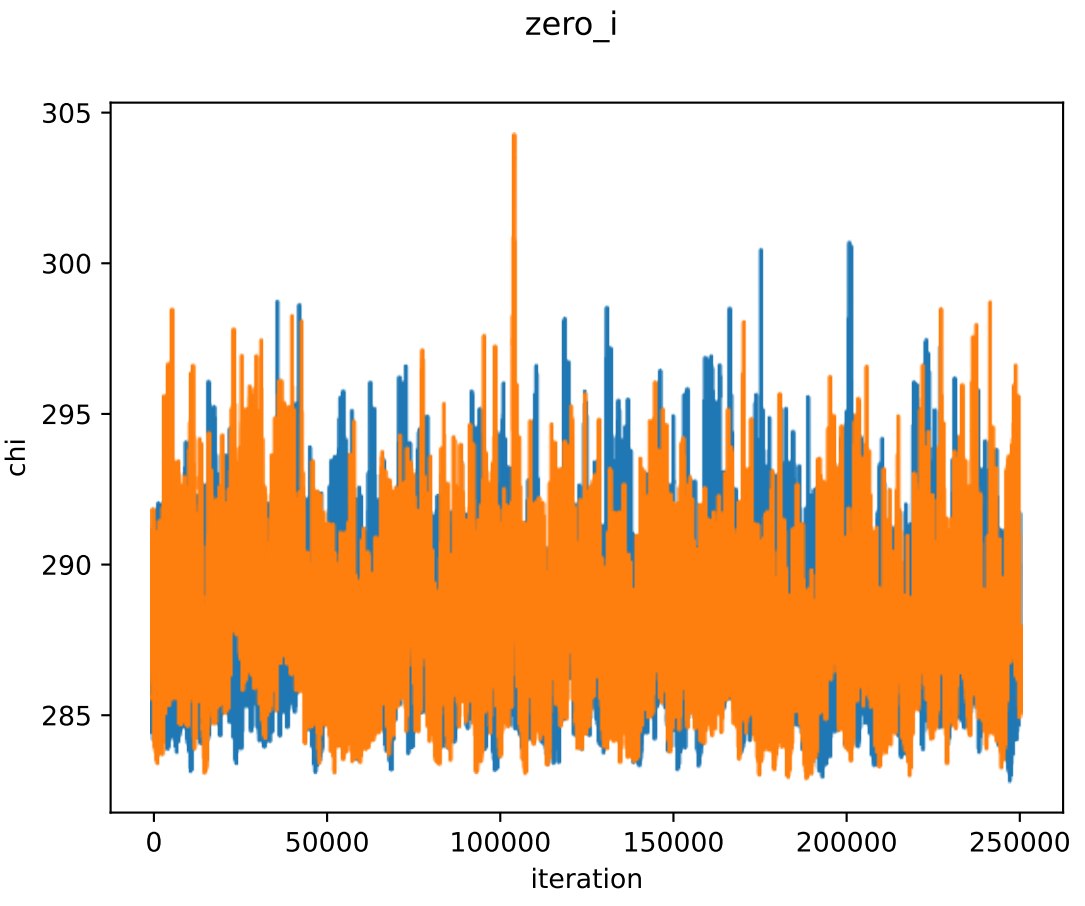

50000
40000
30000
20000
10000
0
0.000
0.001
0.002
0.003
0.004
0.005
0.006
mu


40000
30000
20000
10000
0
0.6
0.7
0.8
0.9
1.0
1.1
phi
1e−9

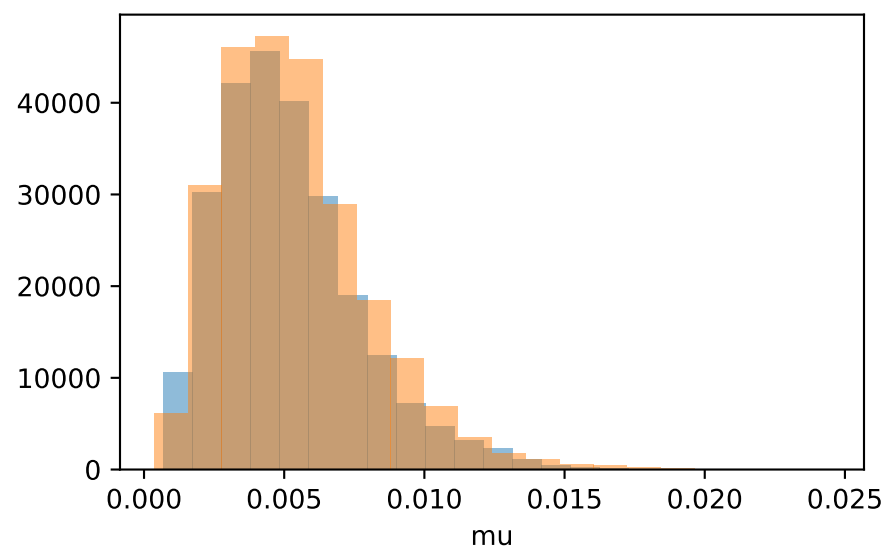

40000
30000
20000
10000
0
350
400
450
500
550
600
650
700
750
beta

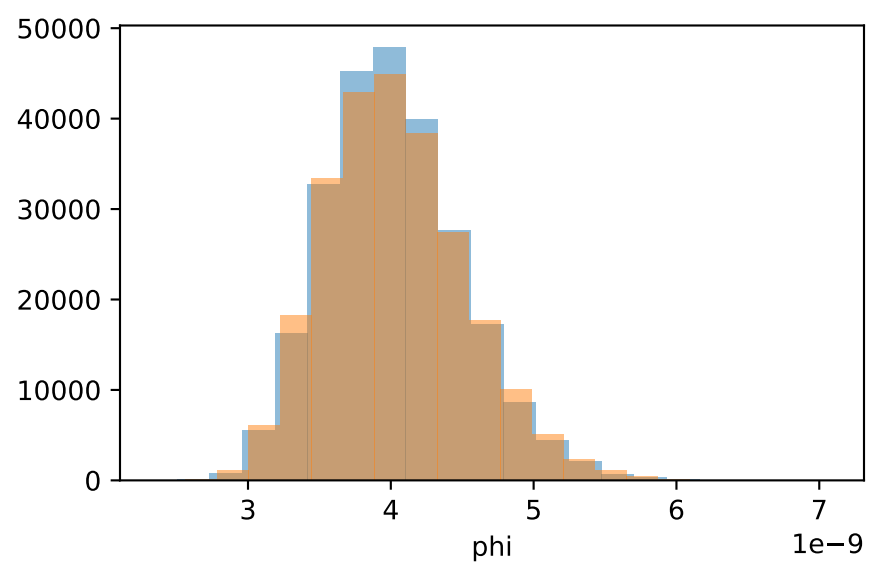

zero_i
phi
mu
beta
mu
beta
phi

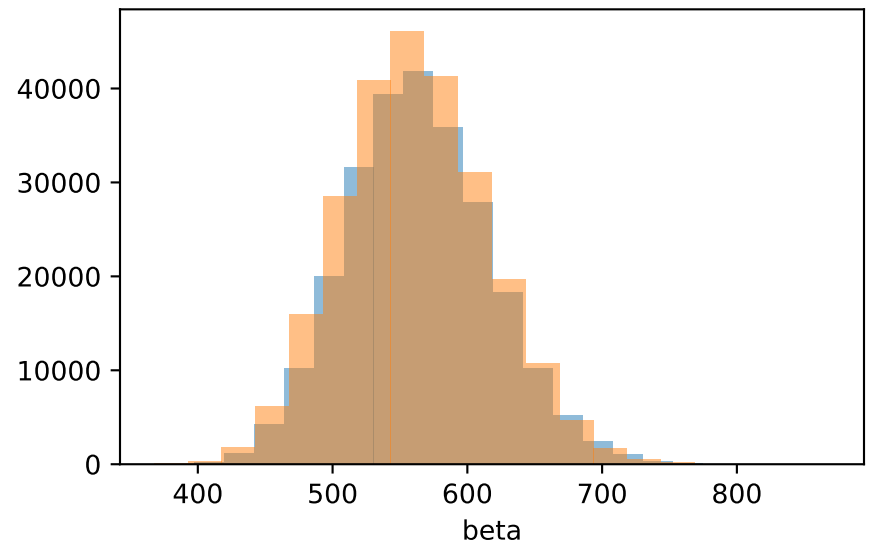

zero_i
100000
80000
60000
40000
20000
0
frequency
285
290
295
300
305
chi

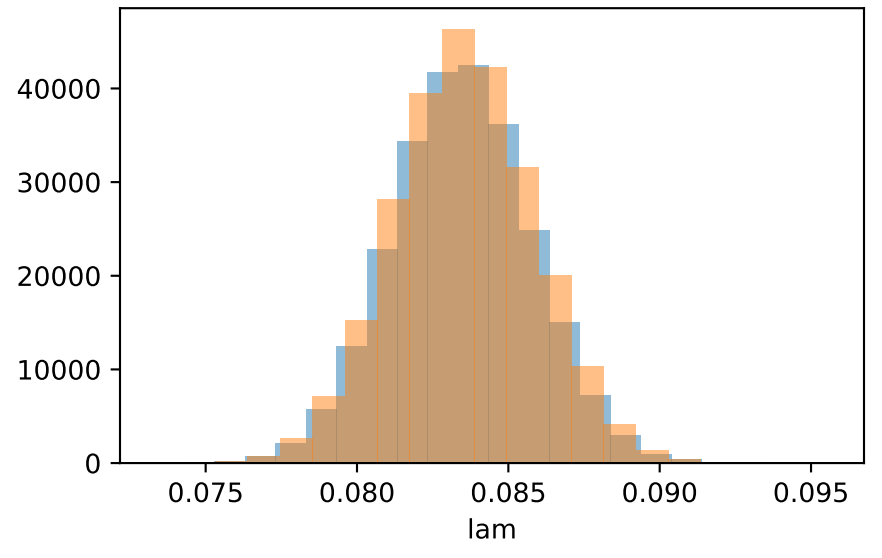

zero_i
305
300
295
290
285
chi
0
50000
100000
150000
200000
250000
iteration

one_i

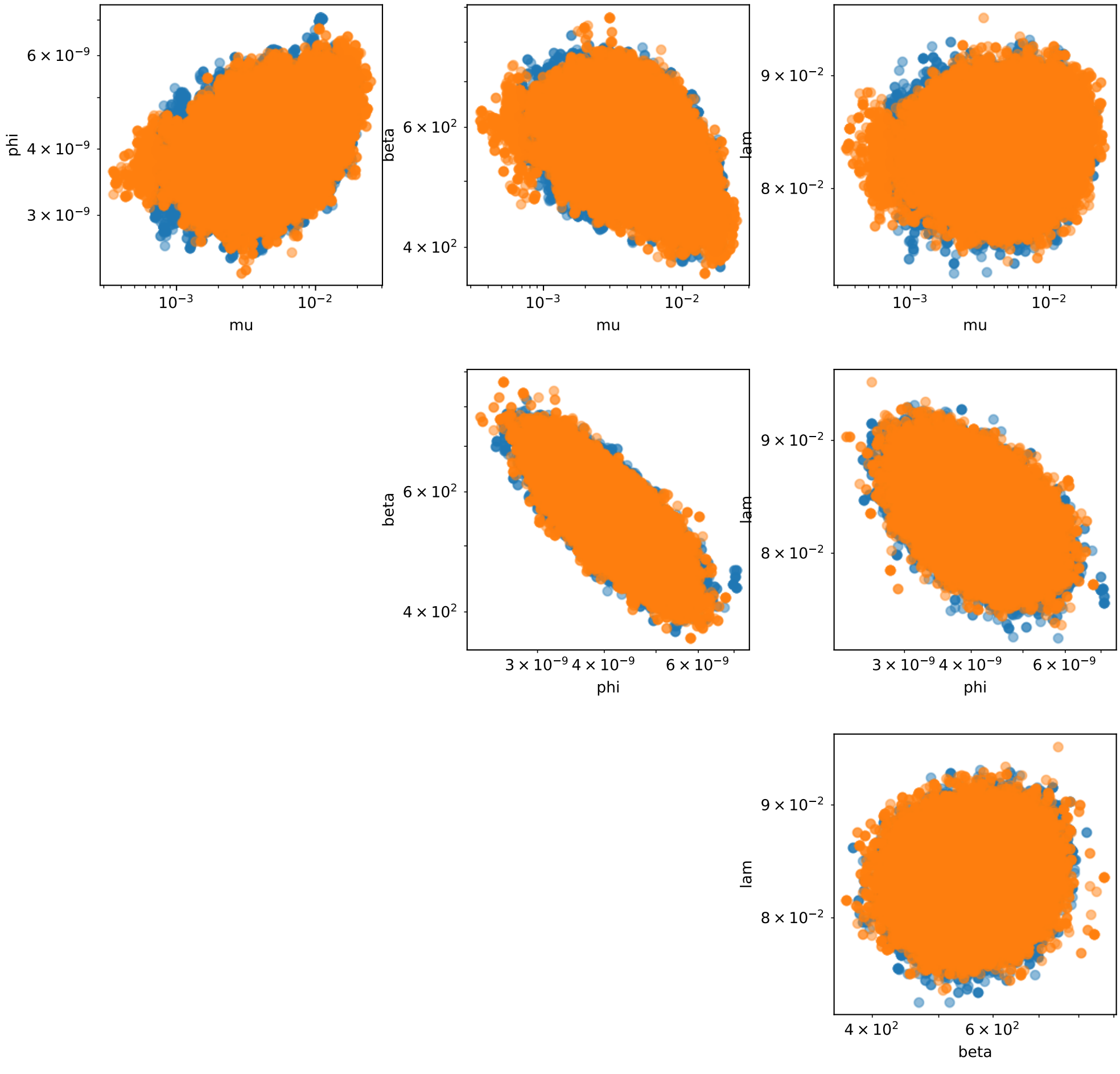

40000
30000
20000
10000
0
0.000
0.005
0.010
0.015
0.020
0.025
mu

