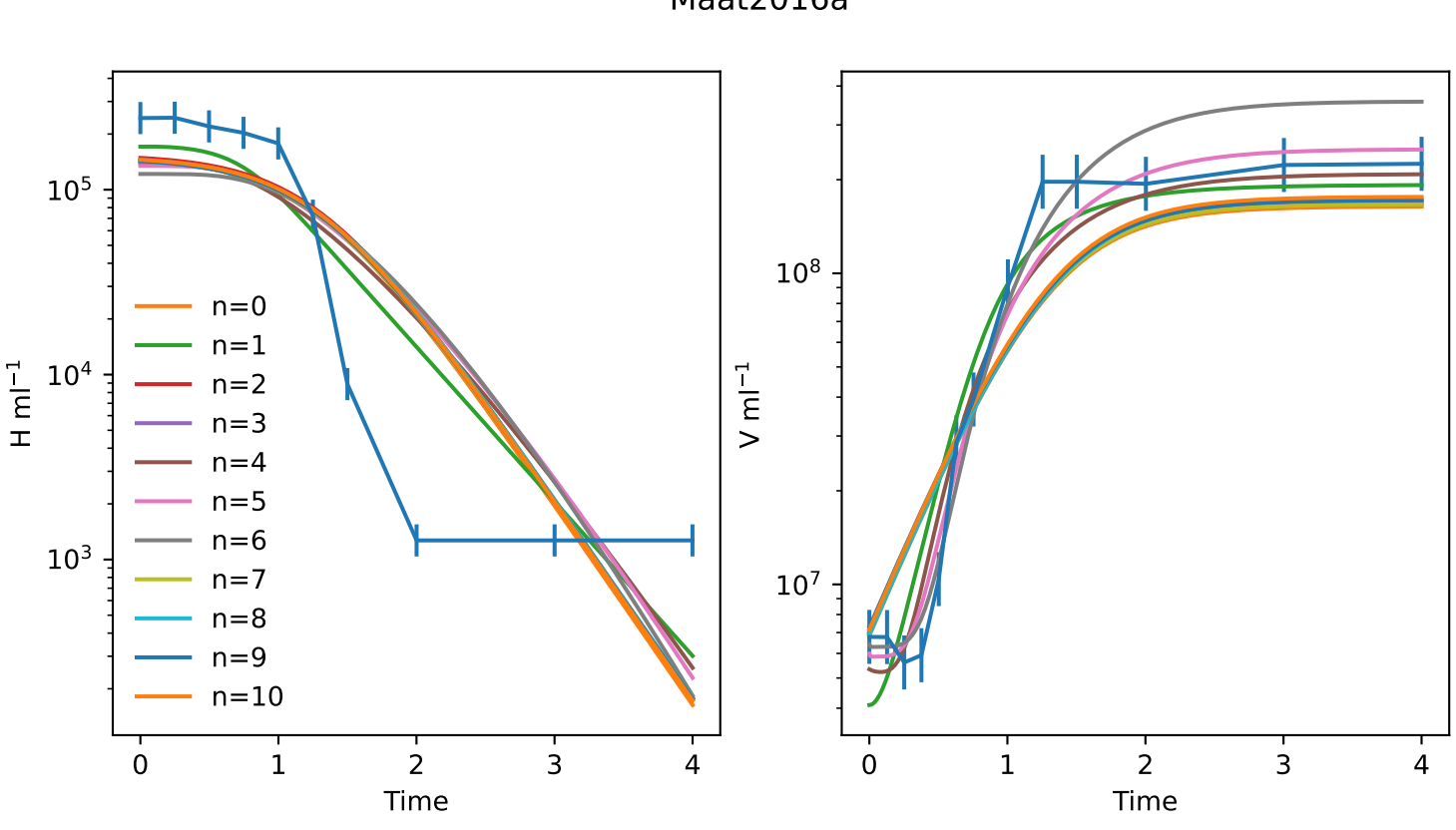
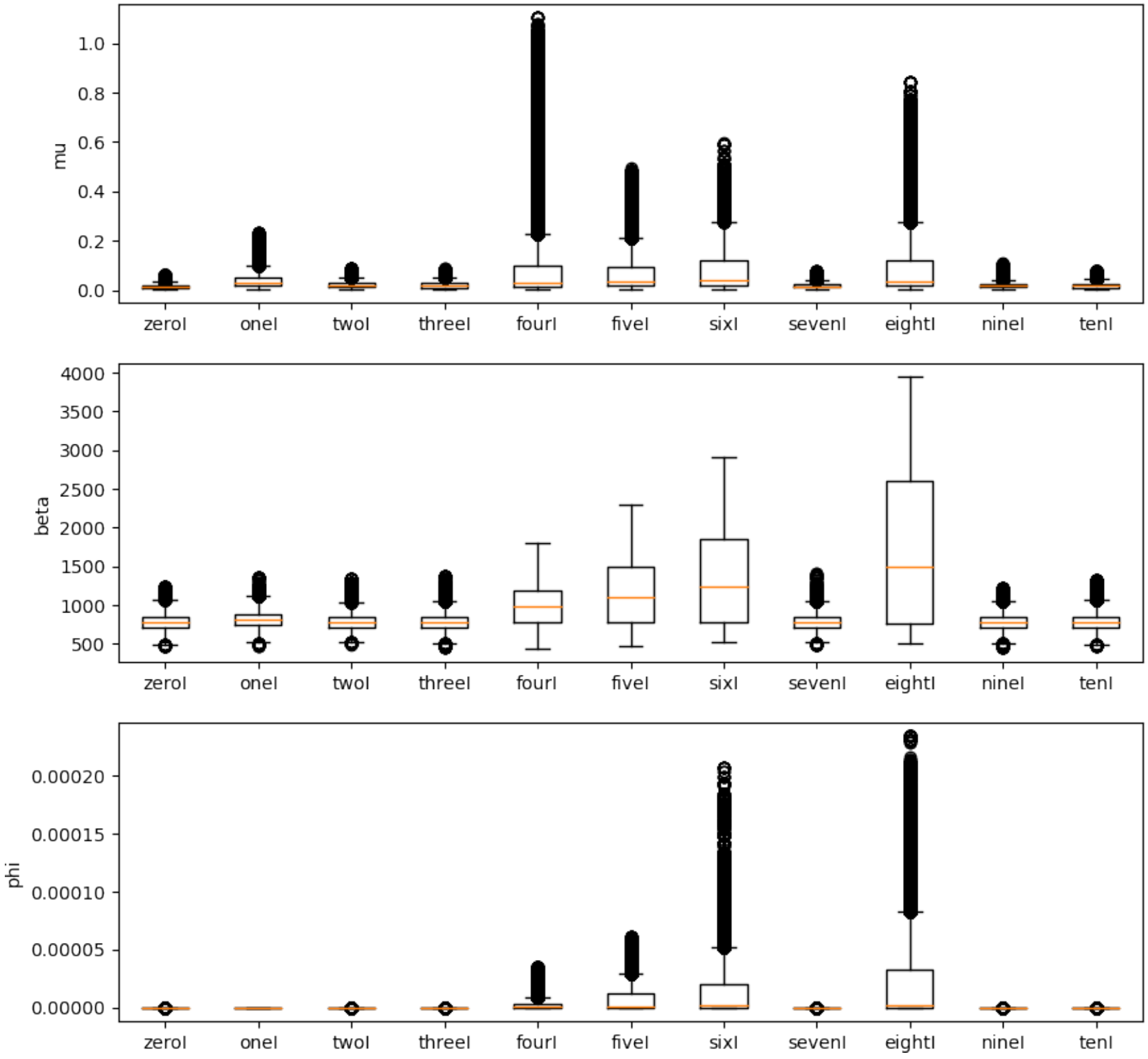
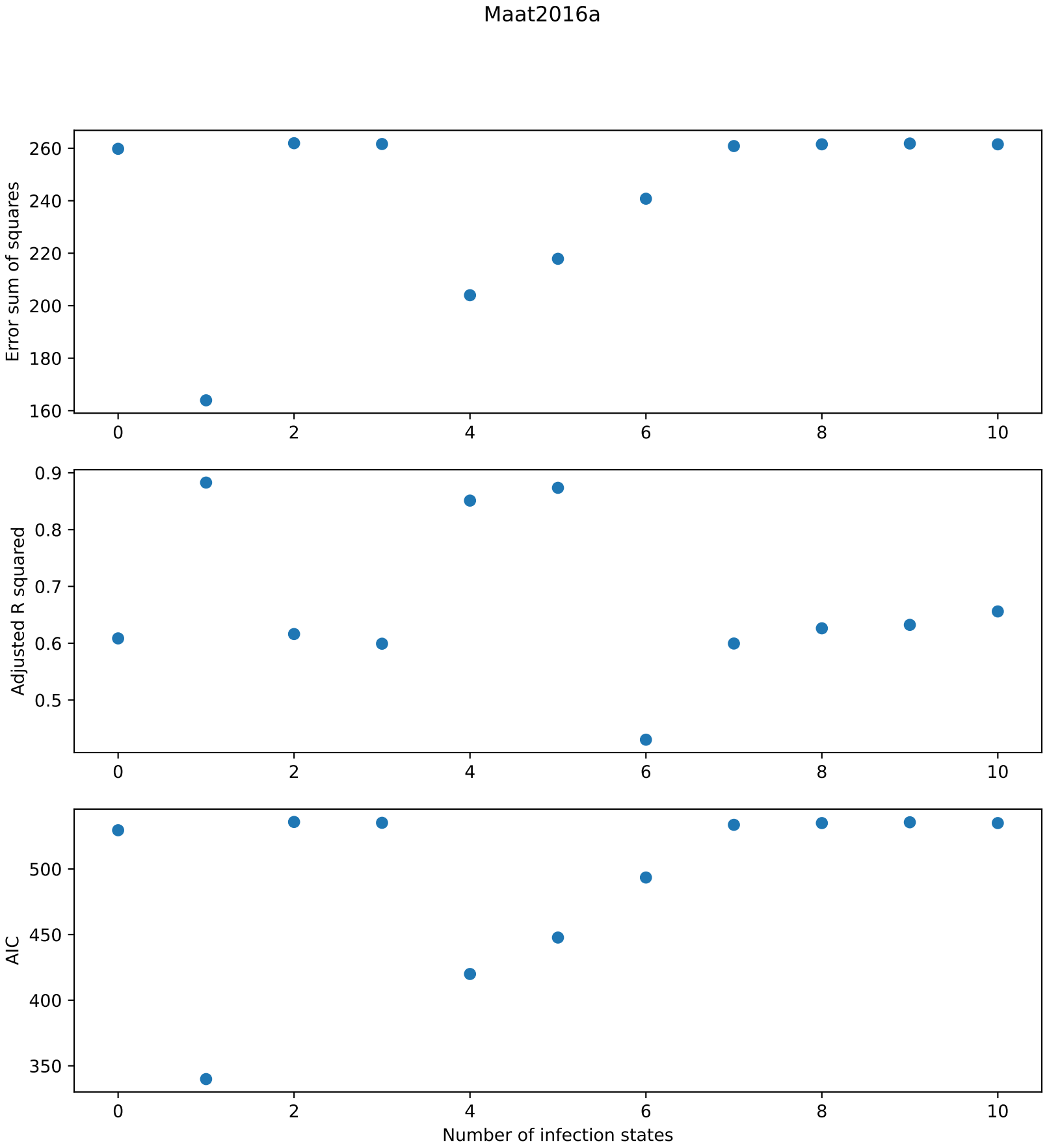
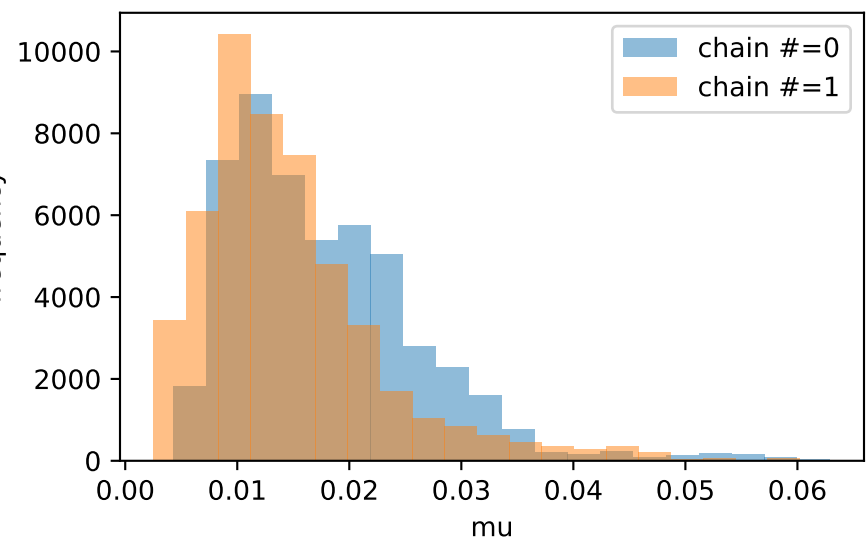

Maat2016a
H ml^{-1}
10^5
10^4
10^3
n=0
n=1
n=2
n=3
n=4
n=5
n=6
n=7
n=8
n=9
n=10
0
1
2
3
4
Time
V ml^{-1}
10^8
10^7
0
1
2
3
4
Time

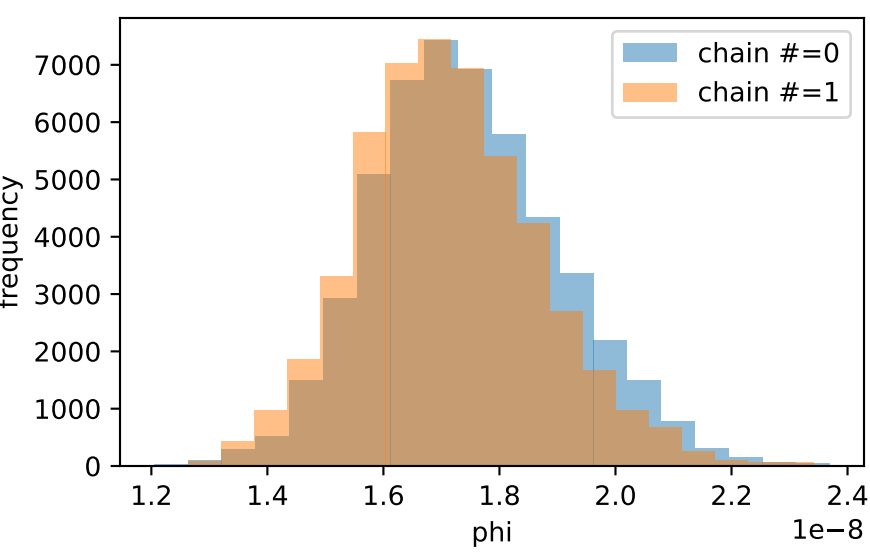
Maat2016a

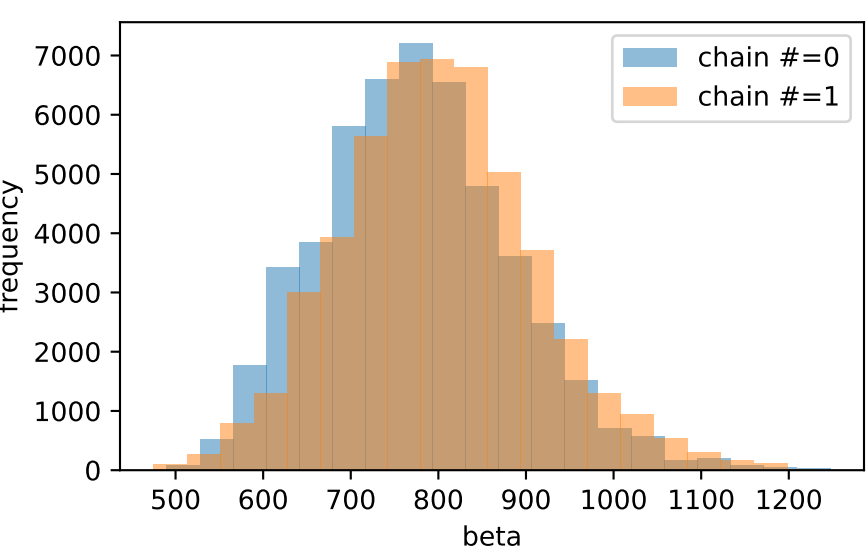

mu
1.0
0.8
0.6
0.4
0.2
0.0
zeroI
oneI
twoI
threeI
fourI
fiveI
sixI
sevenI
eightI
nineI
tenI
beta
4000
3500
3000
2500
2000
1500
1000
500
zeroI
oneI
twoI
threeI
fourI
fiveI
sixI
sevenI
eightI
nineI
tenI
phi
0.00020
0.00015
0.00010
0.00005
0.00000
zeroI
oneI
twoI
threeI
fourI
fiveI
sixI
sevenI
eightI
nineI
tenI


Maat2016a
Error sum of squares
260
240
220
200
180
160
0
2
4
6
8
10
Adjusted R squared
0.9
0.8
0.7
0.6
0.5
AIC
500
450
400
350
Number of infection states

zero_i


chain #=0
chain #=1
10000
8000
6000
4000
2000
0
0.00
0.01
0.02
0.03
0.04
0.05
0.06
mu


chain #=0
chain #=1
frequency
7000
6000
5000
4000
3000
2000
1000
0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
phi
1e−8


chain #=0
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frequency
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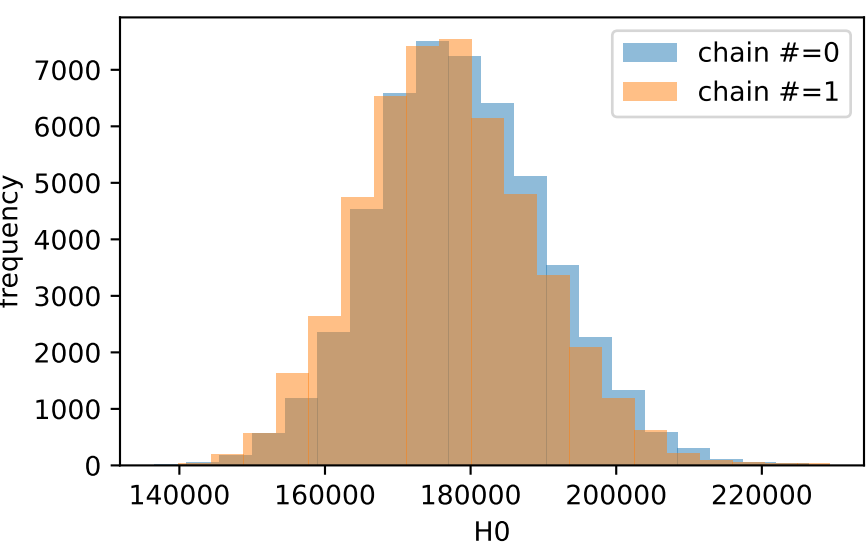
6000
5000
4000
3000
2000
1000
0
500
600
700
800
900
1000
1100
1200
beta


chain #=0
chain #=1
frequency
7000
6000
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4000
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2000
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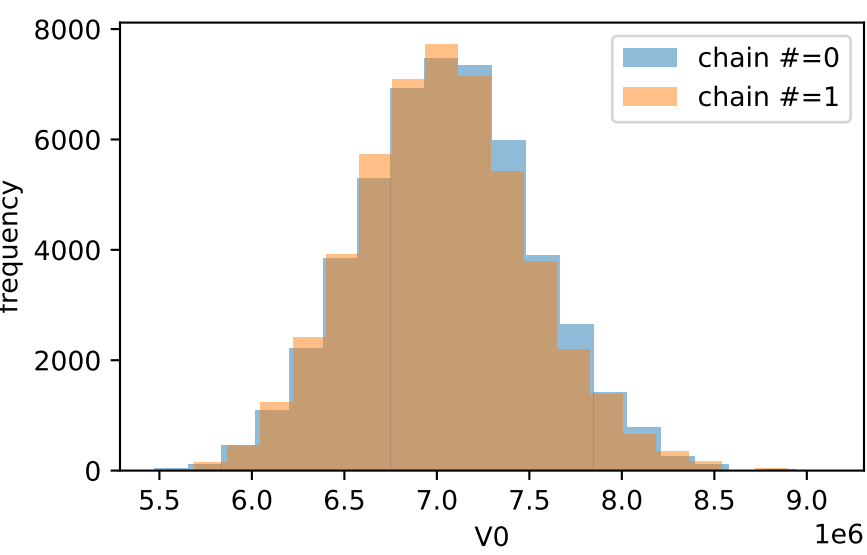
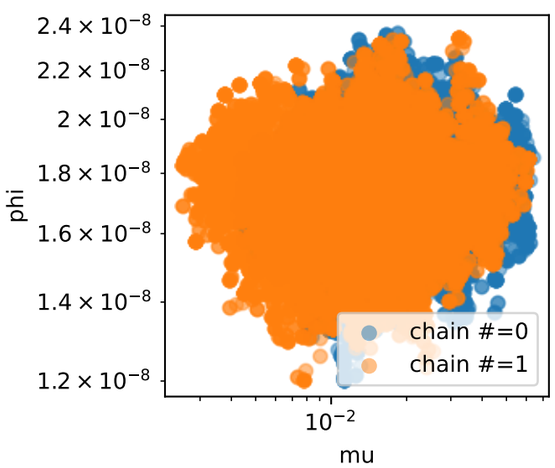
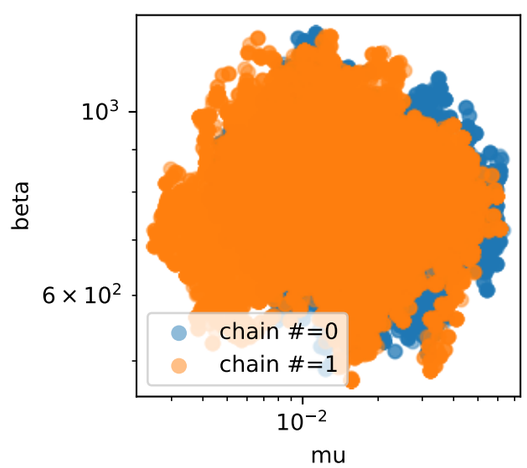
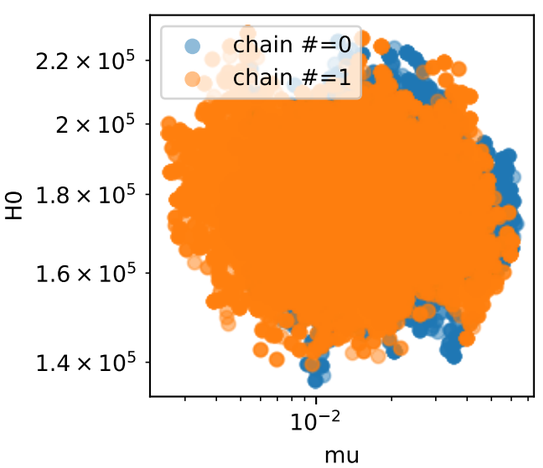
160000
180000
200000
220000
H0

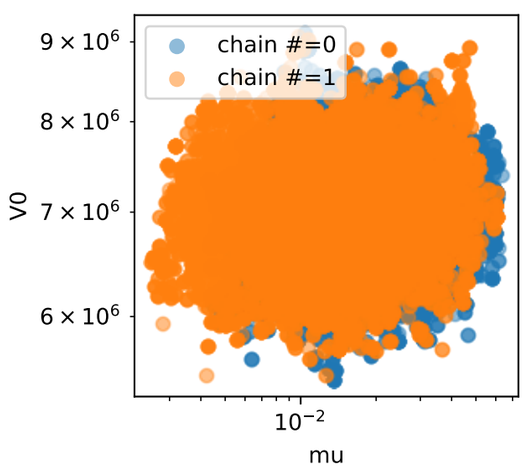

chain #=0
chain #=1
frequency
8000
6000
4000
2000
0
5.5
6.0
6.5
7.0
7.5
8.0
8.5
9.0
V0
1e6