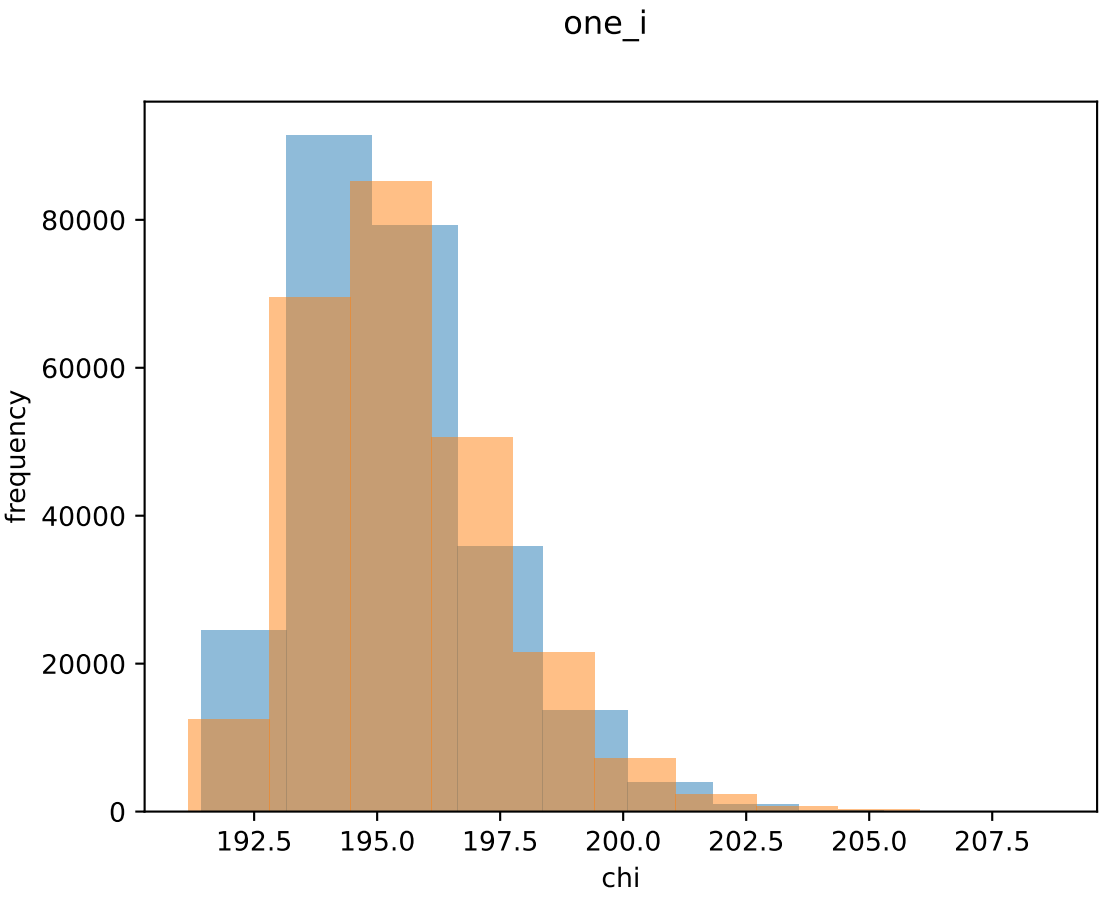

50000
40000
30000
20000
10000
0
3
4
5
6
7
1e−9
phi

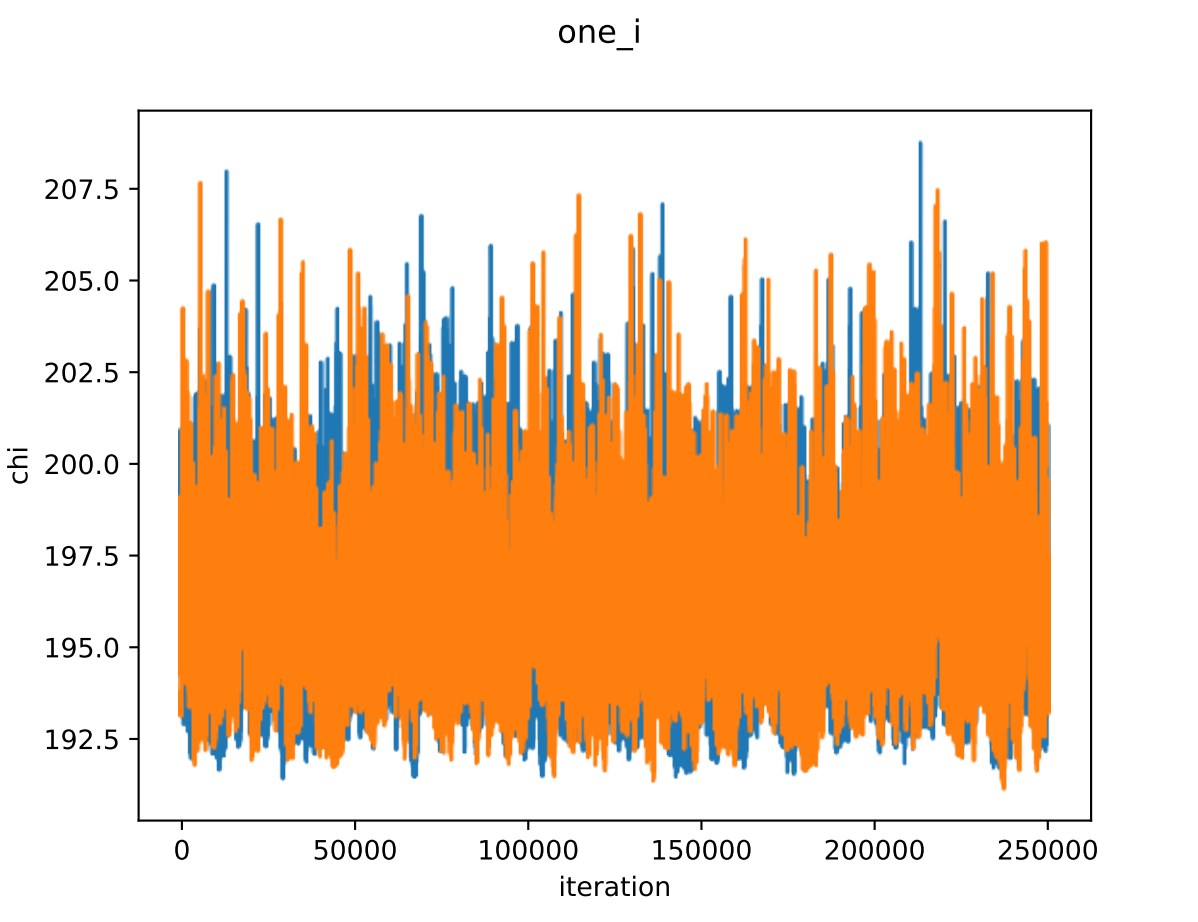

40000
30000
20000
10000
0
400
500
600
700
800
beta


40000
30000
20000
10000
0
0.075
0.080
0.085
0.090
0.095
lam

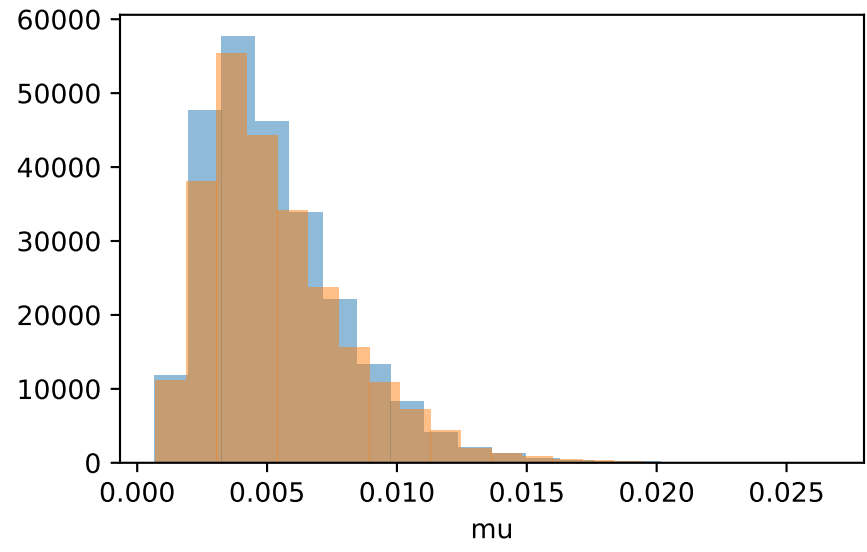
one_i

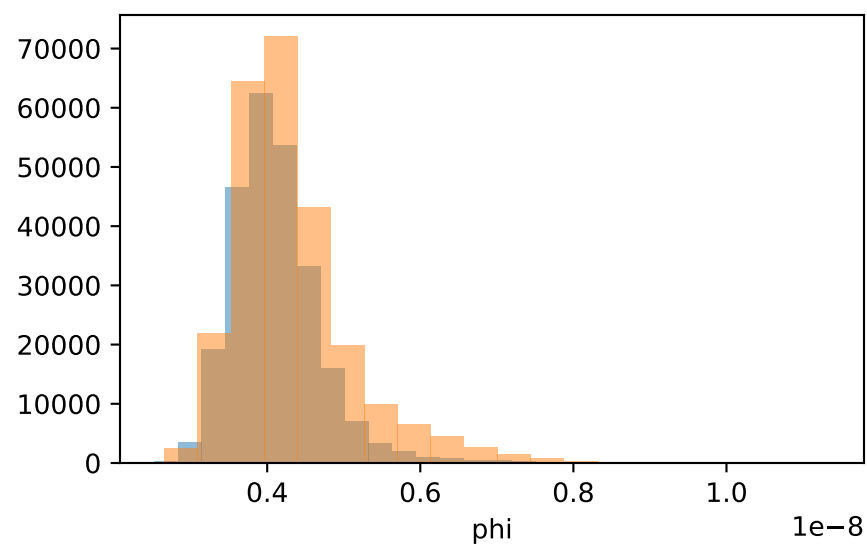

phi
beta
lam
mu
phi
beta
lam
mu
phi
beta
lam
mu
$6 \times 10^{-9}$
$4 \times 10^{-9}$
$3 \times 10^{-9}$
$6 \times 10^{2}$
$4 \times 10^{2}$
$9 \times 10^{-2}$
$8 \times 10^{-2}$
$10^{-3}$
$10^{-2}$
$3 \times 10^{-9}$ $4 \times 10^{-9}$
$6 \times 10^{-9}$

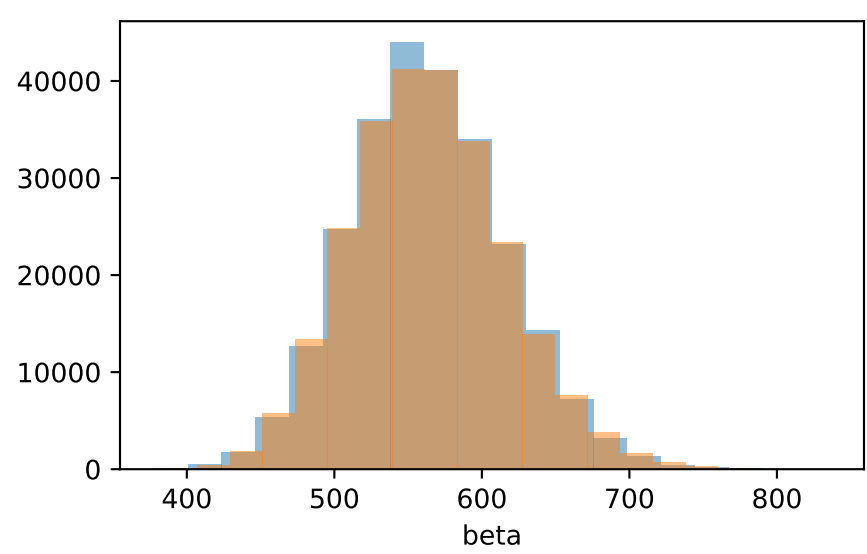

one_i
frequency
80000
60000
40000
20000
0
192.5
195.0
197.5
200.0
202.5
205.0
207.5
chi