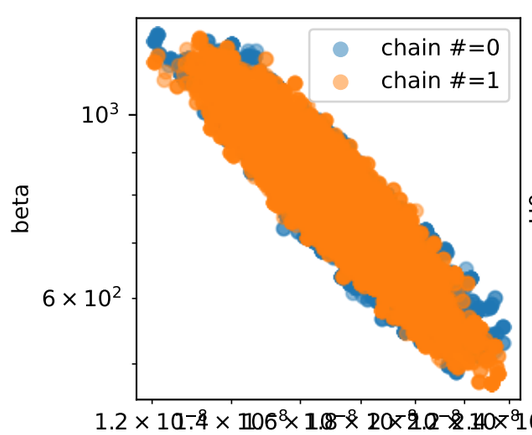
zero_i

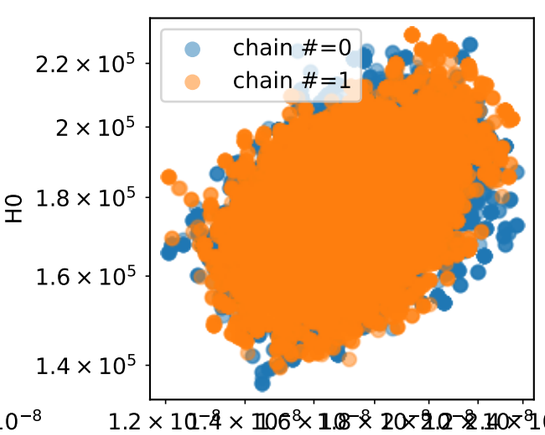

phi
mu
chain #=0
chain #=1

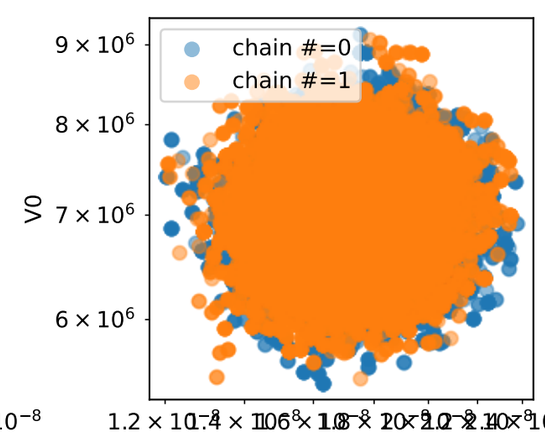

beta
mu
chain #=0
chain #=1

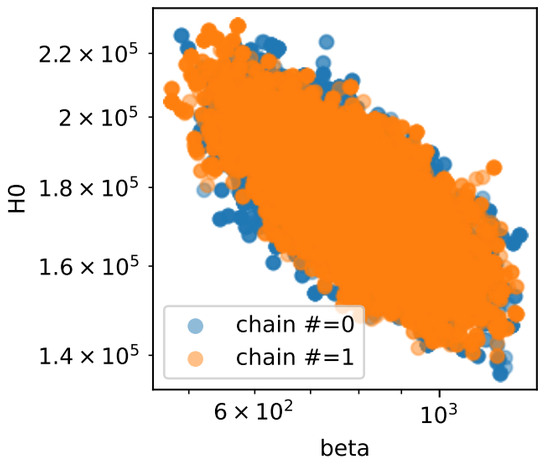

H0
mu
chain #=0
chain #=1

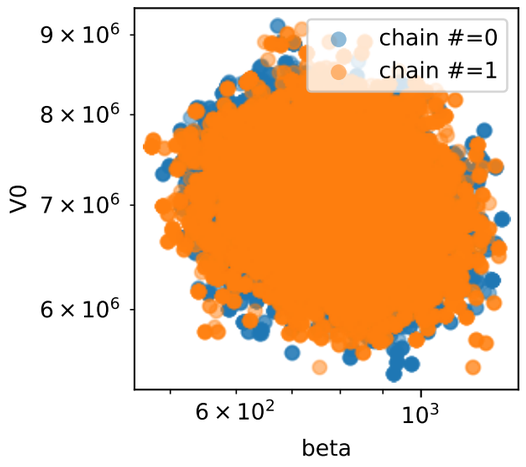

V0
mu
chain #=0
chain #=1

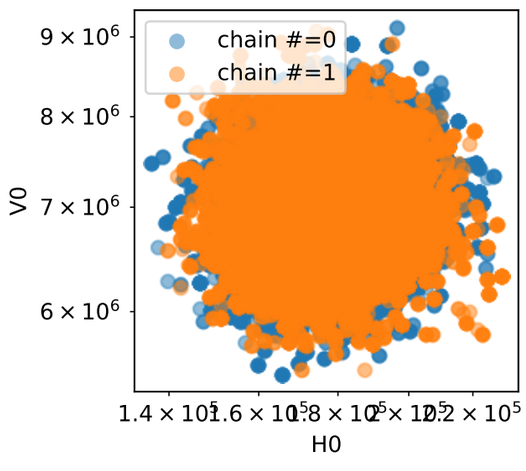

beta
phi
chain #=0
chain #=1

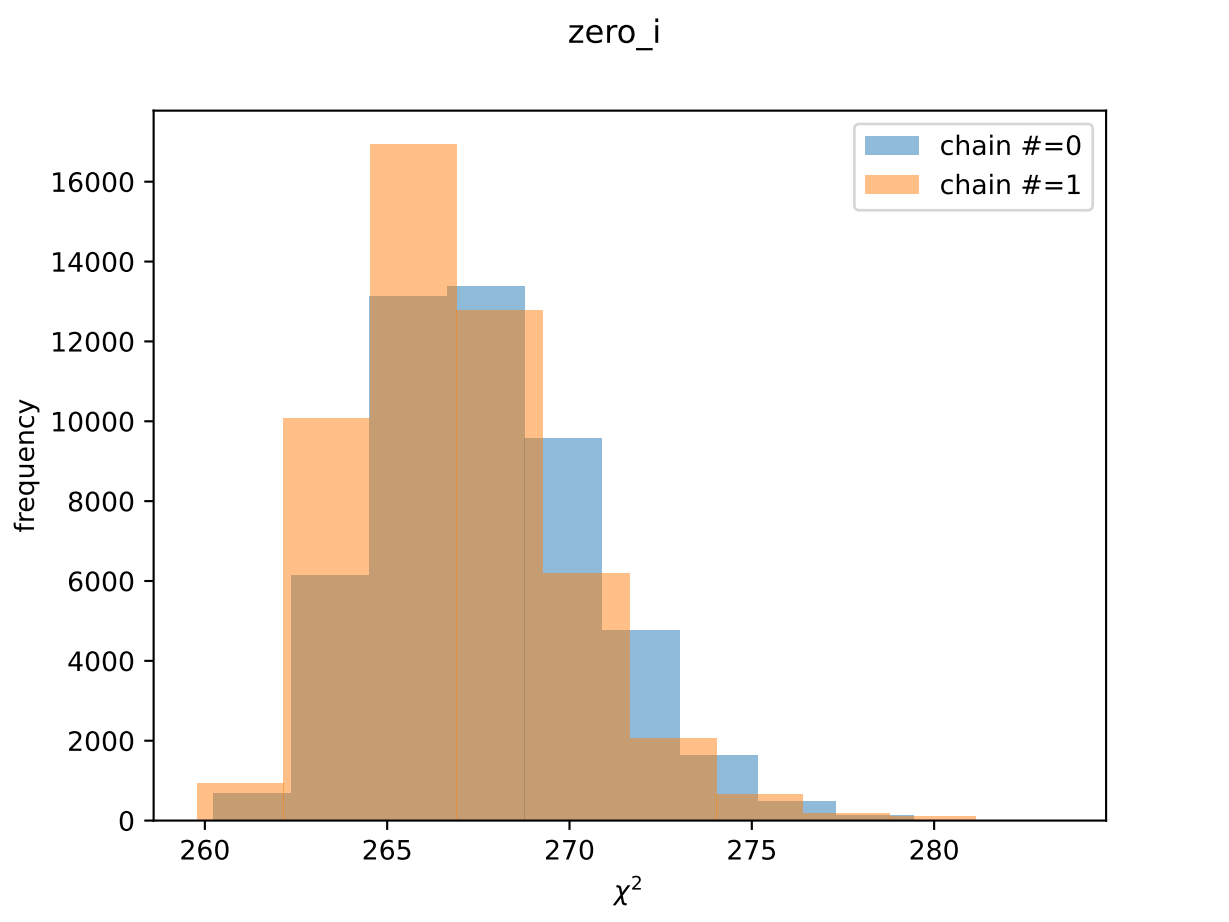

H0
phi
chain #=0
chain #=1

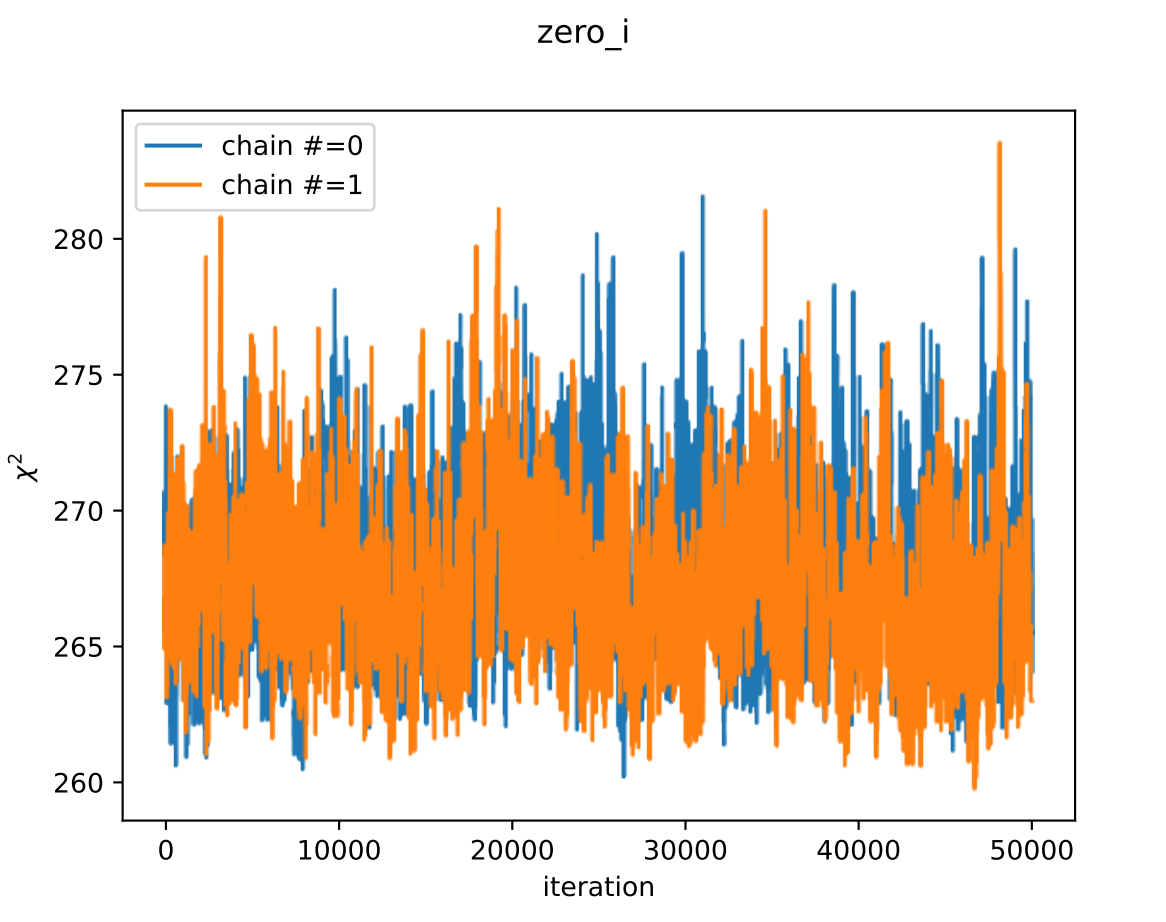

V0
phi
chain #=0
chain #=1


H0
beta
chain #=0
chain #=1

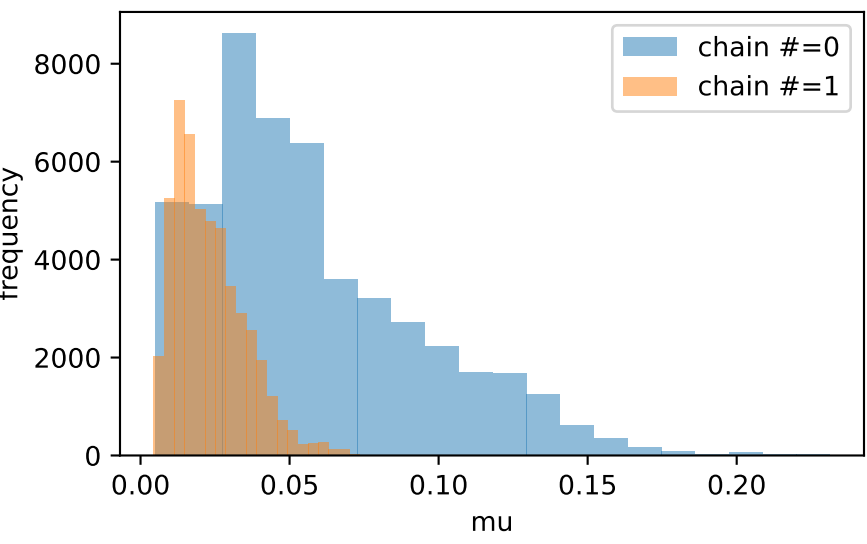

V0
beta
chain #=0
chain #=1


V0
H0
chain #=0
chain #=1


zero_i
chain #=0
chain #=1
16000
14000
12000
10000
8000
6000
4000
2000
0
frequency
260
265
270
275
280
χ^2


zero_i
chain #=0
chain #=1
280
275
270
265
260
χ^2
0
10000
20000
30000
40000
50000
iteration

one_i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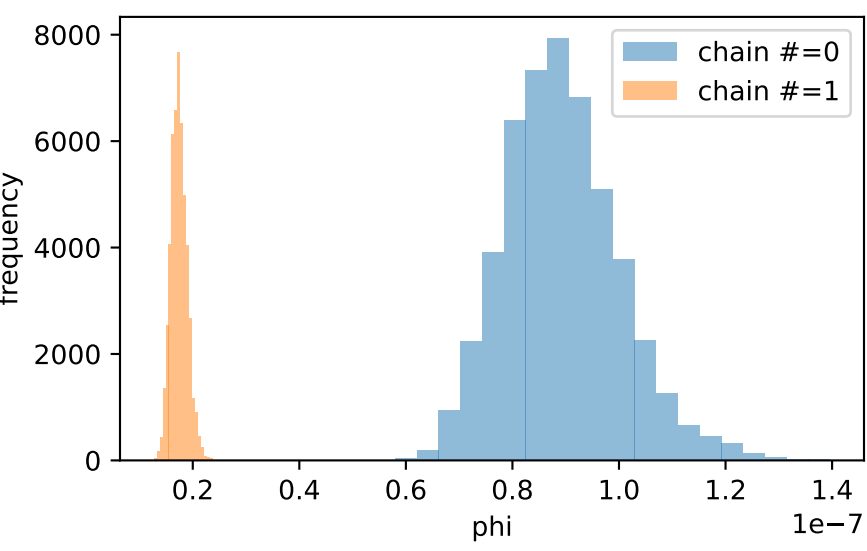
0.10
0.15
0.20
mu


chain #=0
chain #=1
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6000
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0.2
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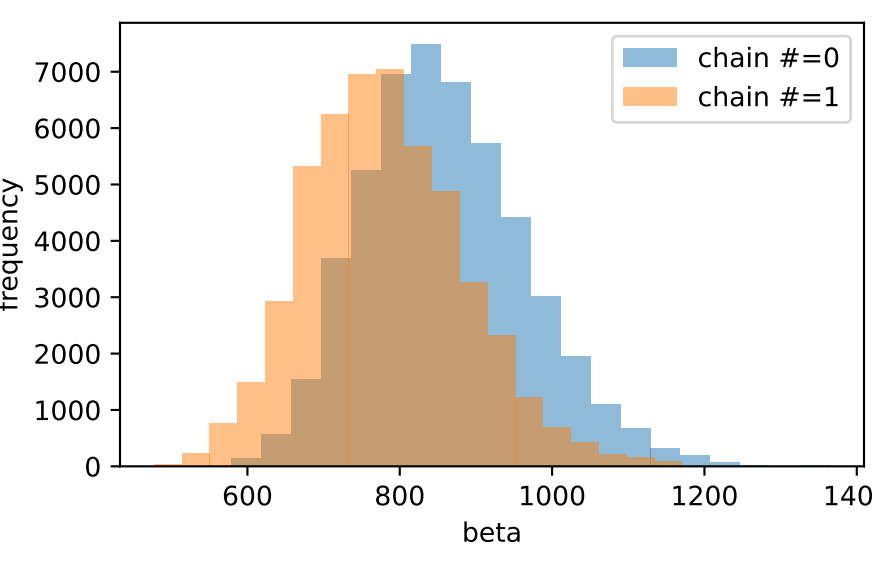
0.6
0.8
1.0
1.2
1.4
phi
1e−7


chain #=0
chain #=1
frequency
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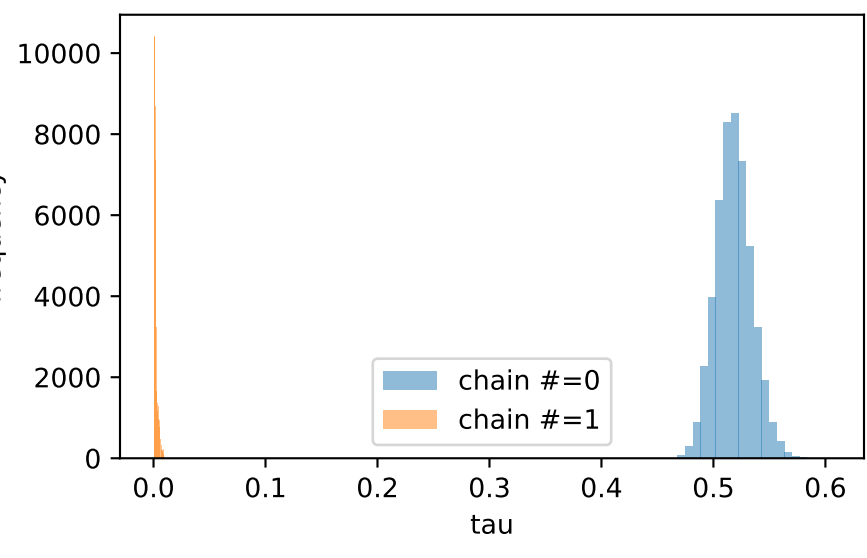
1000
0
600
800
1000
1200
1400
beta


chain #=0
chain #=1
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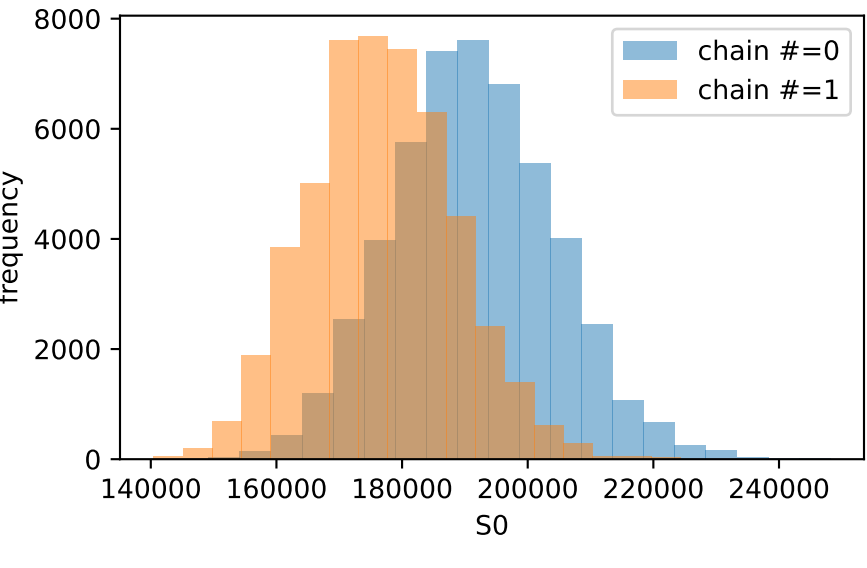
6000
4000
2000
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
tau