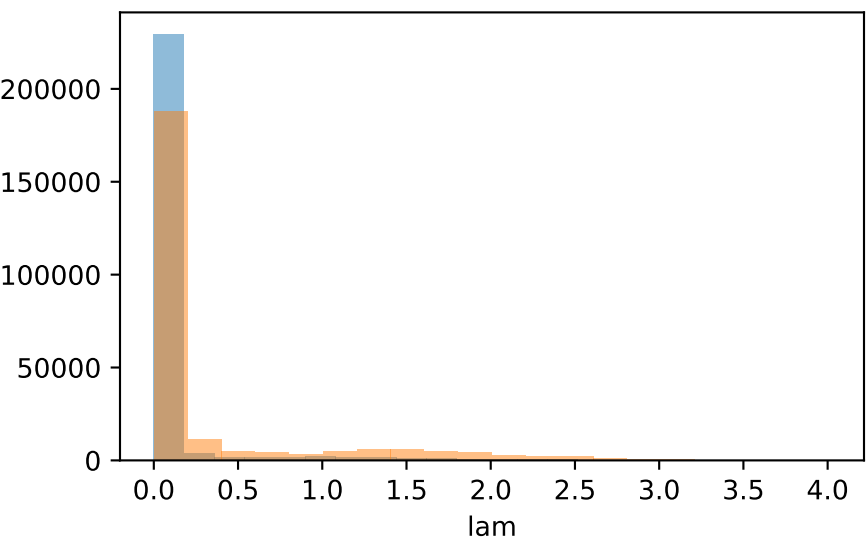

one_i
chi
iteration
207.5
205.0
202.5
200.0
197.5
195.0
192.5
0
50000
100000
150000
200000
250000

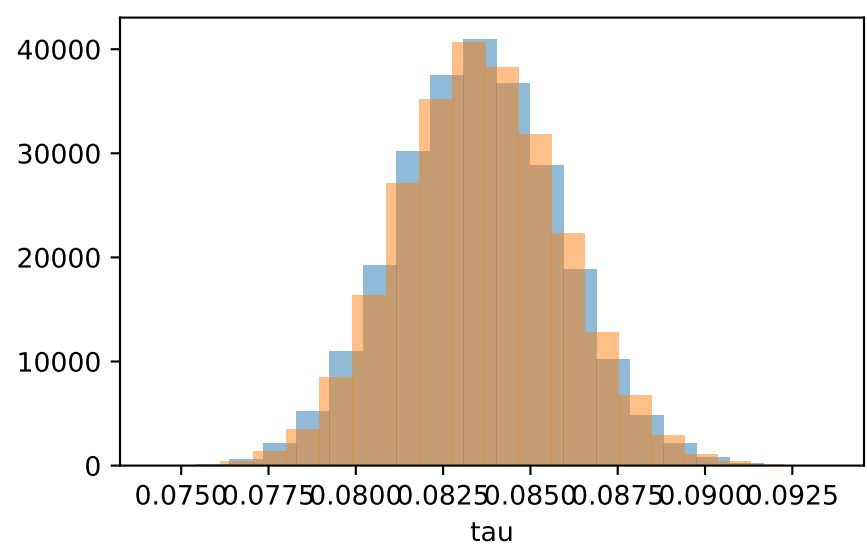
two_i


60000
50000
40000
30000
20000
10000
0
0.000
0.005
0.010
0.015
0.020
0.025
mu

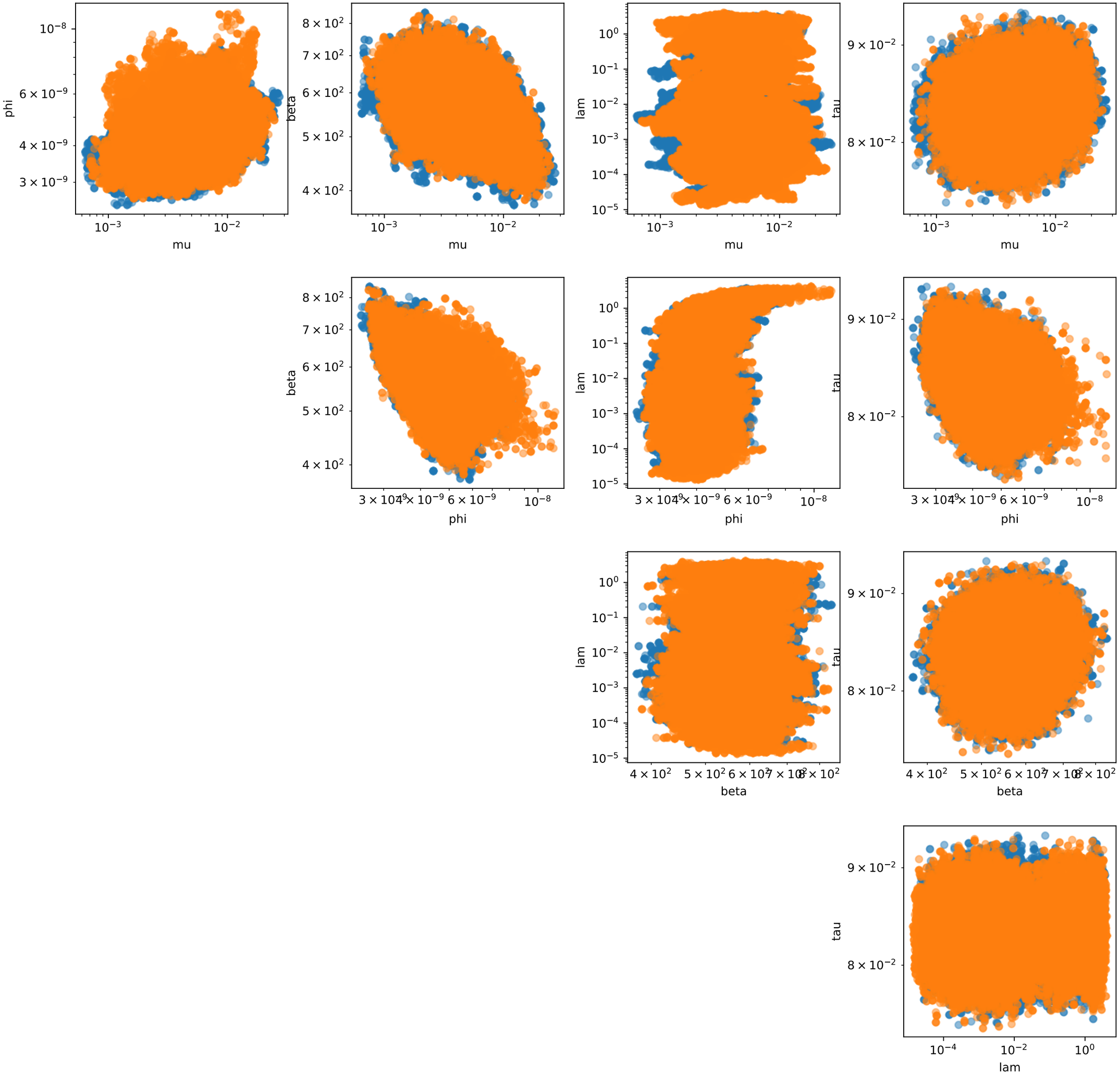

70000
60000
50000
40000
30000
20000
10000
0
0.4
0.6
0.8
1.0
phi
1e−8

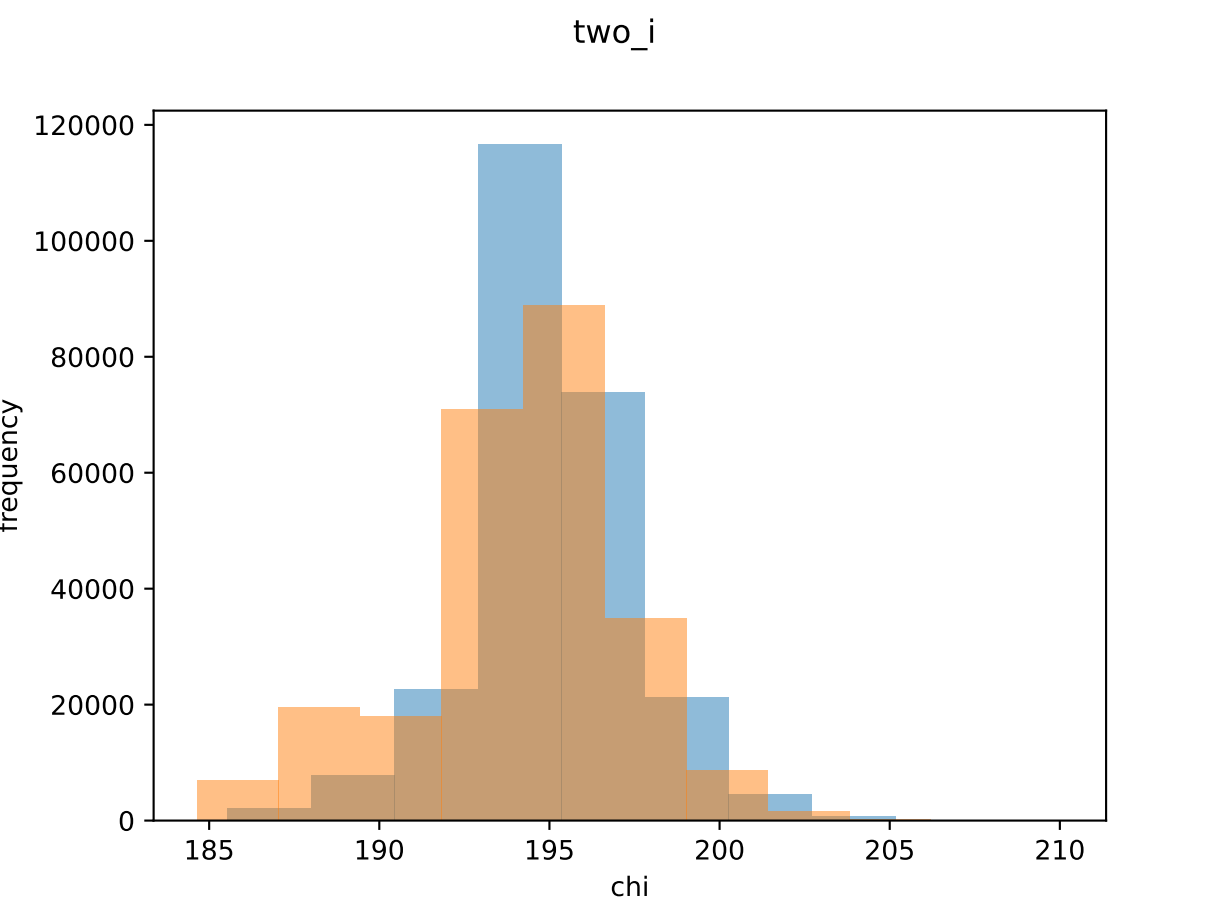

40000
30000
20000
10000
0
400
500
600
700
800
beta

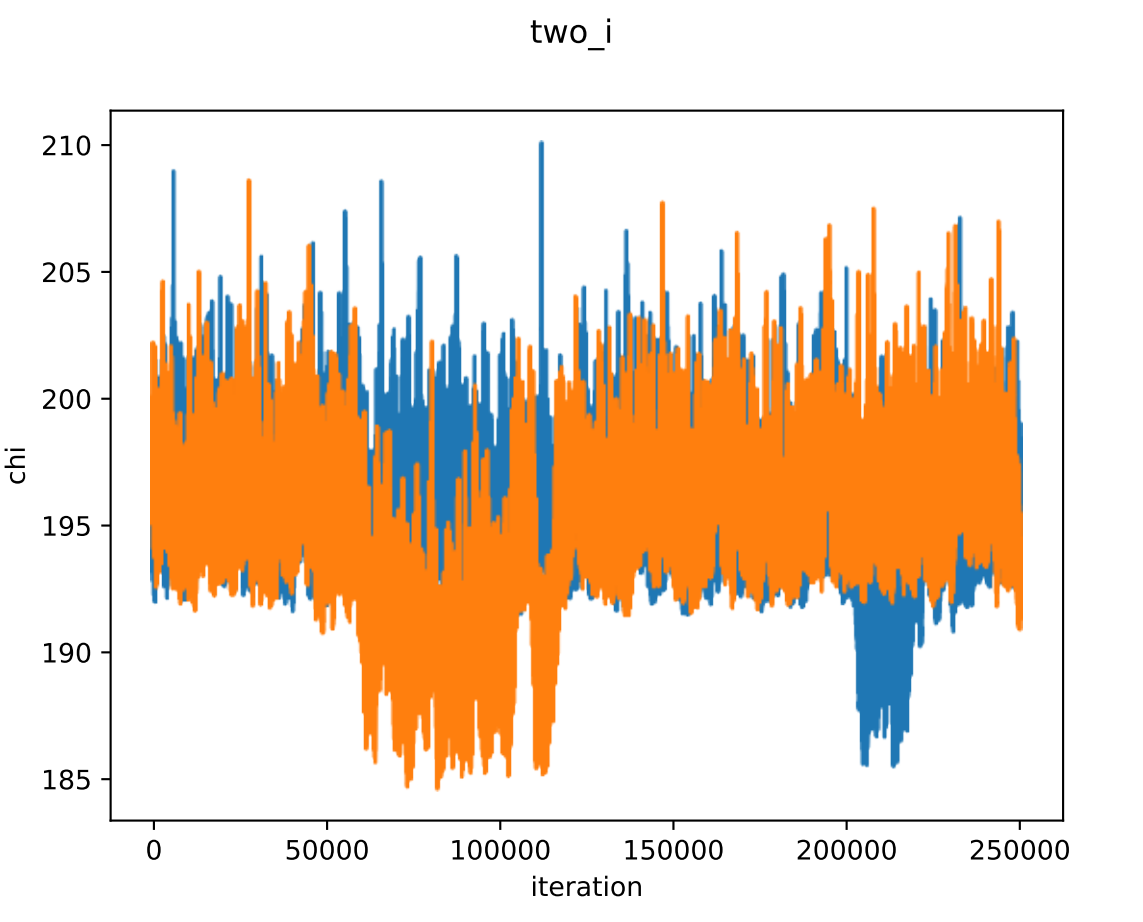

200000
150000
100000
50000
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
lam