chain #=0
chain #=1
frequency
8000
6000
4000
2000
0
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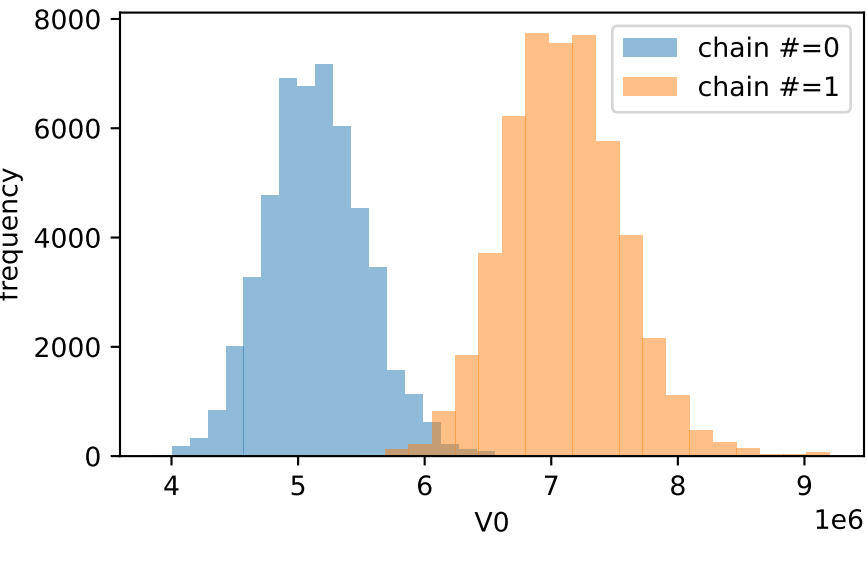
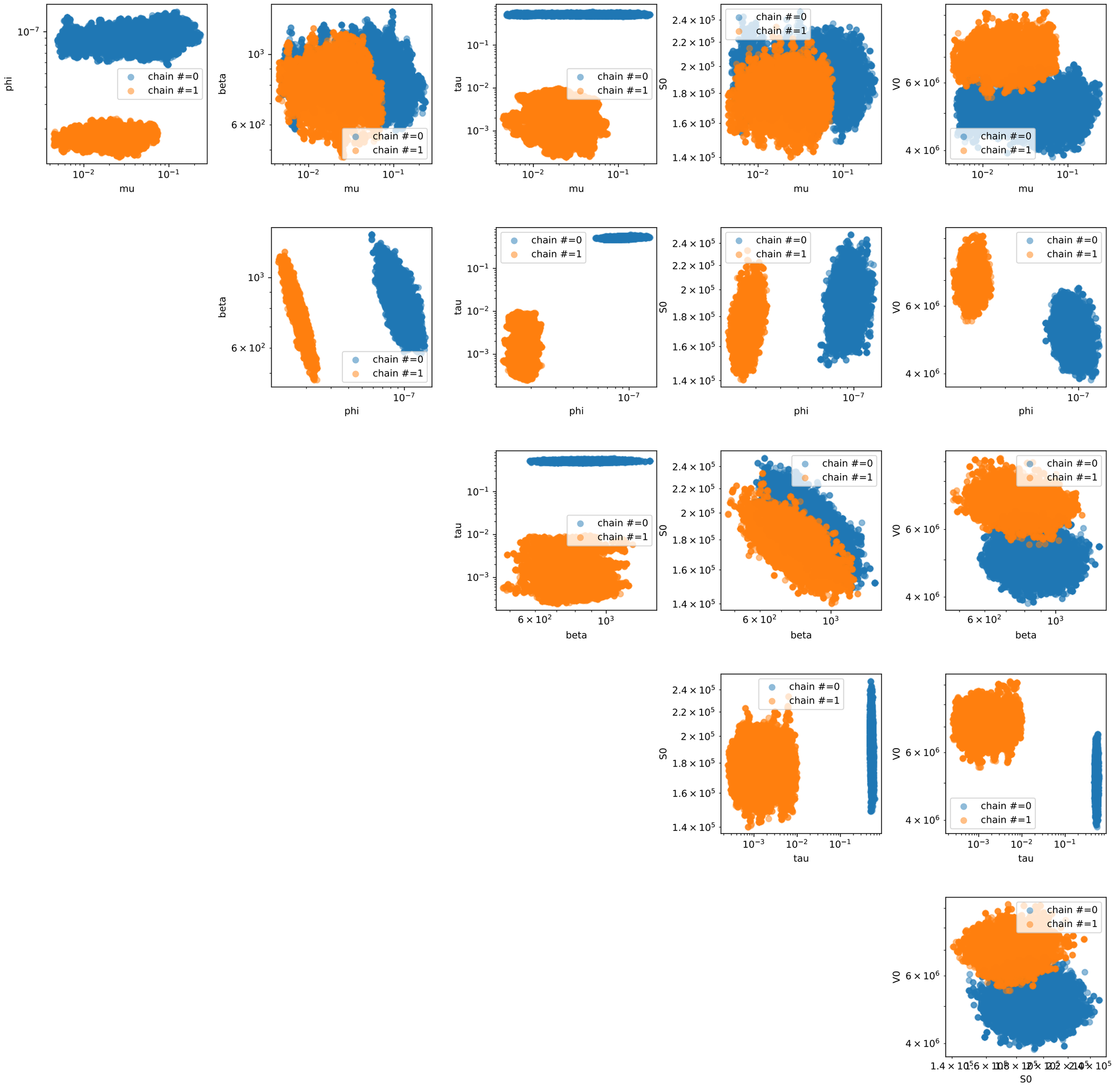
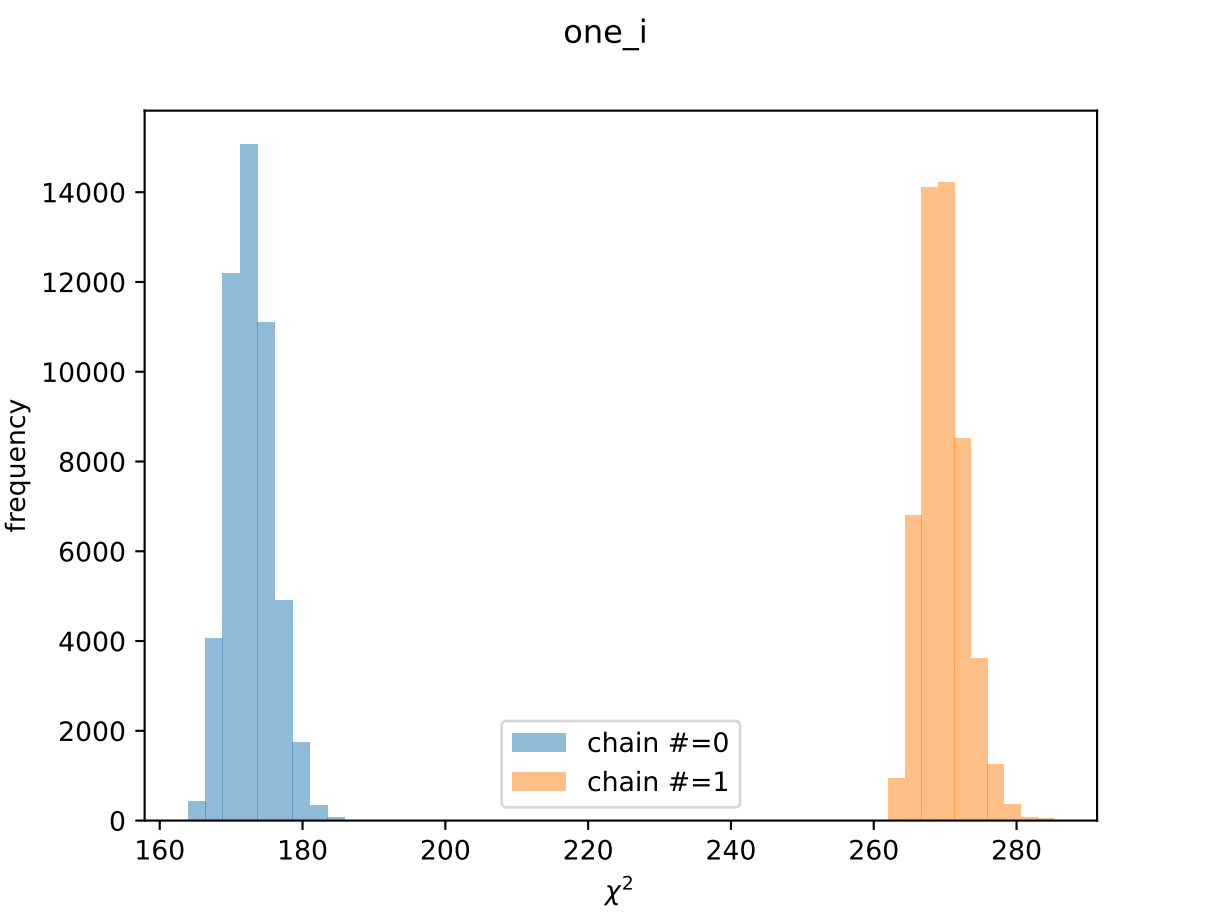
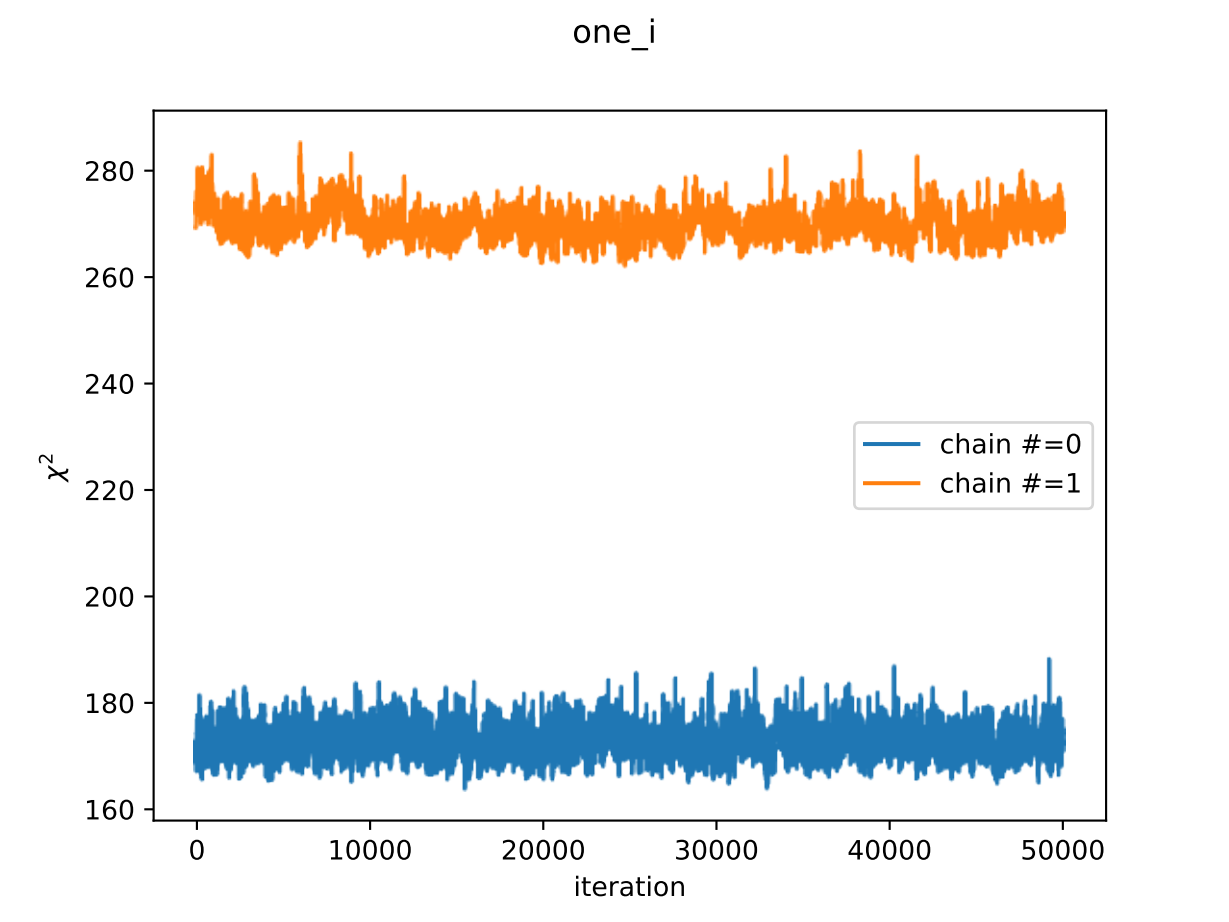
160000
180000
200000
220000
240000
S0


chain #=0
chain #=1
frequency
8000
6000
4000
2000
0
4
5
6
7
8
9
V0
1e6

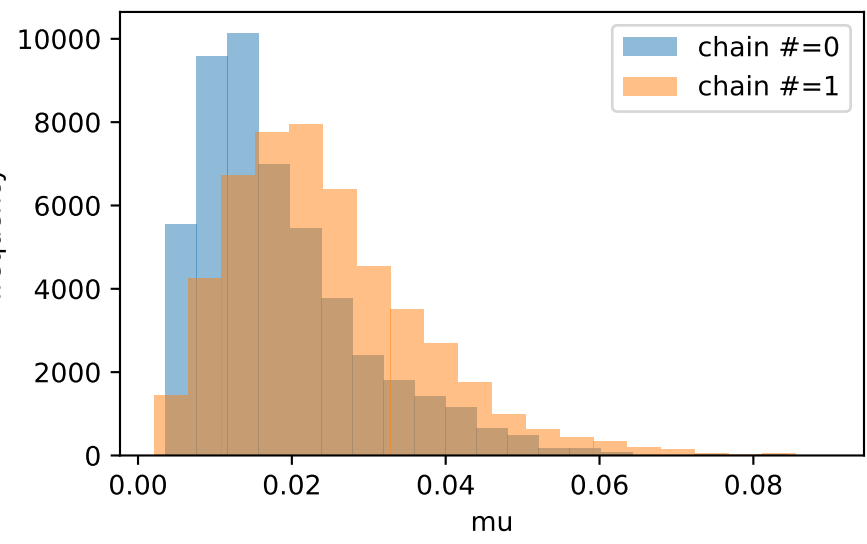
one_i




one_i
frequency
14000
12000
10000
8000
6000
4000
2000
0
160
180
200
220
240
260
280
χ^2
chain #=0
chain #=1


one_i
280
260
240
220
200
180
160
χ^2
0
10000
20000
30000
40000
50000
iteration
chain #=0
chain #=1

two_i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chain #=1
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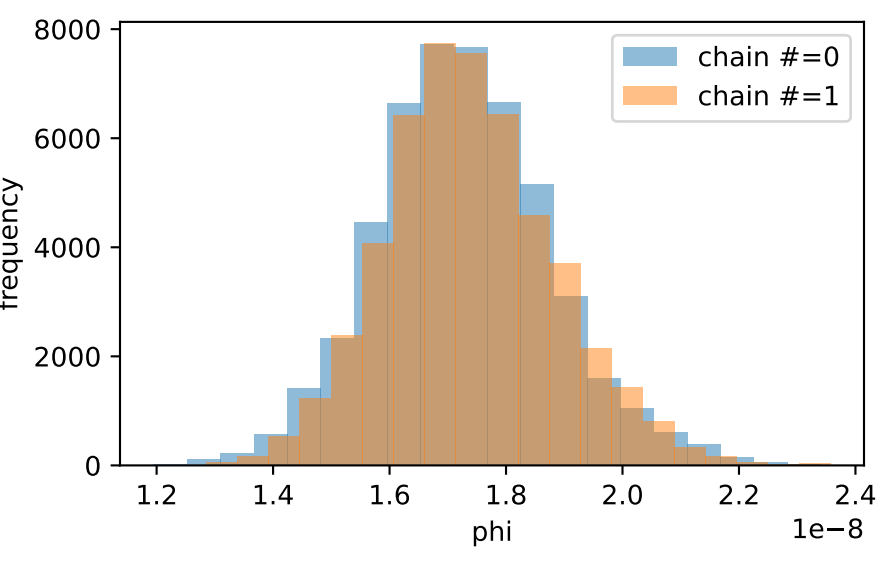
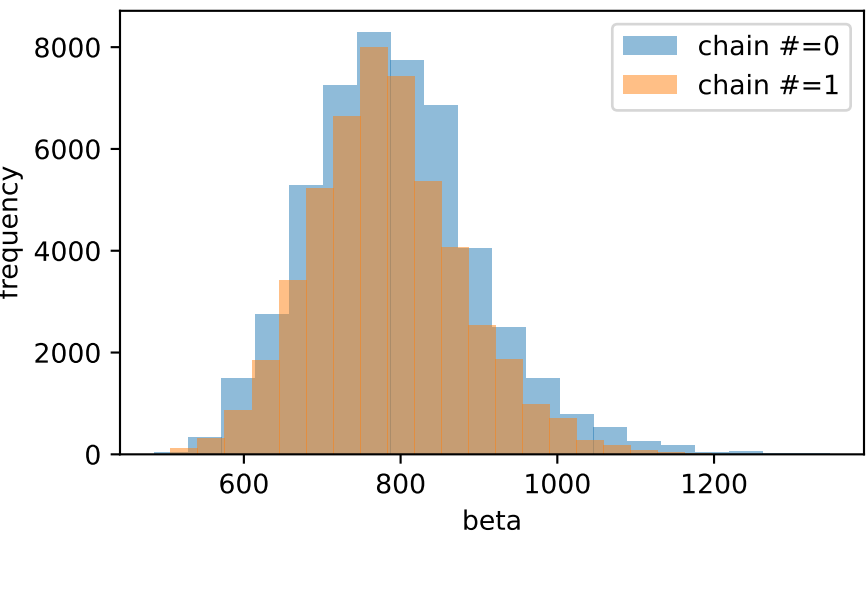
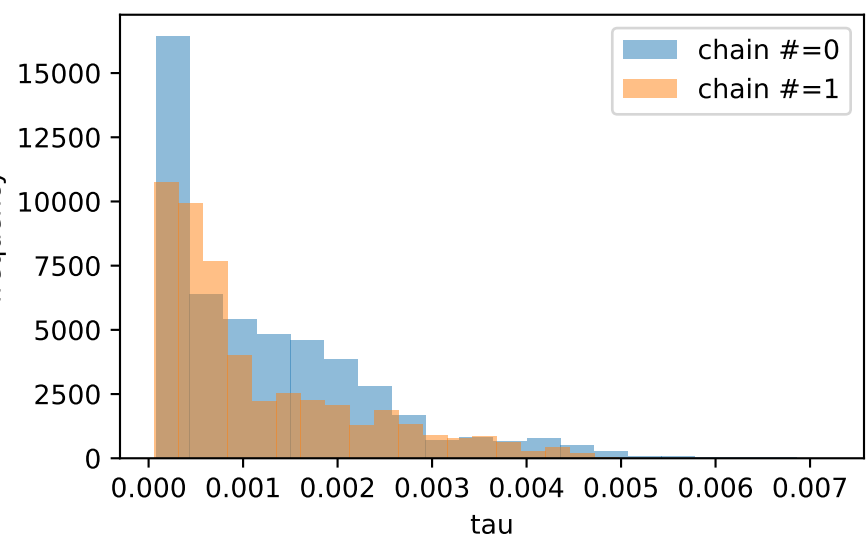
6000
4000
2000
0
0.00
0.02
0.04
0.06
0.08
mu