40000
30000
20000
10000
0
0.0750
0.0775
0.0800
0.0825
0.0850
0.0875
0.0900
0.0925
tau

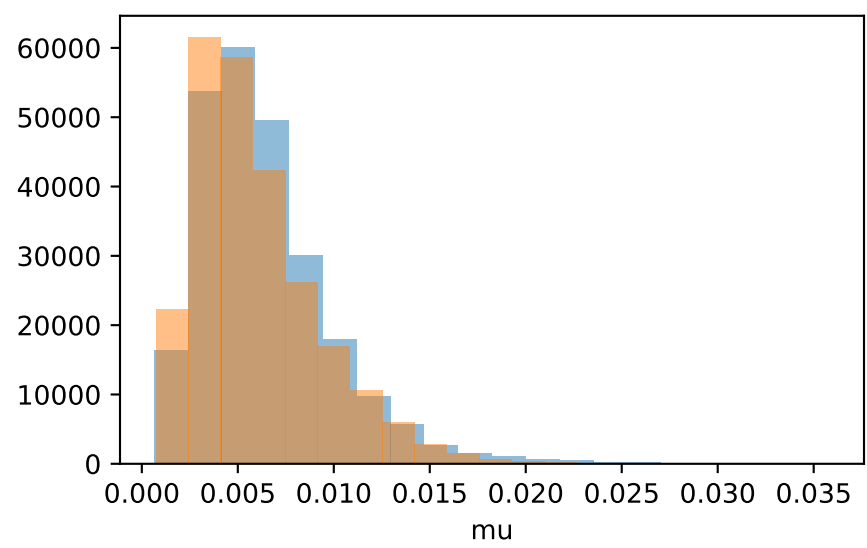
two_i

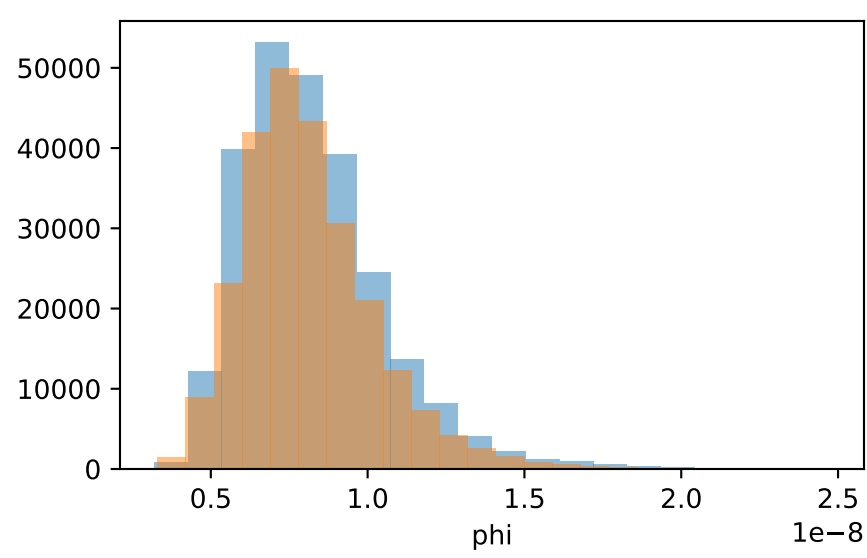


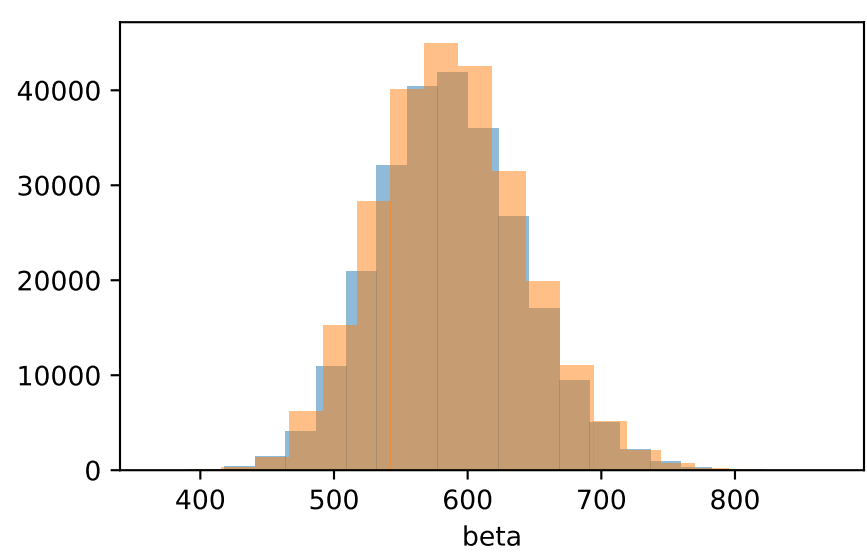

two_i
120000
100000
80000
60000
40000
20000
0
frequency
185
190
195
200
205
210
chi

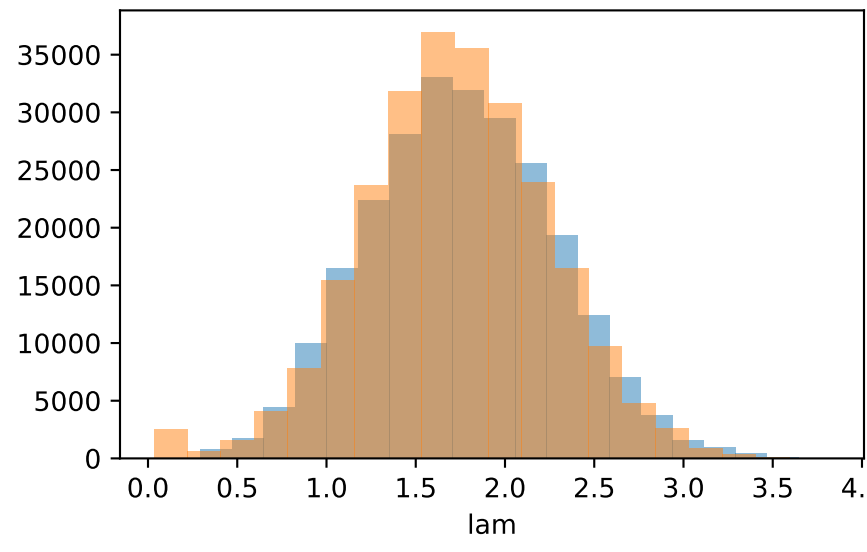

two_i
chi
iteration
210
205
200
195
190
185
0
50000
100000
150000
200000
250000

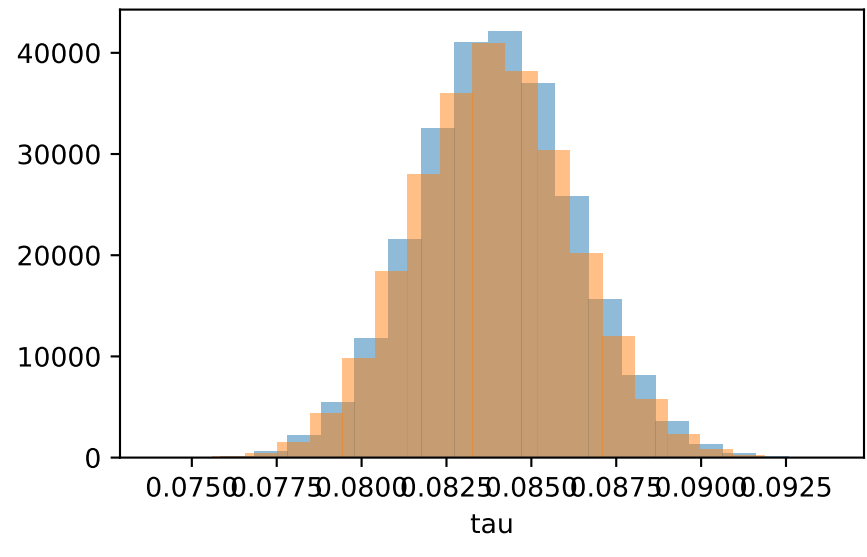
three_i


60000
50000
40000
30000
20000
10000
0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
mu