chain #=0
chain #=1
8000
6000
4000
2000
0
frequency
1.2
1.4
1.6
1.8
2.0
2.2
2.4
phi
1e−8


chain #=0
chain #=1
8000
6000
4000
2000
0
frequency
600
800
1000
1200
beta


chain #=0
chain #=1
15000
12500
10000
7500
5000
2500
0
0.000
0.001
0.002
0.003
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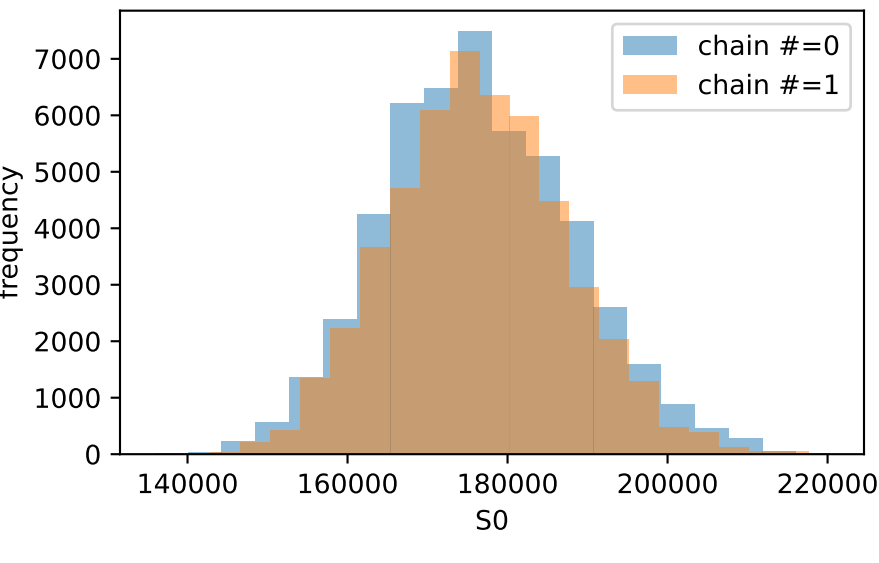
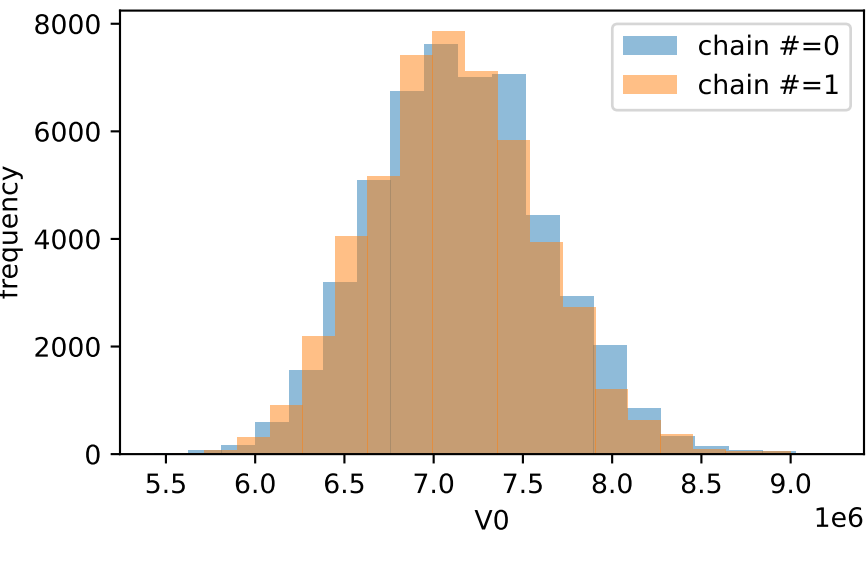
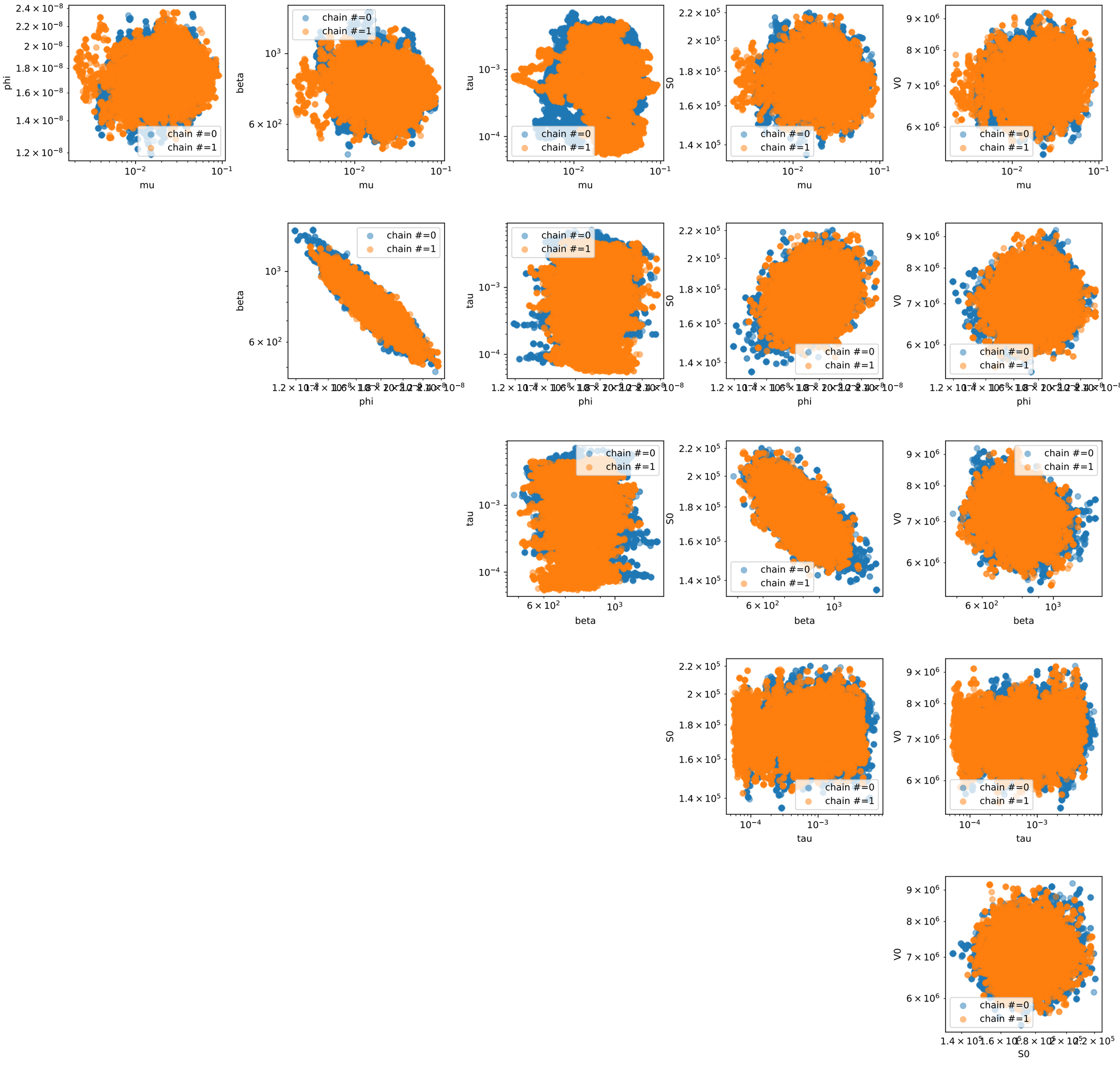
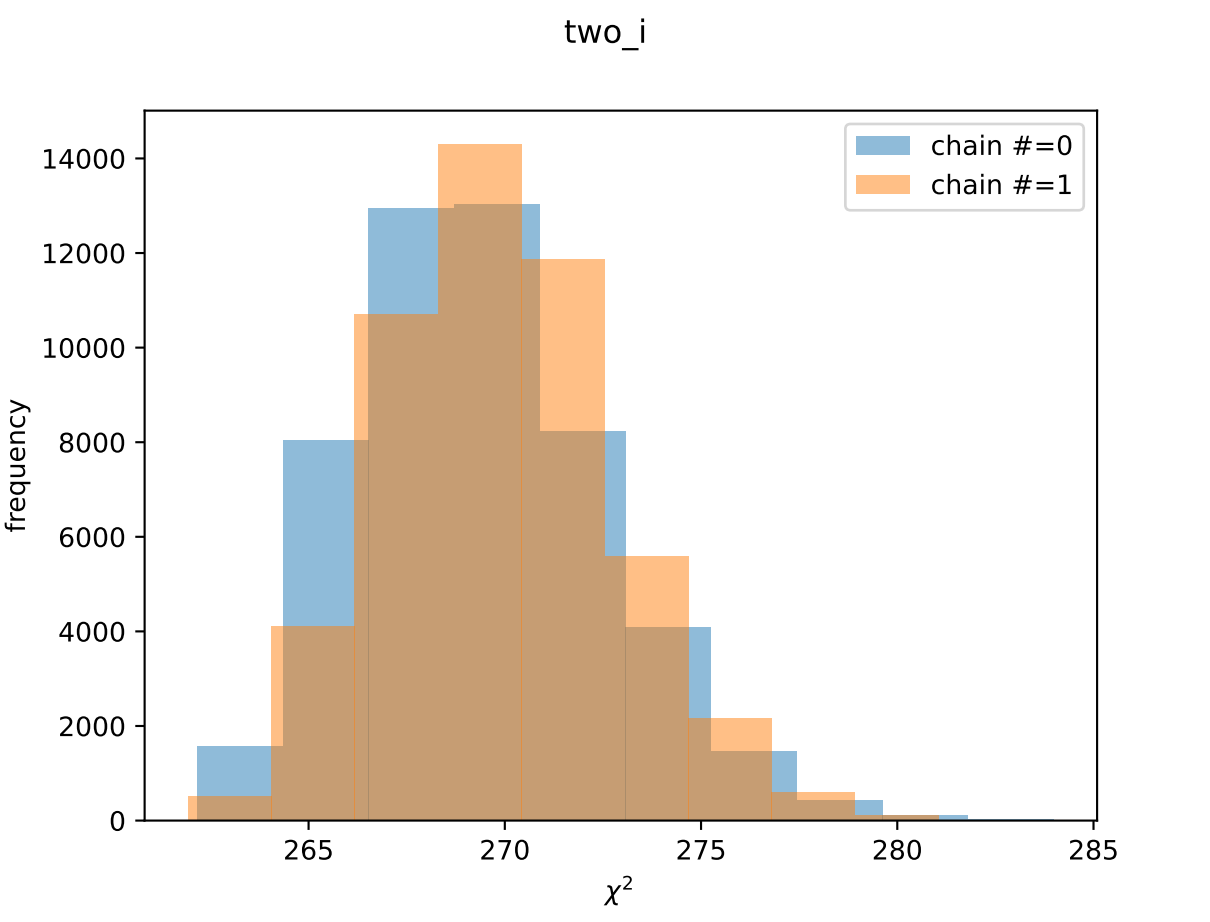
0.006
0.007
tau

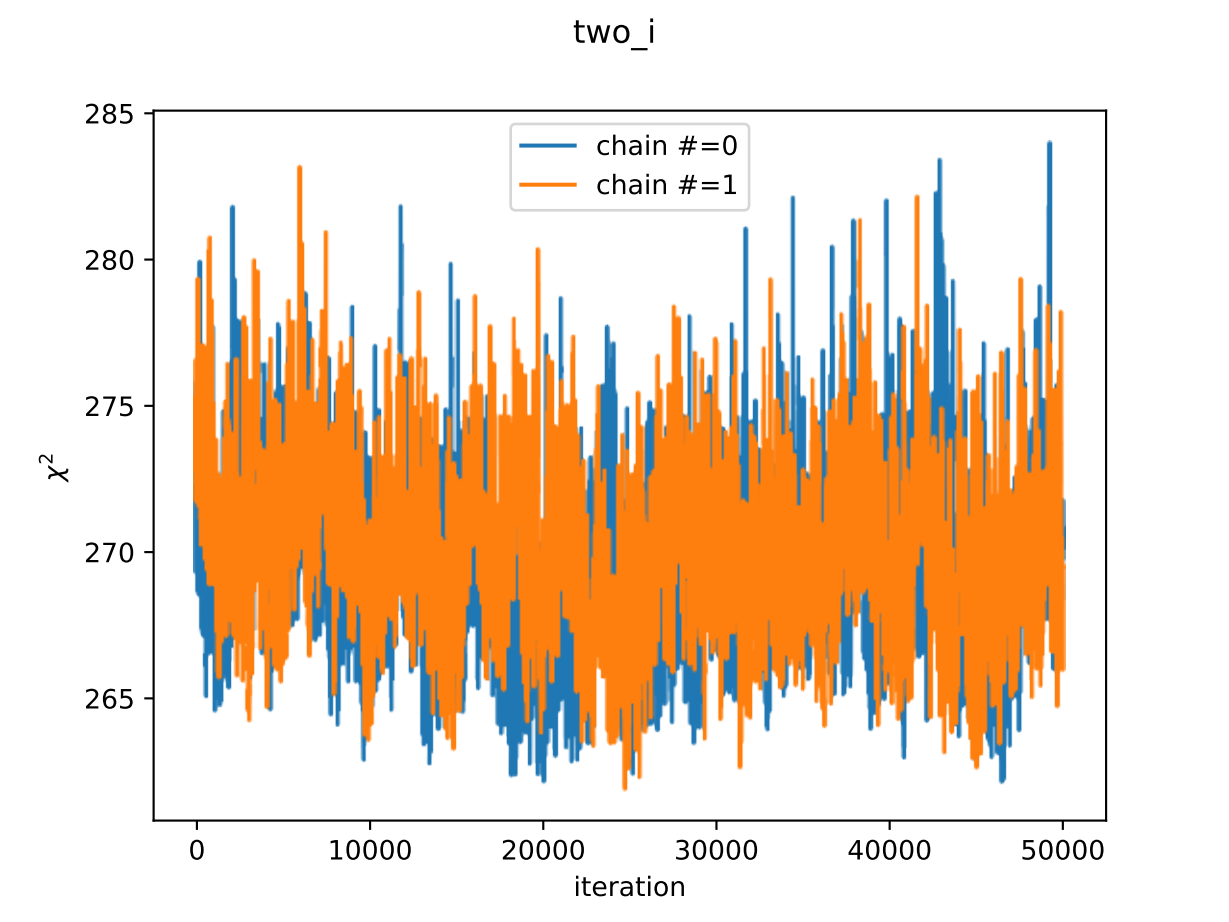

chain #=0
chain #=1
7000
6000
5000
4000
3000
2000
1000
0
frequency
140000
160000
180000
200000
220000
S0


chain #=0
chain #=1
8000
6000
4000
2000
0
frequency
5.5
6.0
6.5
7.0
7.5
8.0
8.5
9.0
V0
1e6