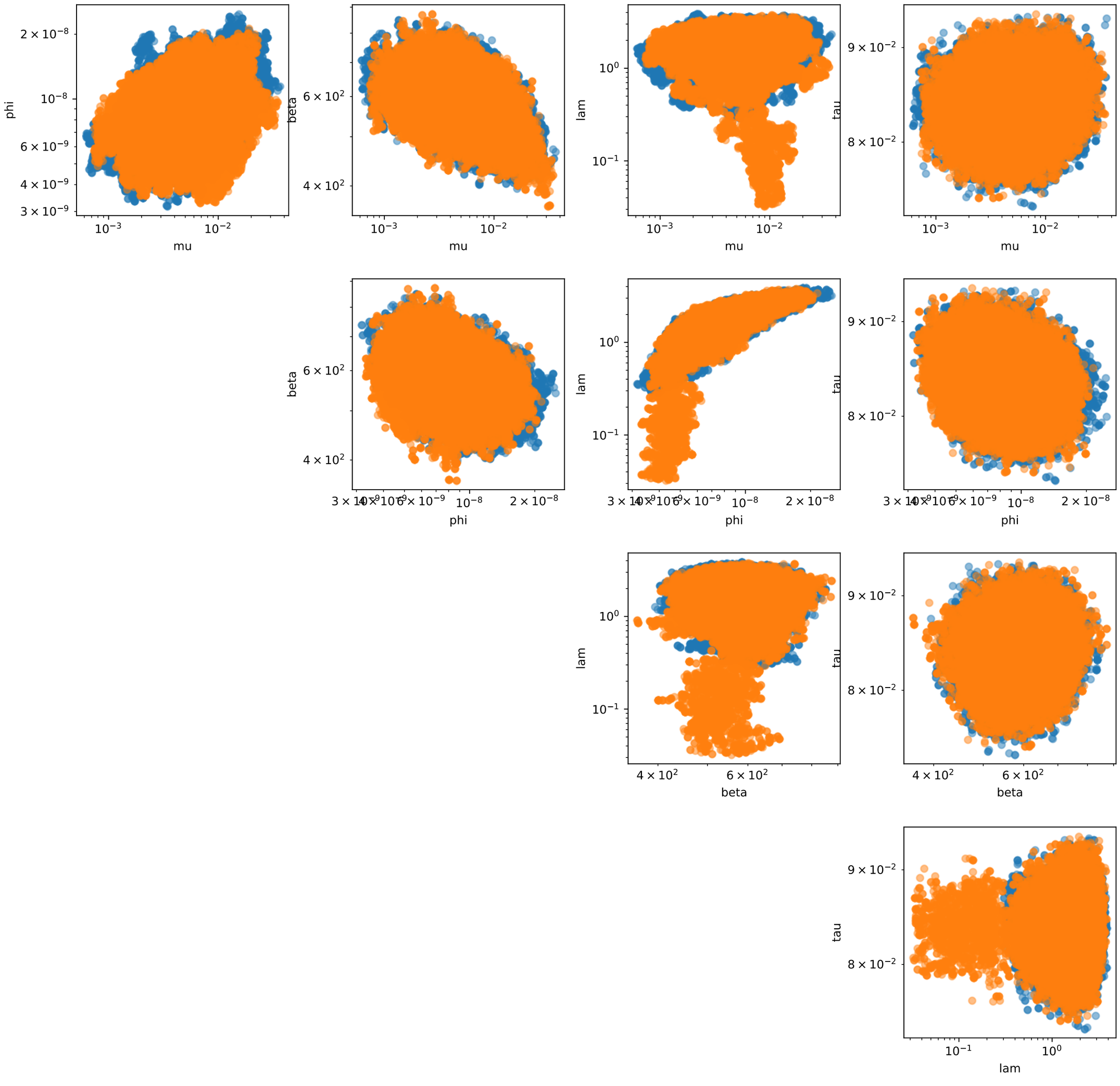

50000
40000
30000
20000
10000
0
0.5
1.0
1.5
2.0
2.5
phi
1e−8

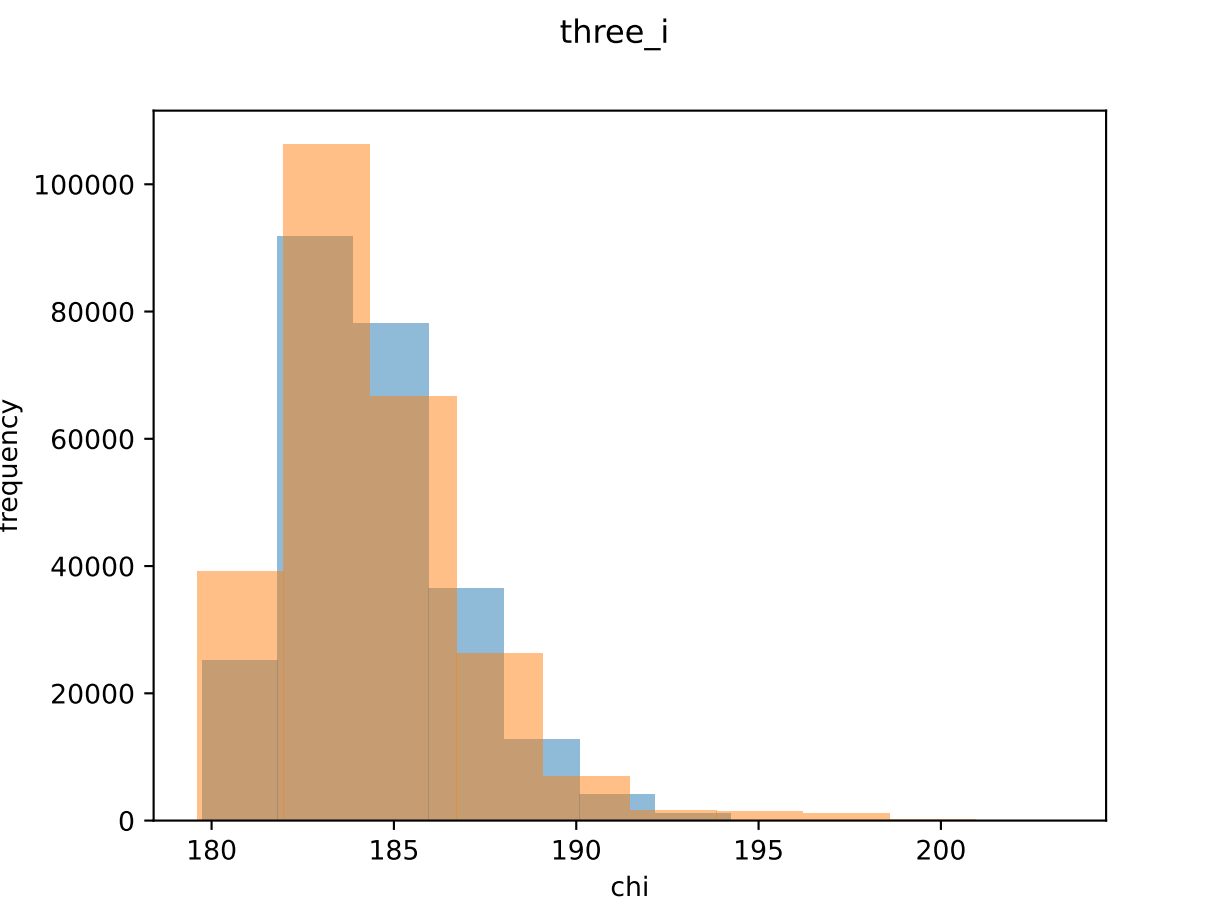

40000
30000
20000
10000
0
400
500
600
700
800
beta

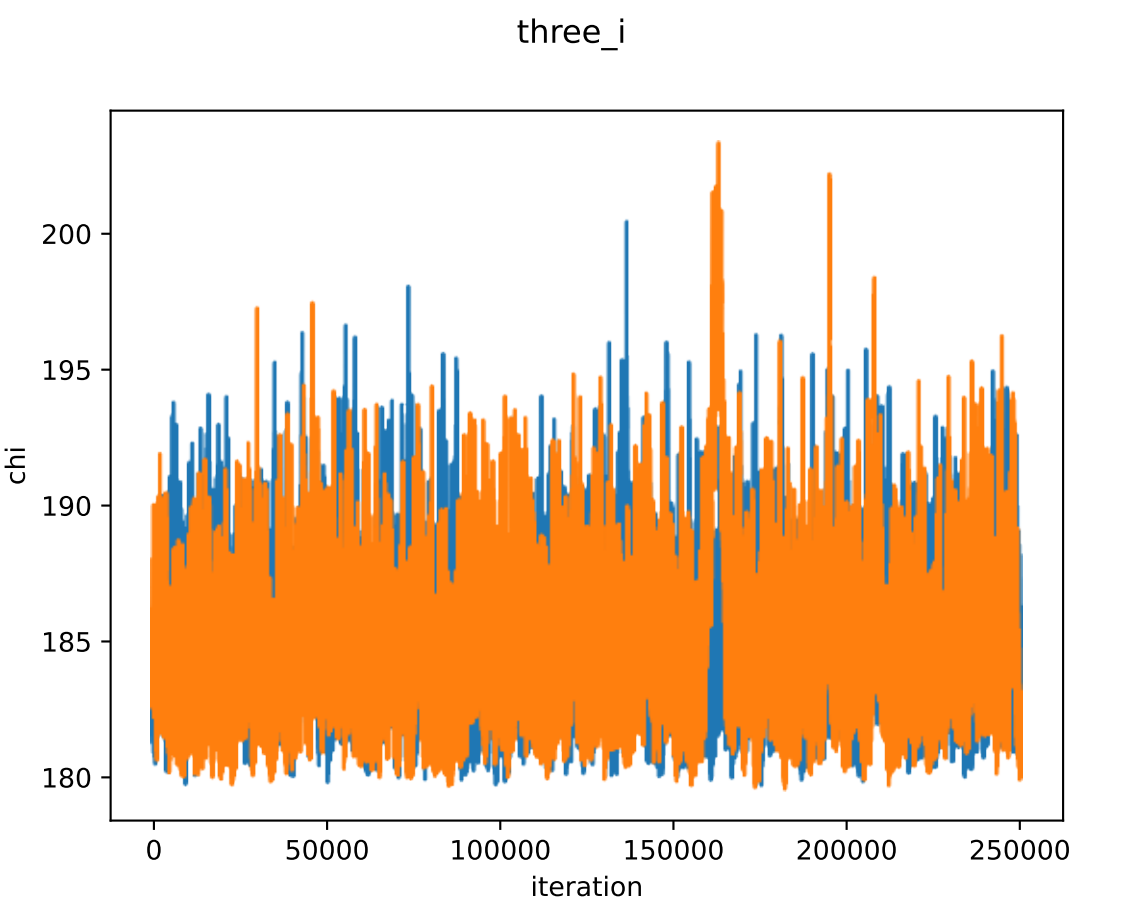

35000
30000
25000
20000
15000
10000
5000
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
lam


40000
30000
20000
10000
0
0.0750
0.0775
0.0800
0.0825
0.0850
0.0875
0.0900
0.0925
tau