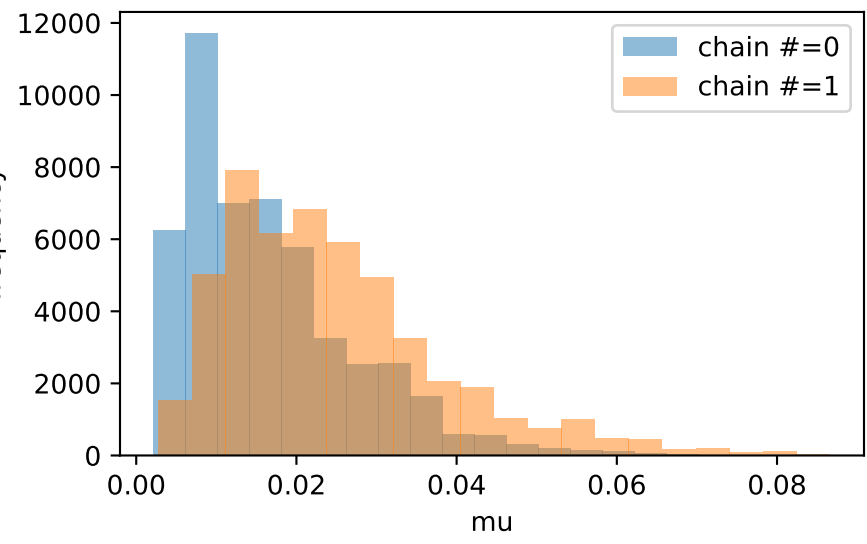
two_i




two_i
chain #=0
chain #=1
frequency
0
2000
4000
6000
8000
10000
12000
14000
265
270
275
280
285
χ^2


two_i
chain #=0
chain #=1
285
280
275
270
265
χ^2
0
10000
20000
30000
40000
50000
iteration

three_i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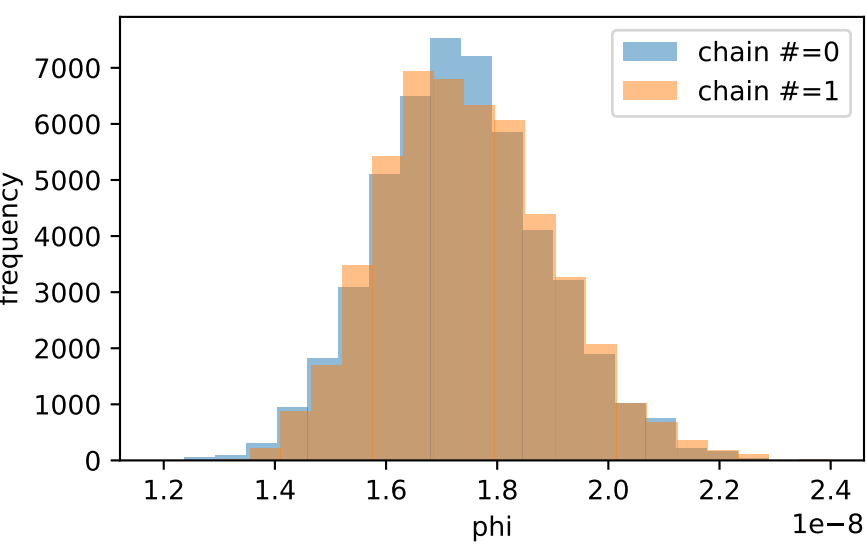
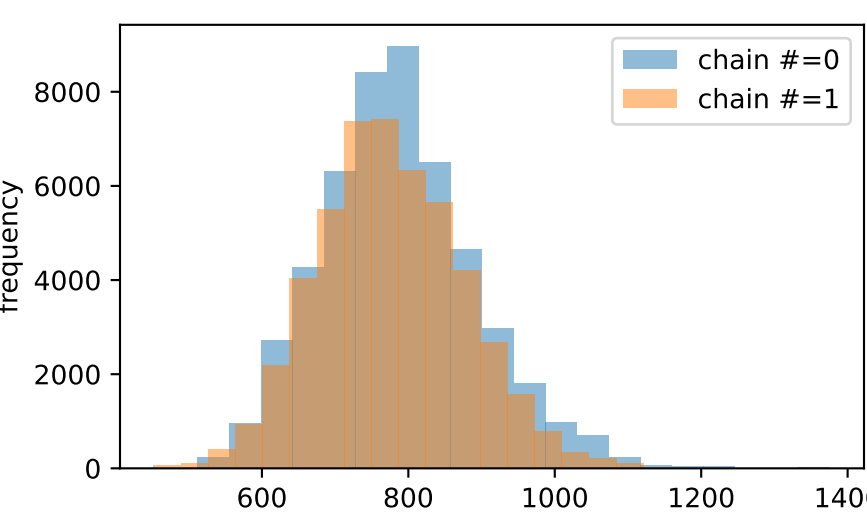
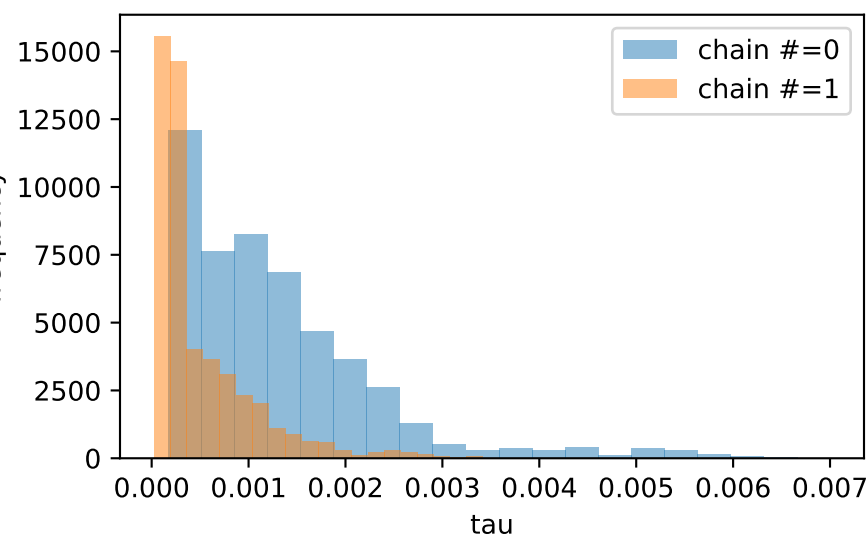
chain #=1
12000
10000
8000
6000
4000
2000
0
0.00
0.02
0.04
0.06
0.08
mu


chain #=0
chain #=1
frequency
7000
6000
5000
4000
3000
2000
1000
0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
1e−8
phi


chain #=0
chain #=1
frequency
8000
6000
4000
2000
0
600
800
1000
1200
1400
beta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chain #=1
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12500
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7500
5000
2500
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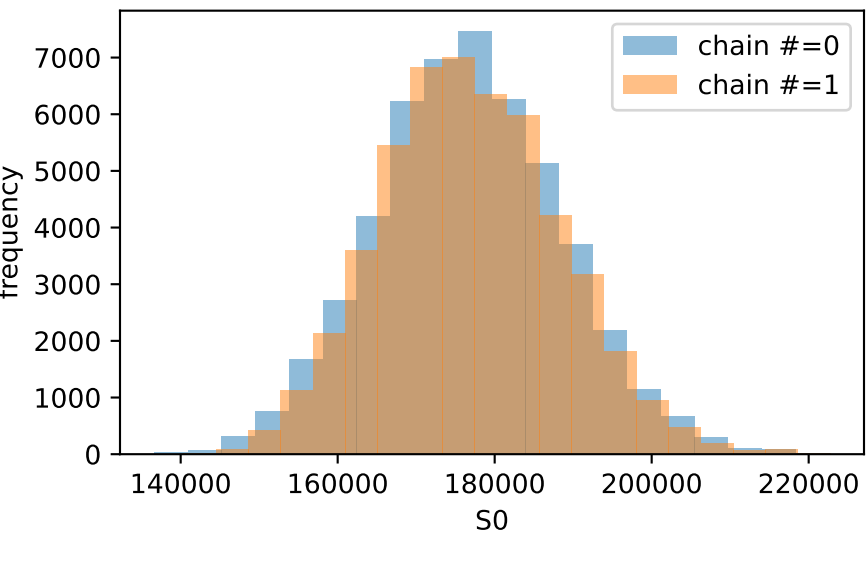
0.000
0.001
0.002
0.003
0.004
0.005
0.006
0.007
tau


chain #=0
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1000
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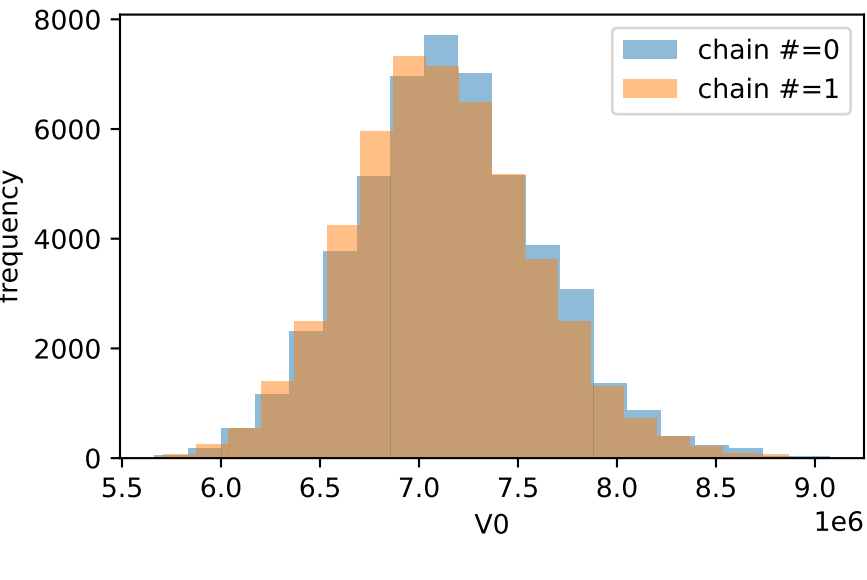
160000
180000
200000
220000
S0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chain #=1
frequency
8000
6000
4000
2000
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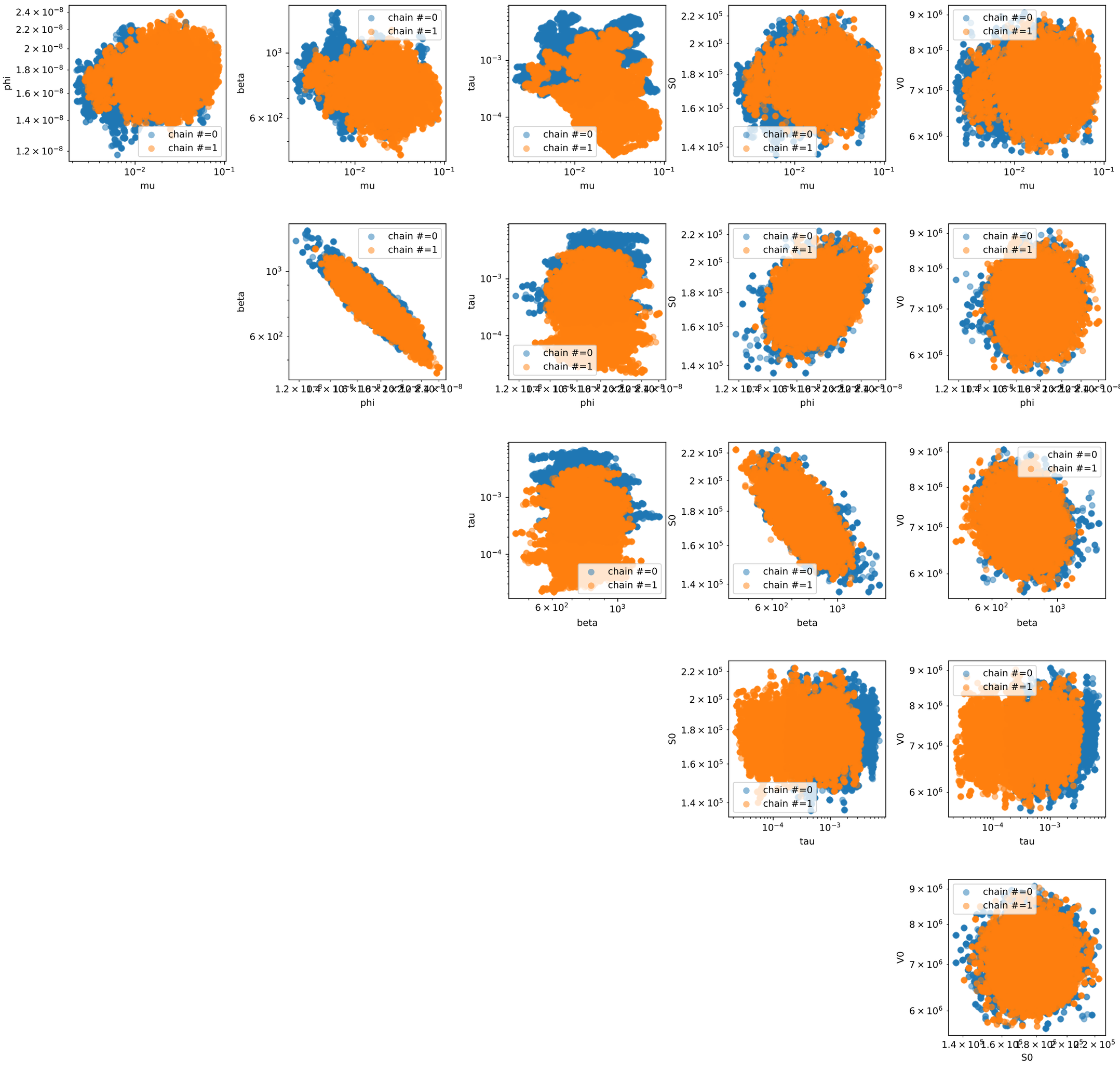
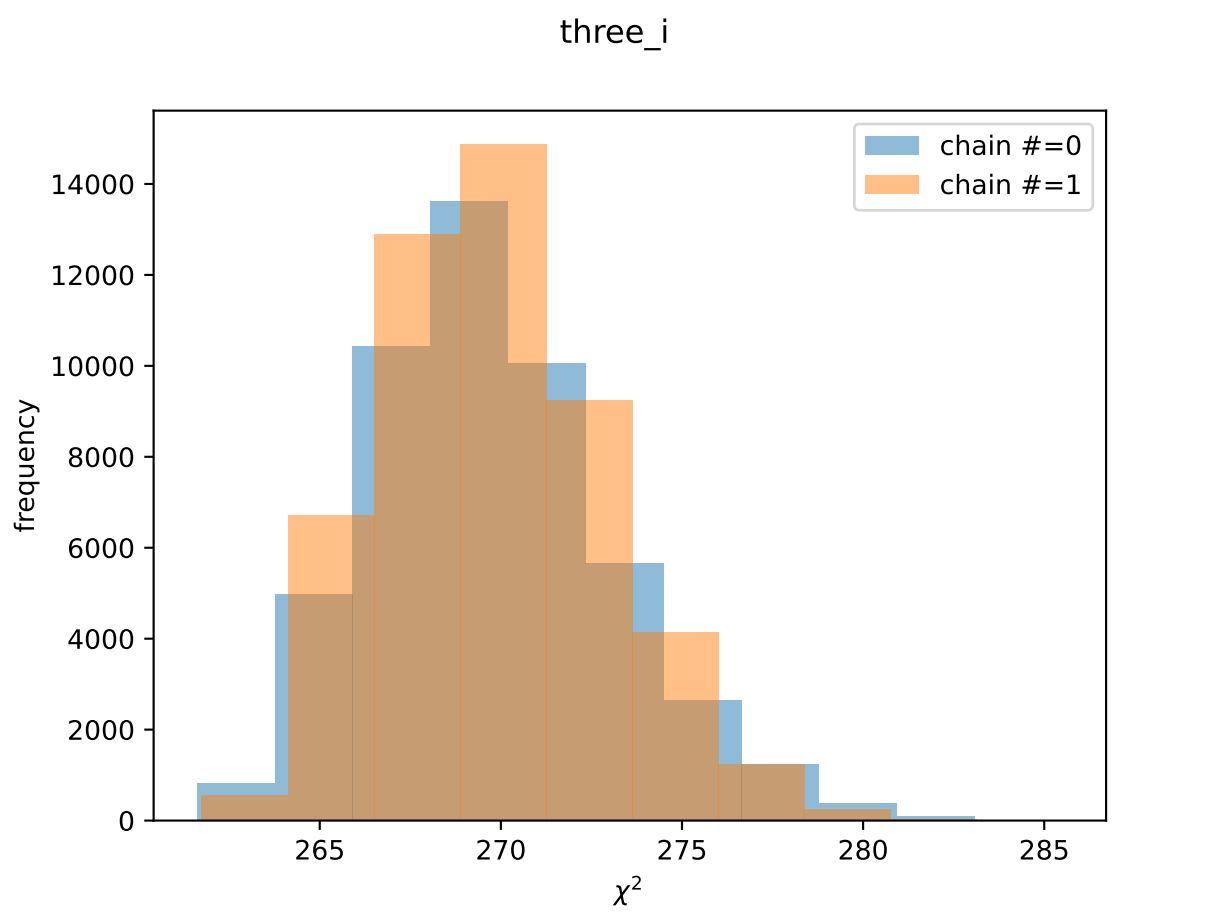
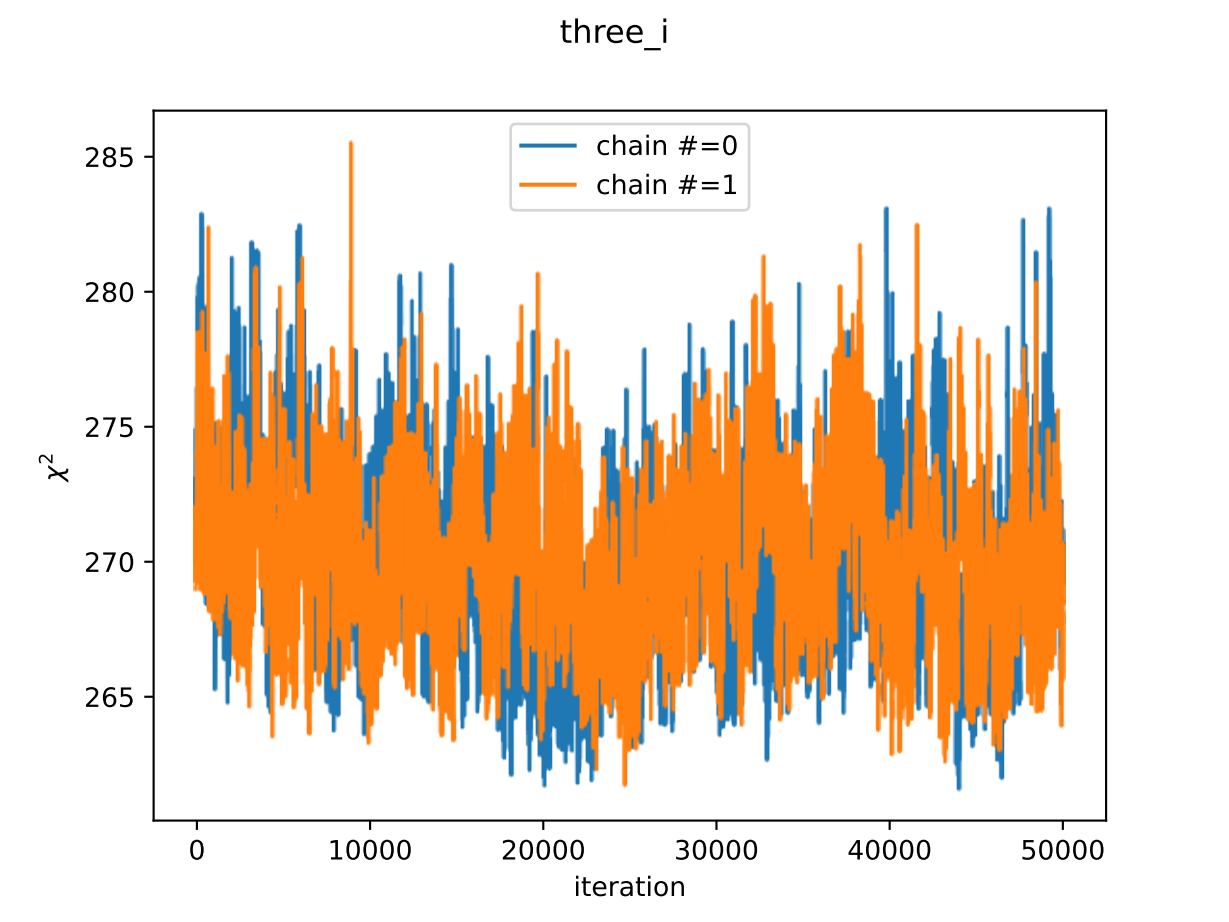
6.0
6.5
7.0
7.5
8.0
8.5
9.0
1e6
V0

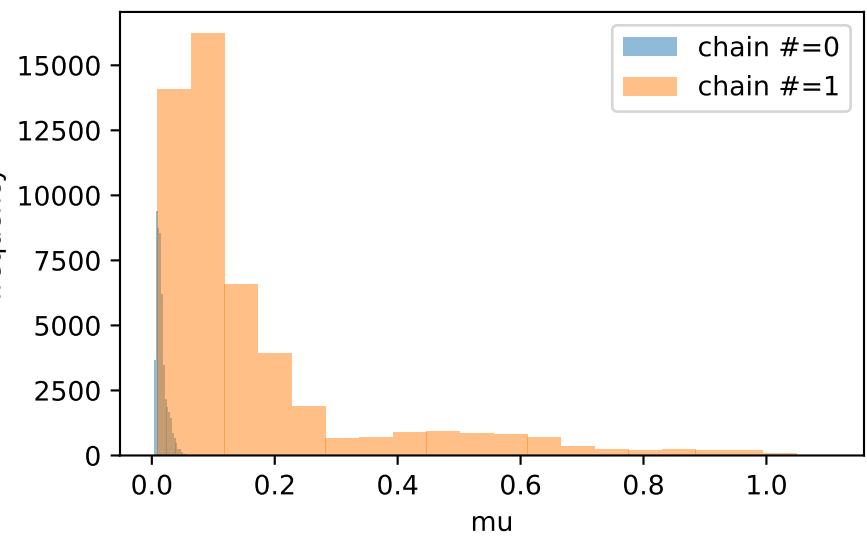
three_i




three_i
chain #=0
chain #=1
14000
12000
10000
8000
6000
4000
2000
0
frequency
265
270
275
280
285
χ^2


three_i
chain #=0
chain #=1
285
280
275
270
265
χ^2
0
10000
20000
30000
40000
50000
iteration

four_i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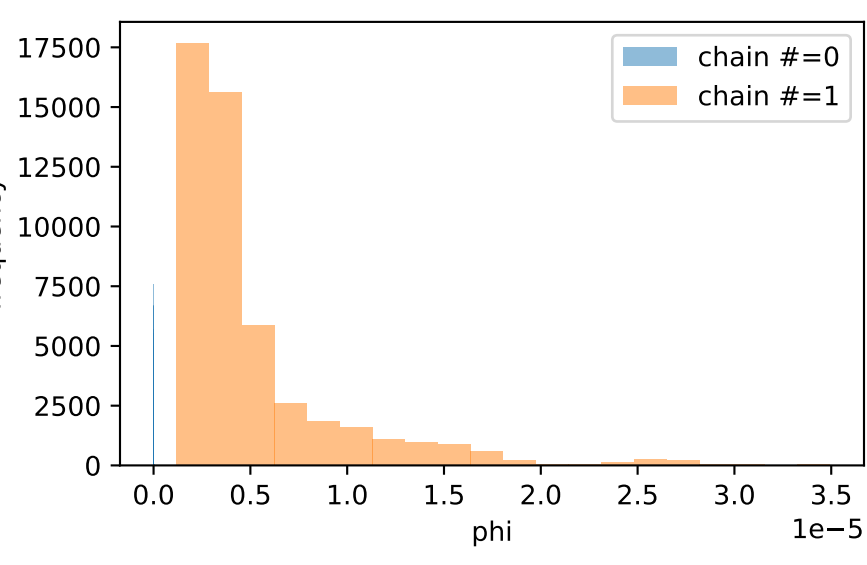
0.4
0.6
0.8
1.0
mu


chain #=0
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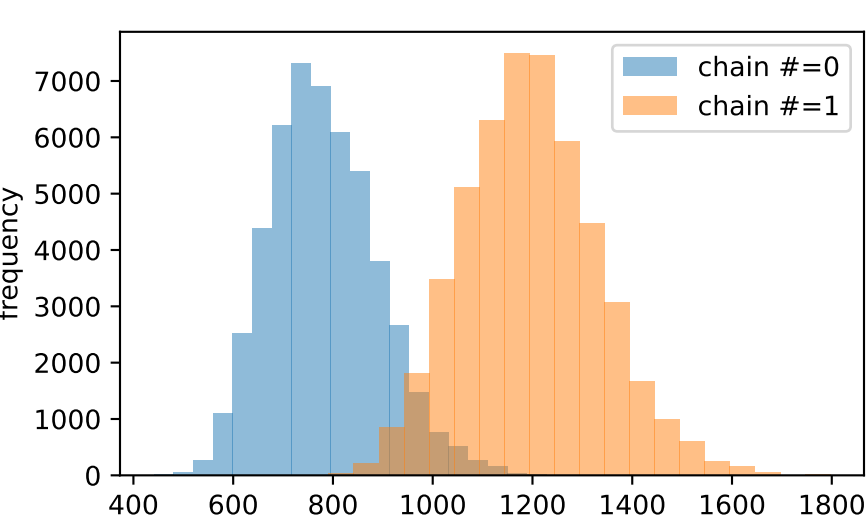
0.5
1.0
1.5
2.0
2.5
3.0
3.5
phi
1e−5


chain #=0
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7000
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1000
0
frequency
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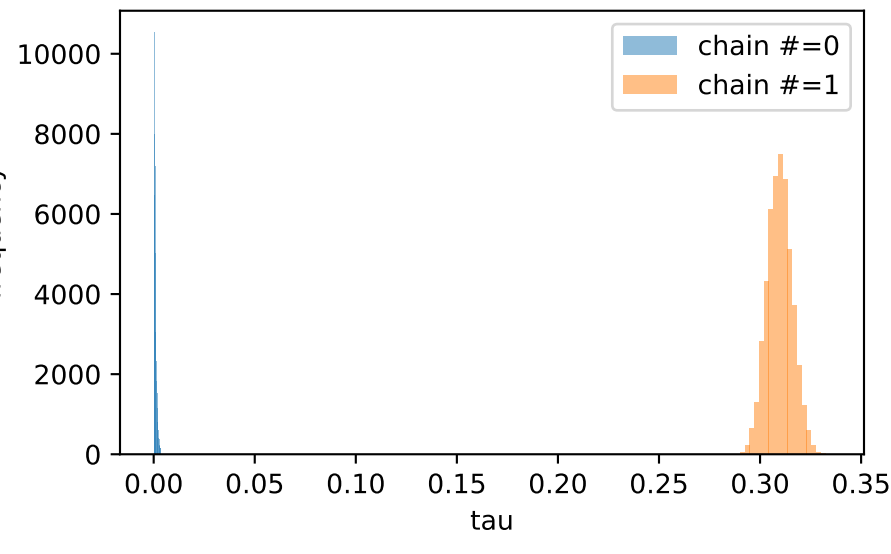
600
800
1000
1200
1400
1600
1800
beta


chain #=0
chain #=1
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8000
6000
4000
2000
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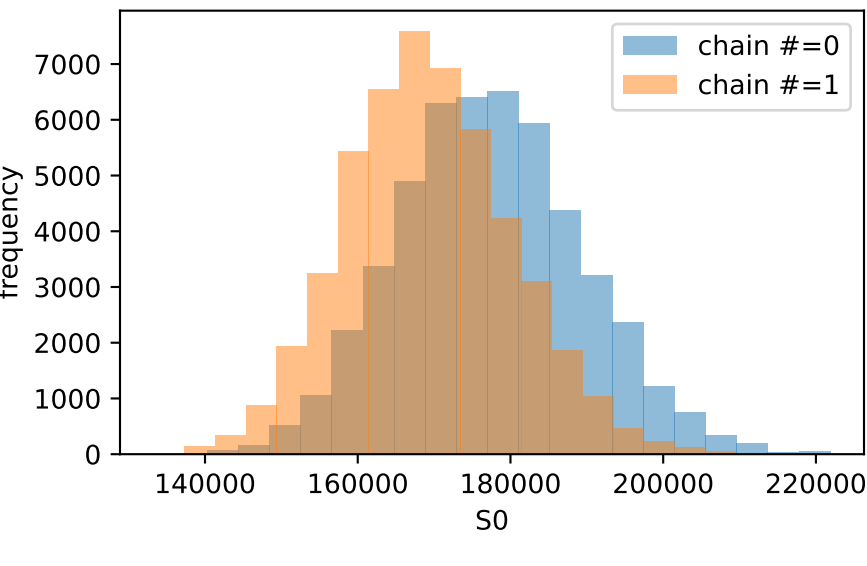
0.05
0.10
0.15
0.20
0.25
0.30
0.35
tau