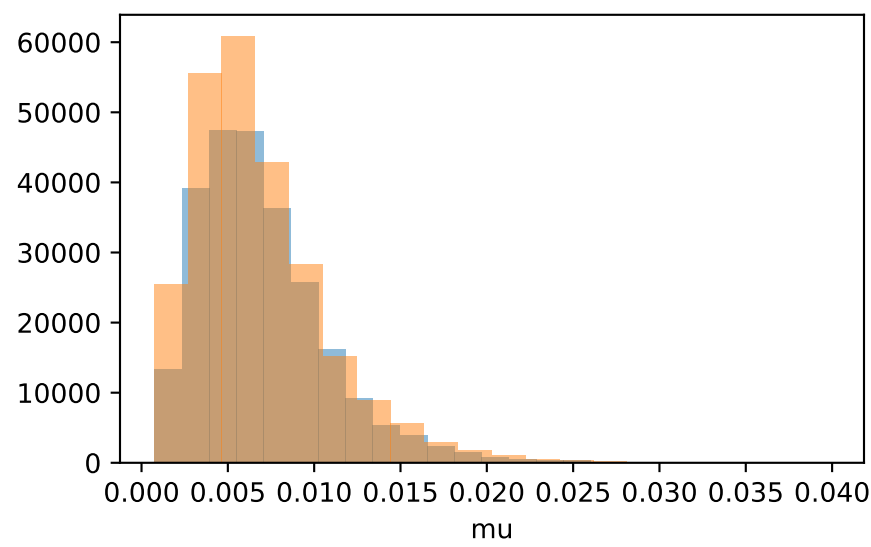
three_i

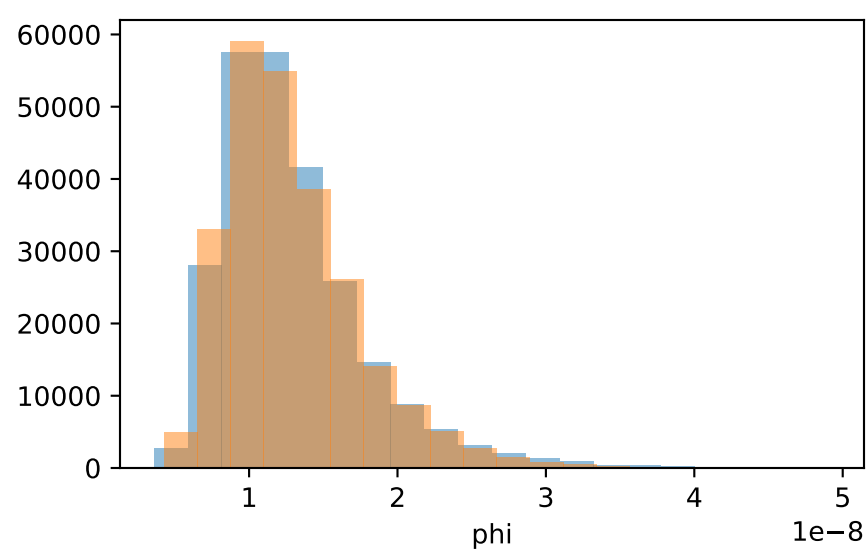


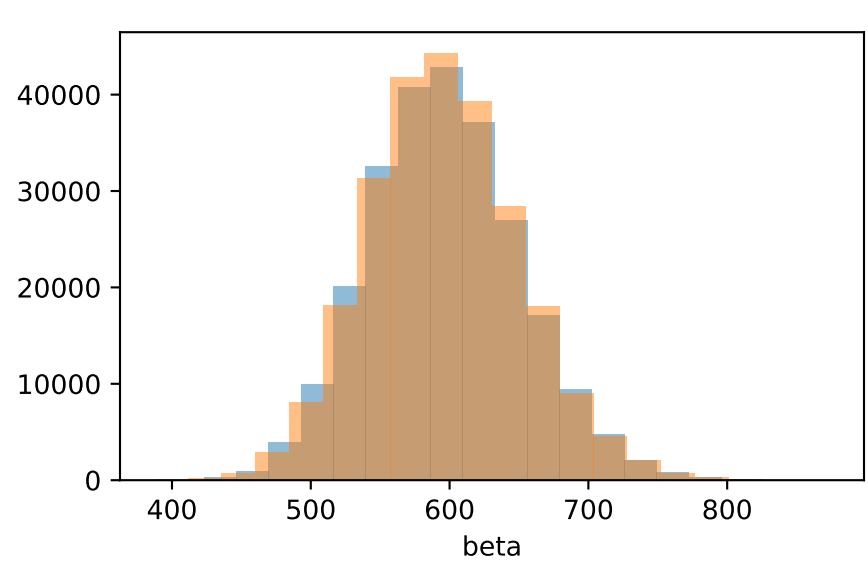

three_i
100000
80000
60000
40000
20000
0
frequency
180
185
190
195
200
chi

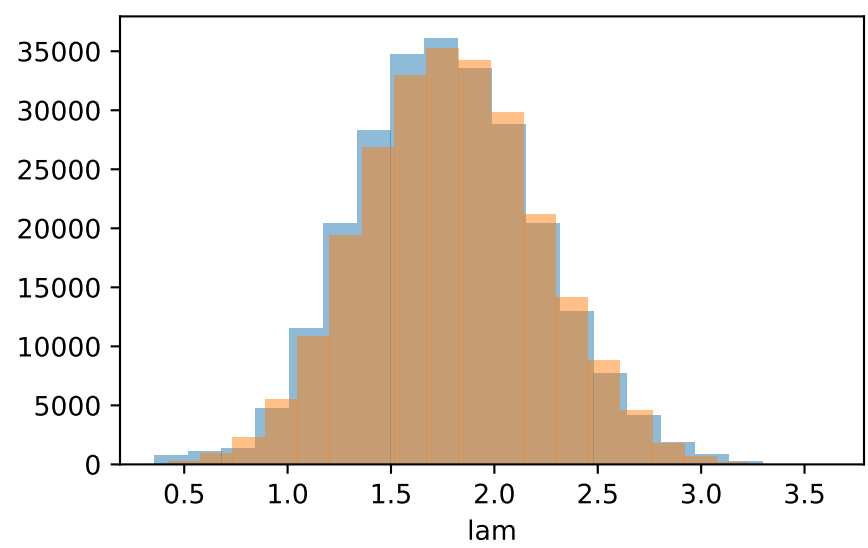

three_i
chi
200
195
190
185
180
0
50000
100000
150000
200000
250000
iteration

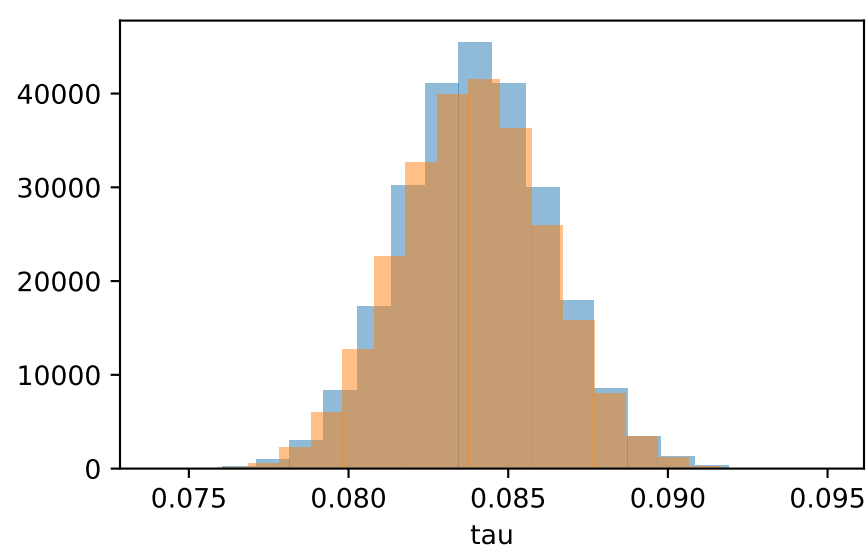
four_i


60000
50000
40000
30000
20000
10000
0
0.000 0.005 0.010 0.015 0.020 0.025 0.030 0.035 0.040
mu

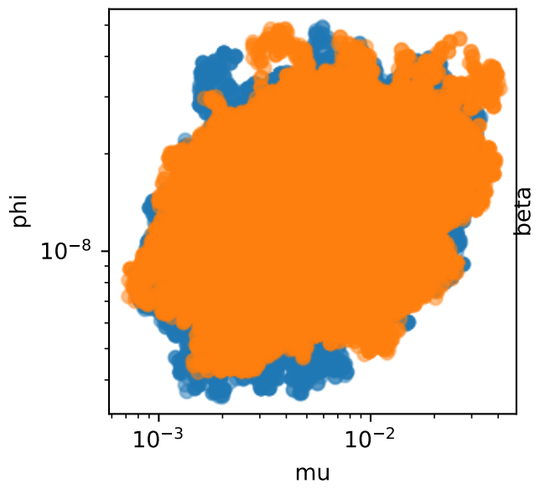

60000
50000
40000
30000
20000
10000
0
1
2
3
4
5
phi
1e−8

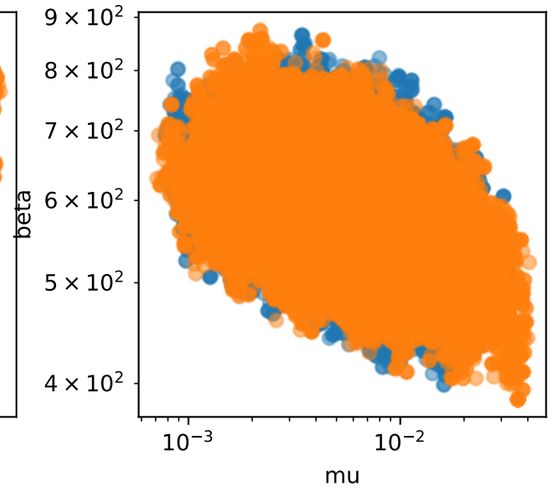

40000
30000
20000
10000
0
400
500
600
700
800
beta

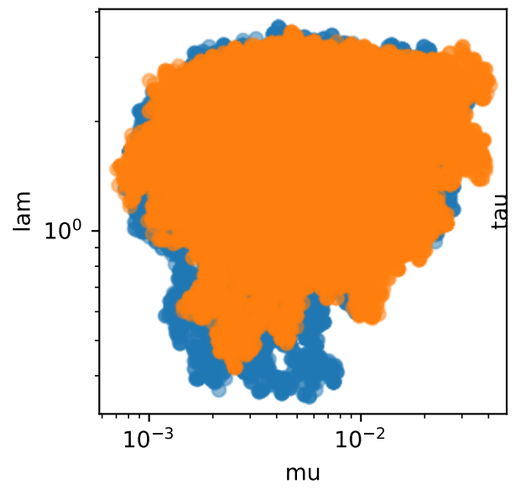

35000
30000
25000
20000
15000
10000
5000
0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
lam


40000
30000
20000
10000
0
0.075
0.080
0.085
0.090
0.095
tau

four_i


phi
$10^{-8}$
$10^{-3}$
$10^{-2}$
mu


beta
$9 \times 10^2$
$8 \times 10^2$
$7 \times 10^2$
$6 \times 10^2$
$5 \times 10^2$
$4 \times 10^2$
$10^{-3}$
$10^{-2}$
mu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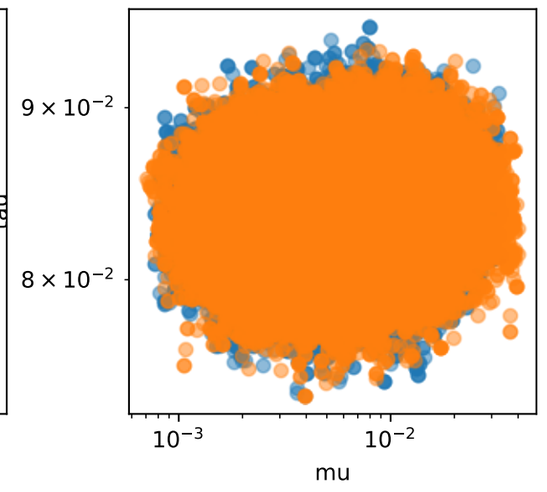
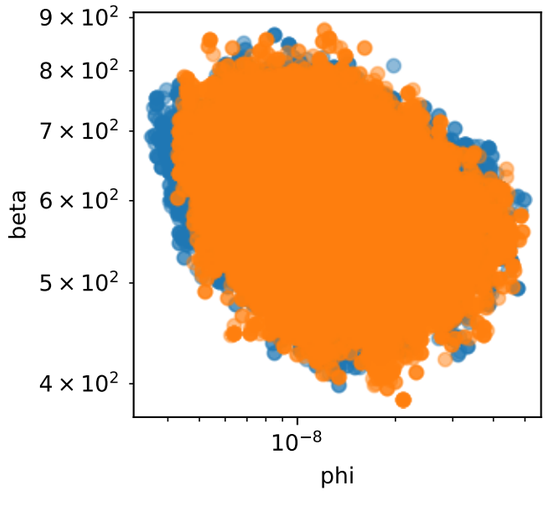
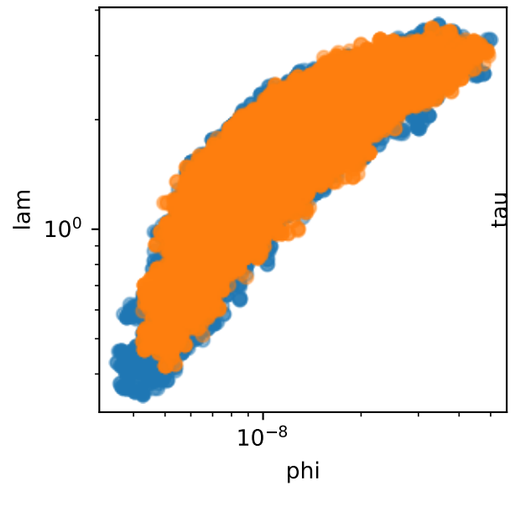
$10^{-3}$
$10^{-2}$
mu


tau
$9 \times 10^{-2}$
$8 \times 10^{-2}$
$10^{-3}$
$10^{-2}$
mu


beta
$9 \times 10^2$
$8 \times 10^2$
$7 \times 10^2$
$6 \times 10^2$
$5 \times 10^2$
$4 \times 10^2$
$10^{-8}$
phi


lam
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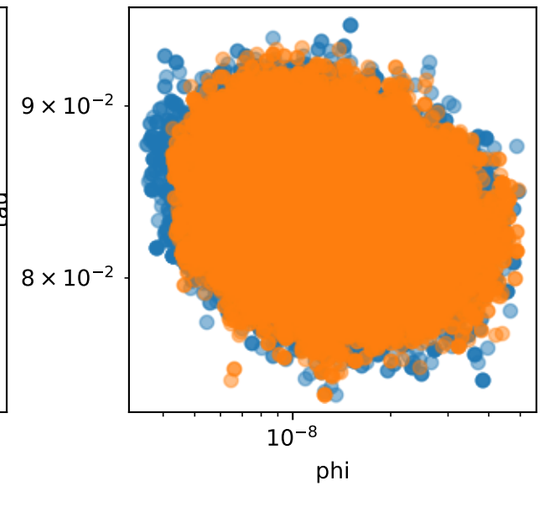
$10^{-8}$
phi


tau
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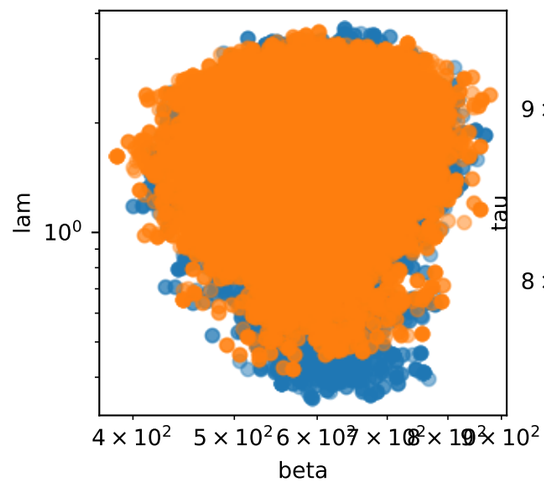
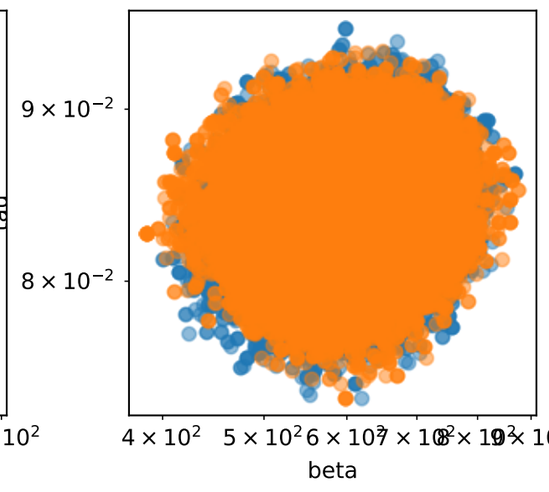
$8 \times 10^{-2}$
$10^{-8}$
phi


lam
$10^0$
$4 \times 10^2$
$5 \times 10^2$
$6 \times 10^2$
$9 \times 10^2$
beta


tau
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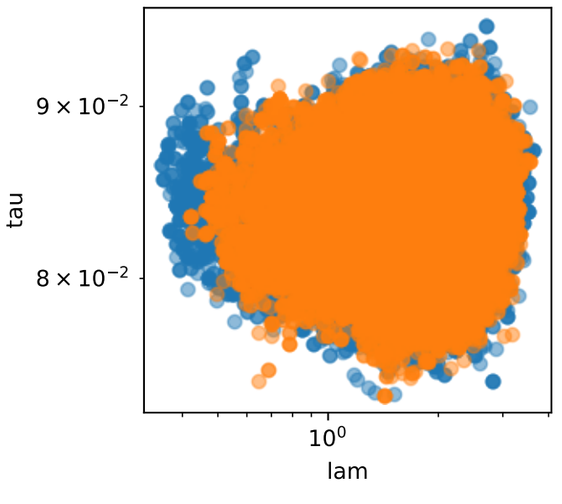
$8 \times 10^{-2}$
$4 \times 10^2$
$5 \times 10^2$
$6 \times 10^2$
$9 \times 10^2$
beta


tau
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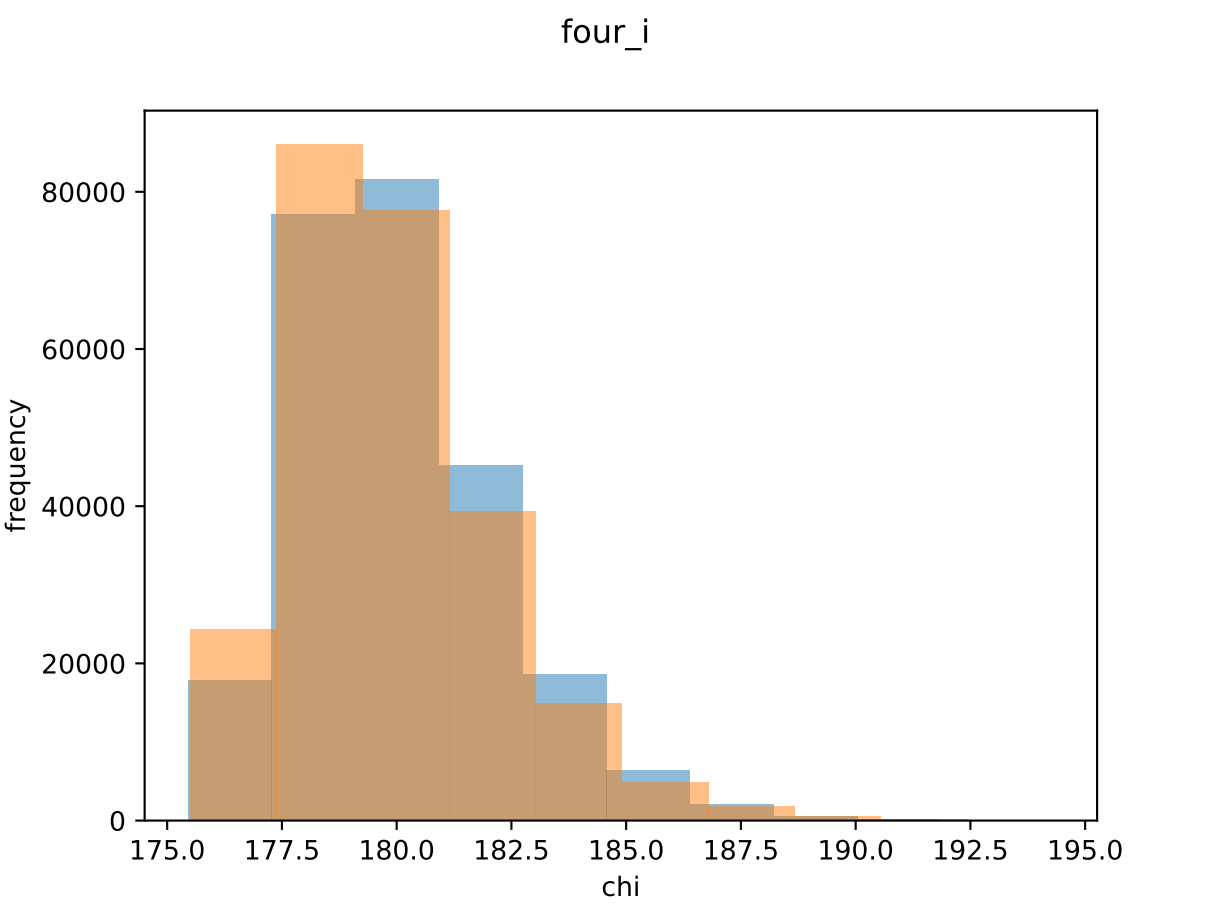
$8 \times 10^{-2}$
$10^0$
lam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40000
20000
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187.5
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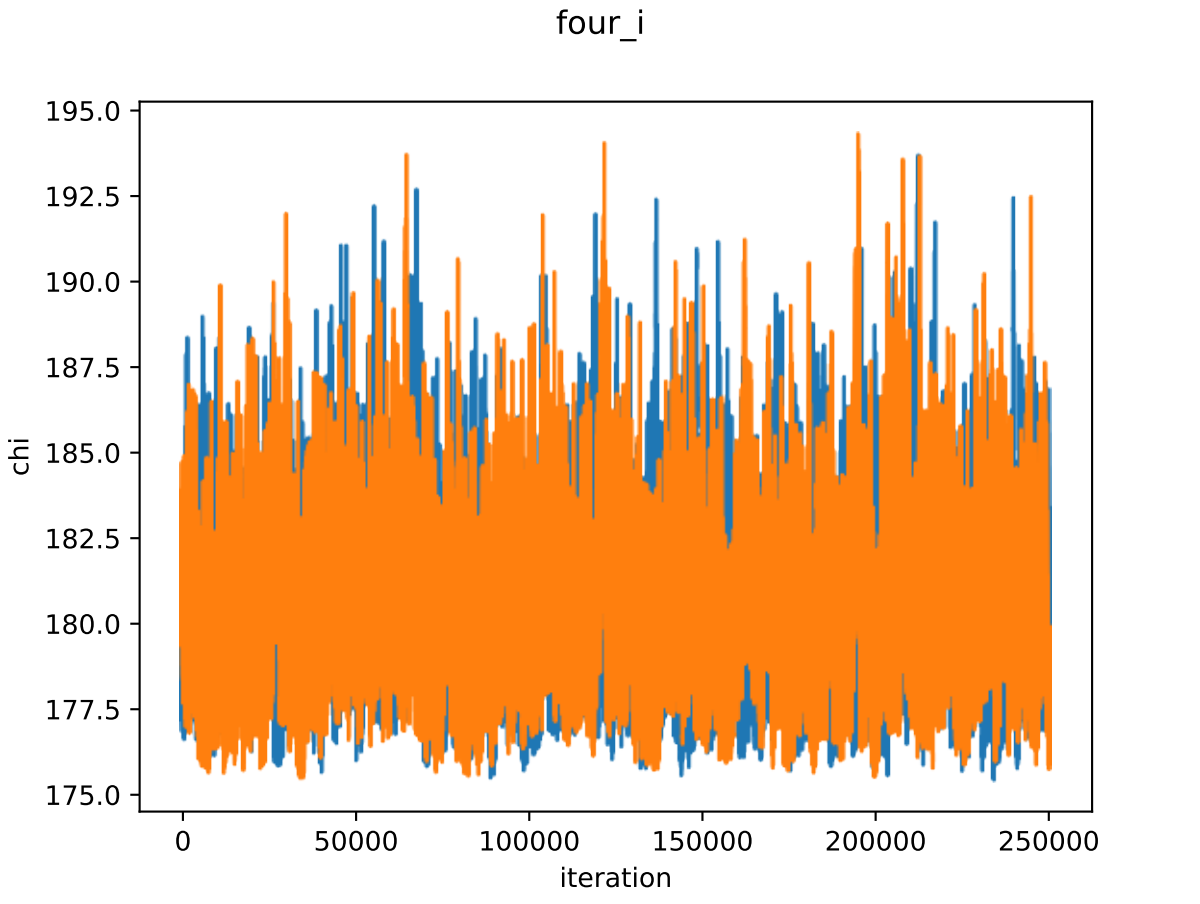
192.5
195.0
chi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chi
iteration
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192.5
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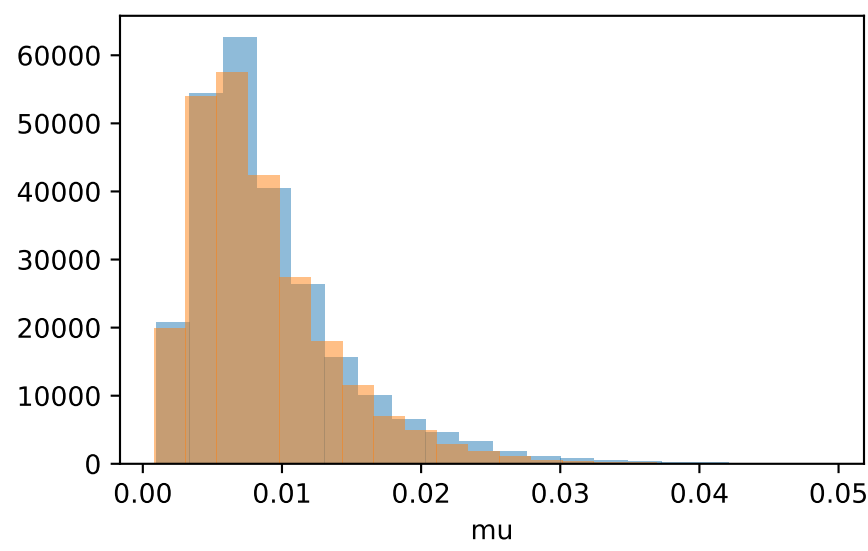
100000
150000
200000
250000

five_i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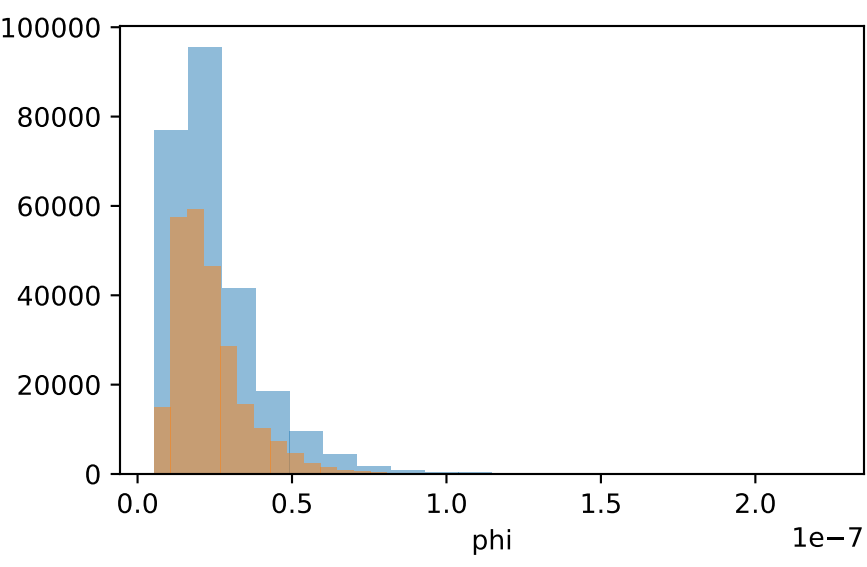
mu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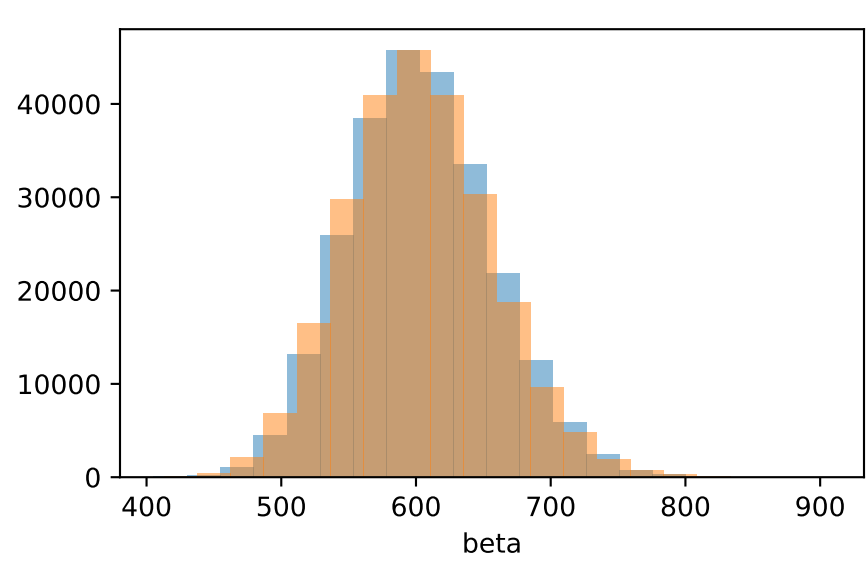
phi
1e−7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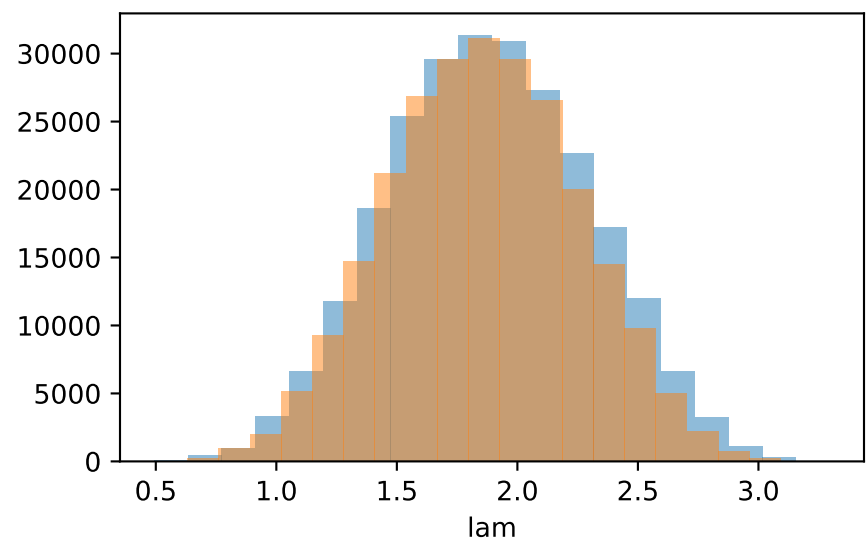
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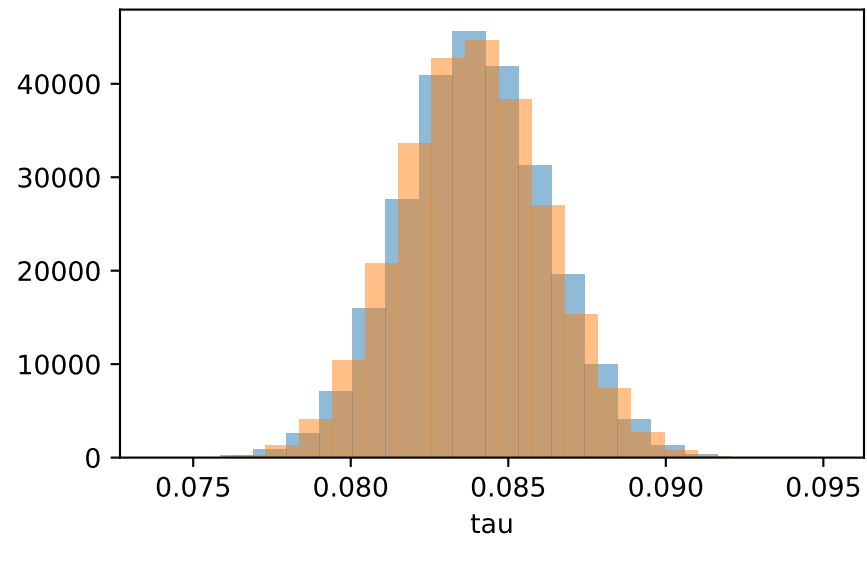
3.0
lam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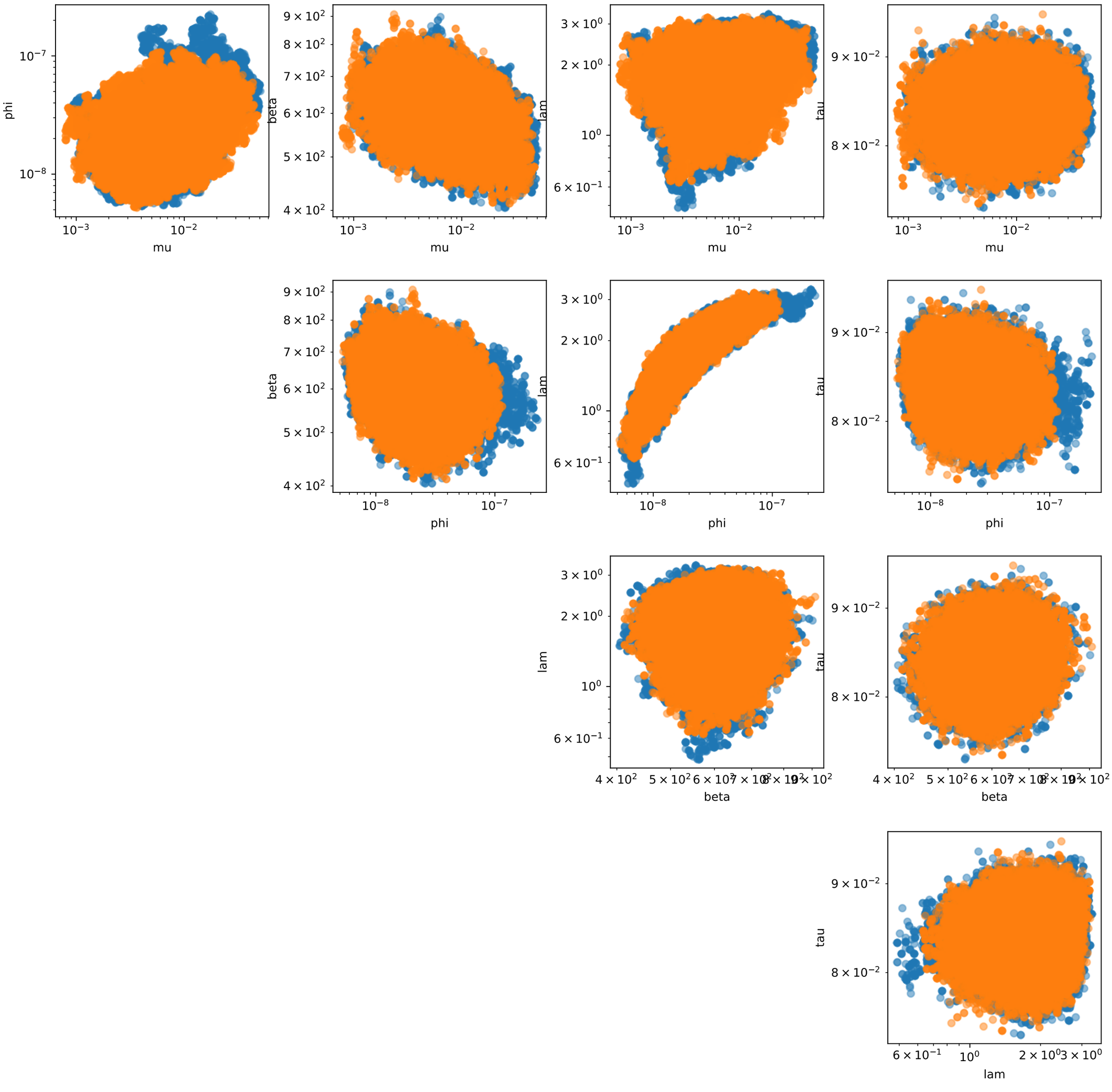
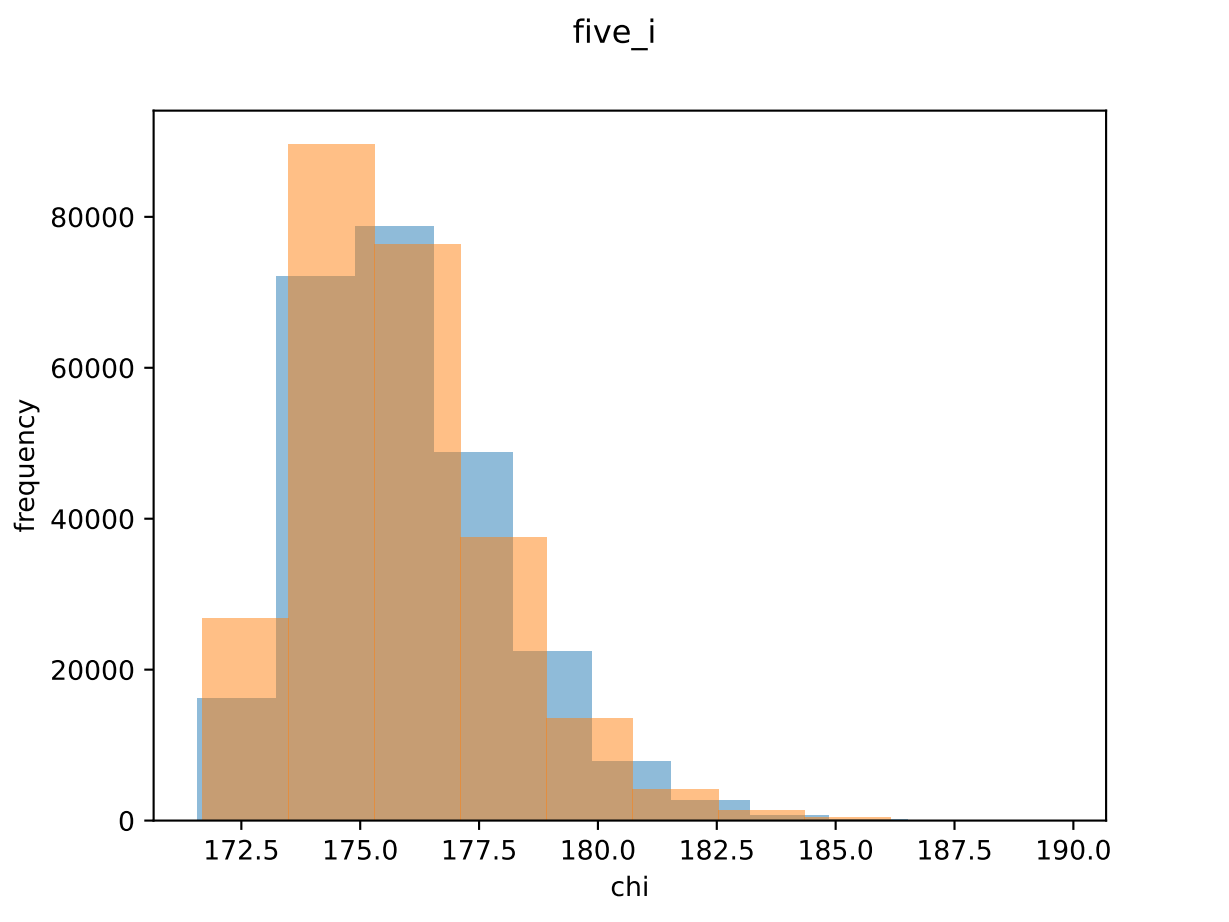
tau

five_i




five_i
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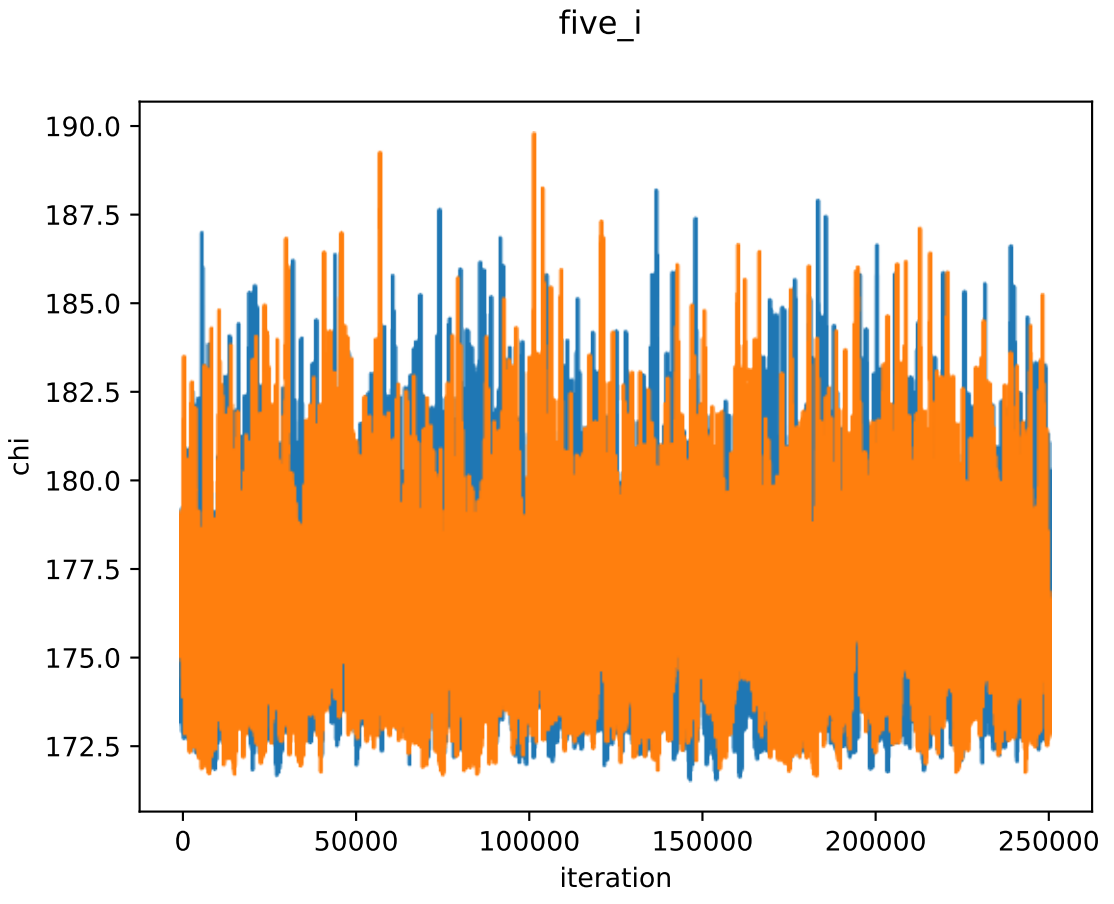
five_i
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chi
0
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iteration