chain #=0
chain #=1
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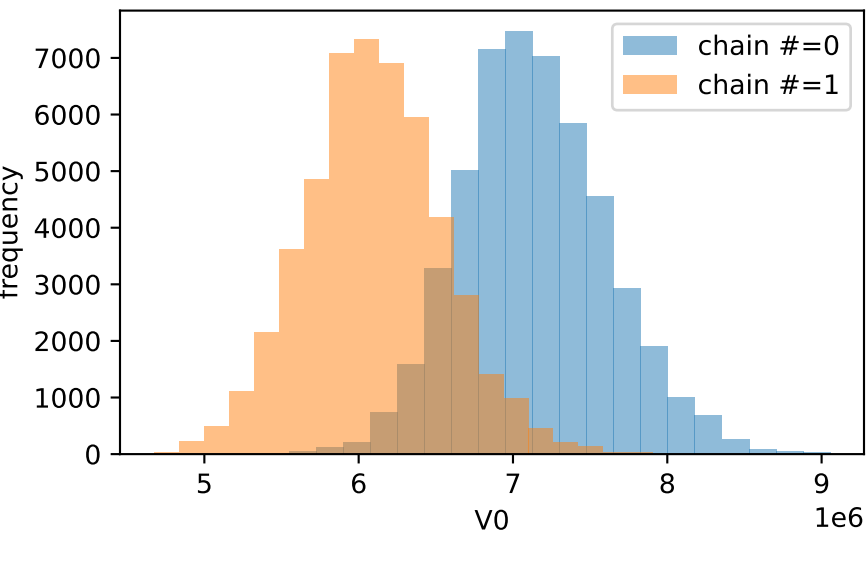
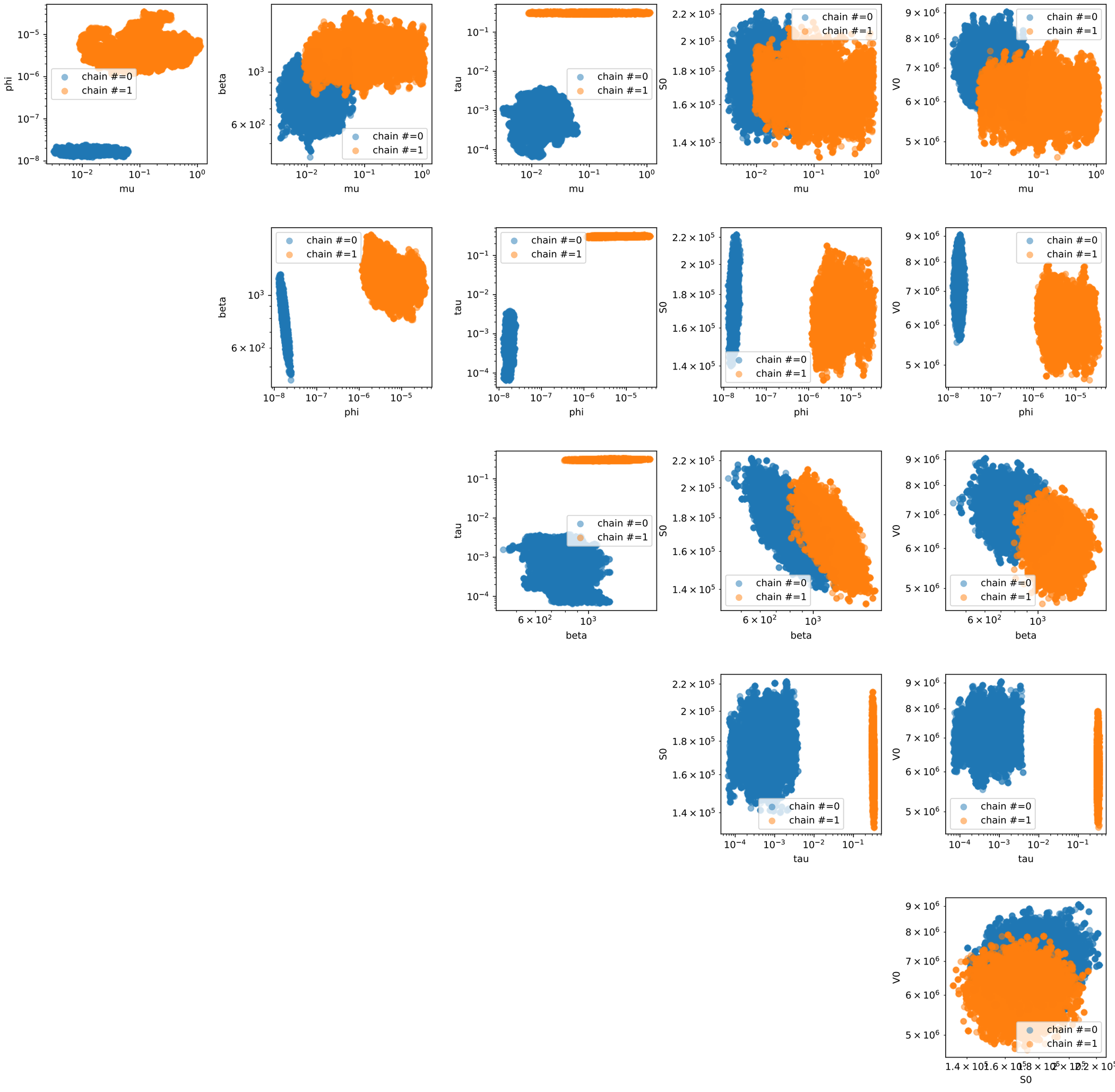
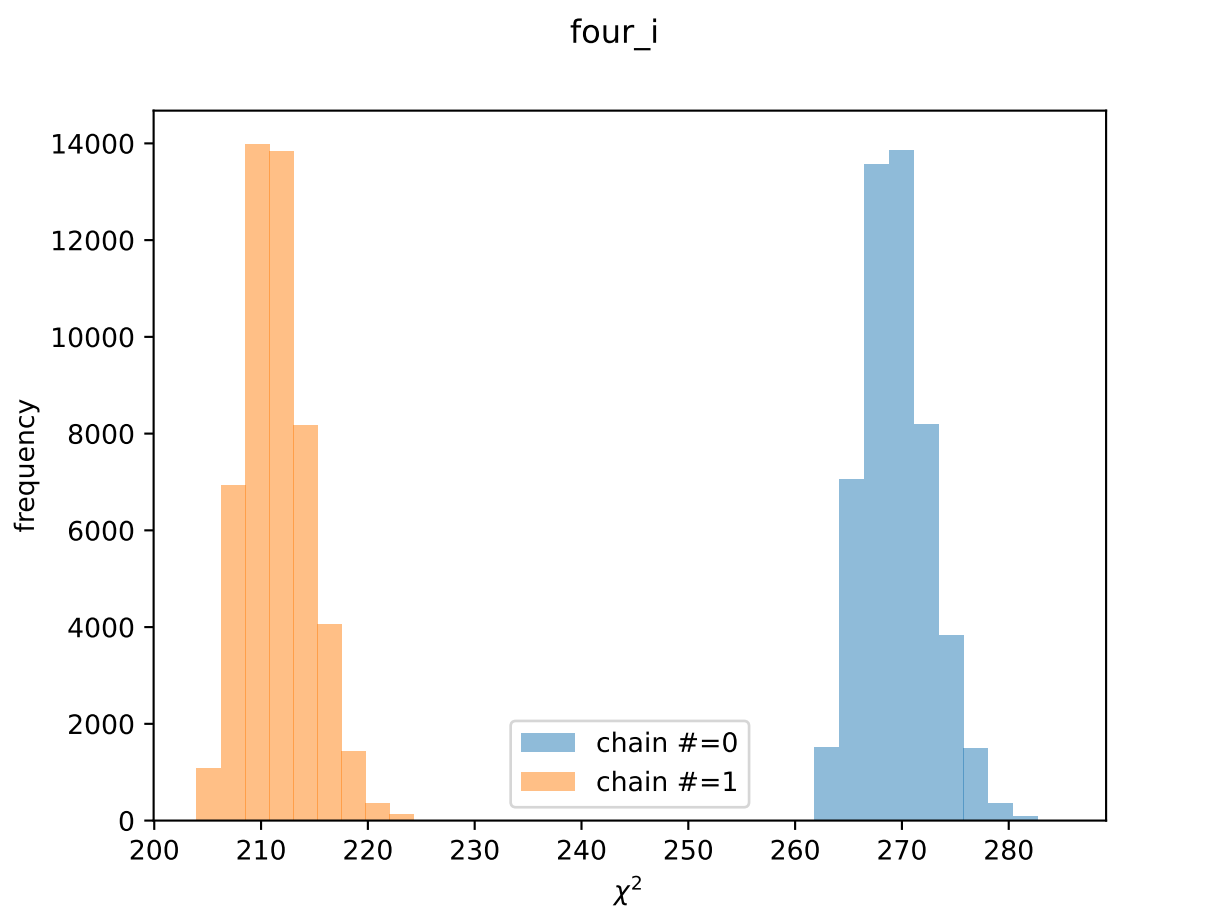
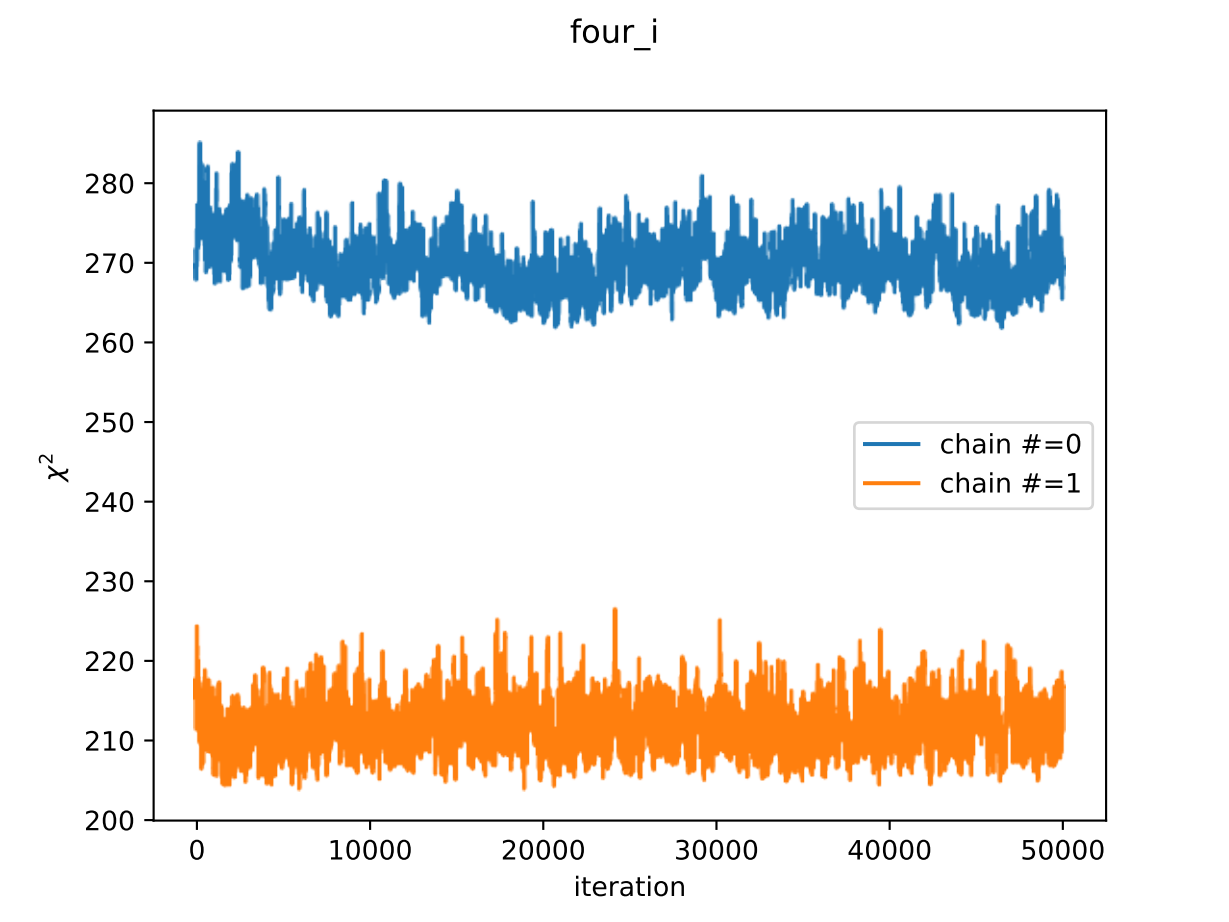
3000
2000
1000
0
frequency
140000
160000
180000
200000
220000
S0


chain #=0
chain #=1
7000
6000
5000
4000
3000
2000
1000
0
frequency
5
6
7
8
9
V0
1e6

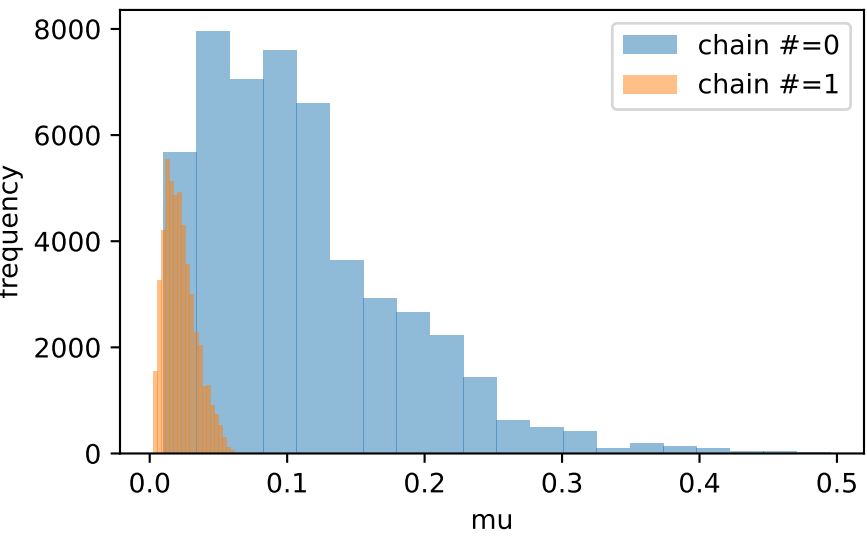
four_i




four_i
frequency
14000
12000
10000
8000
6000
4000
2000
0
200
210
220
230
240
250
260
270
280
χ^2
chain #=0
chain #=1


four_i
280
270
260
250
240
230
220
210
200
χ^2
0
10000
20000
30000
40000
50000
iteration
chain #=0
chain #=1

five_i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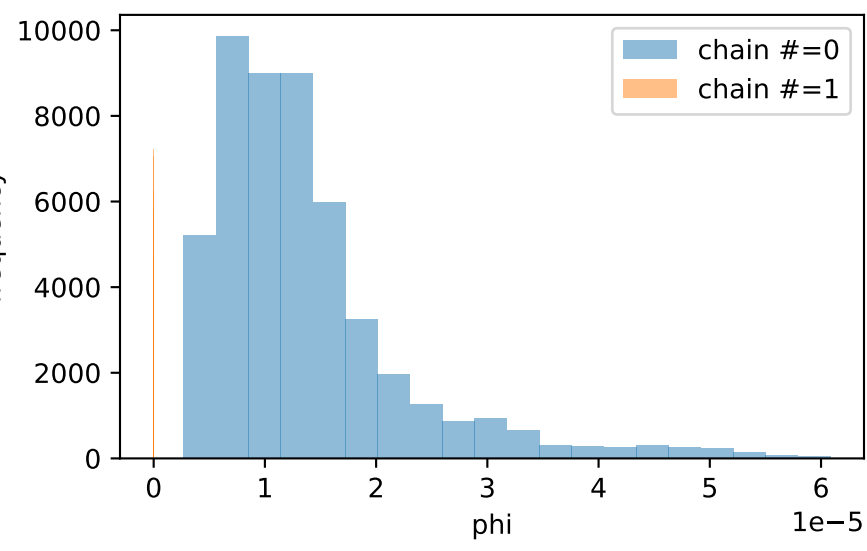
chain #=1
frequency
mu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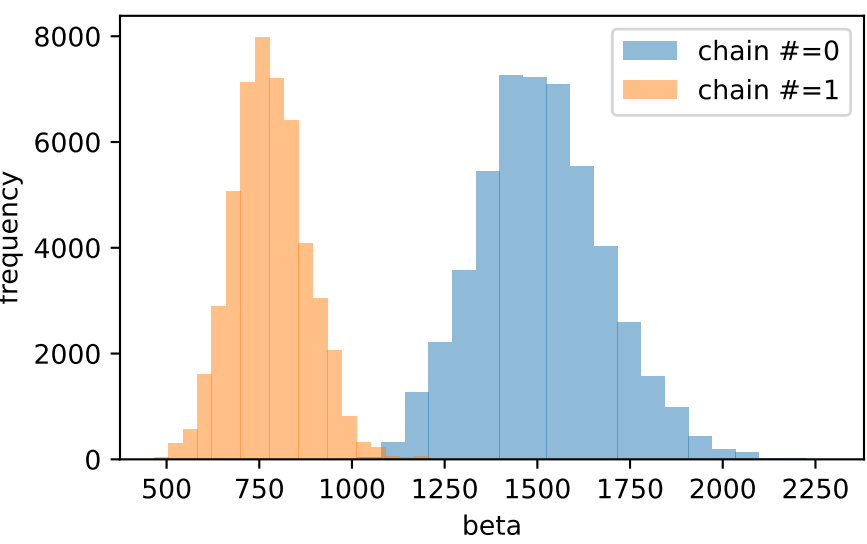
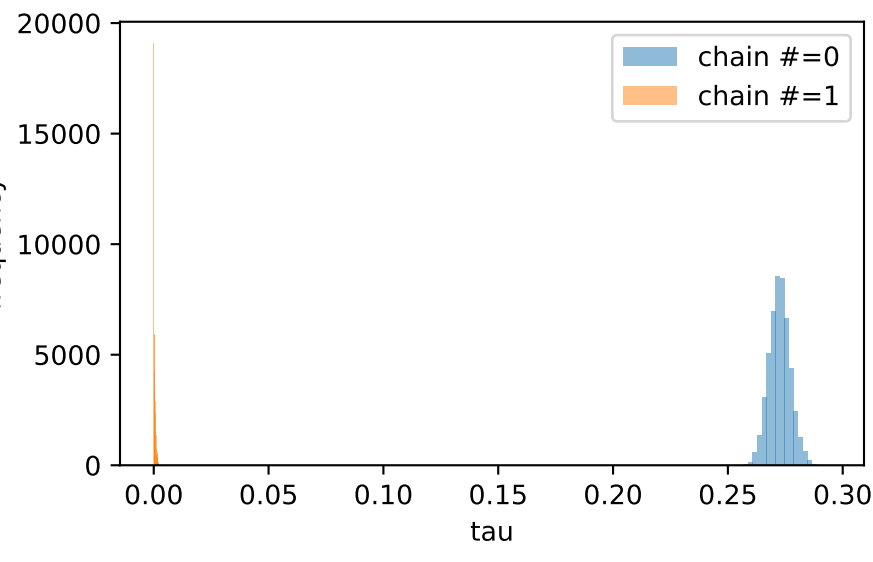
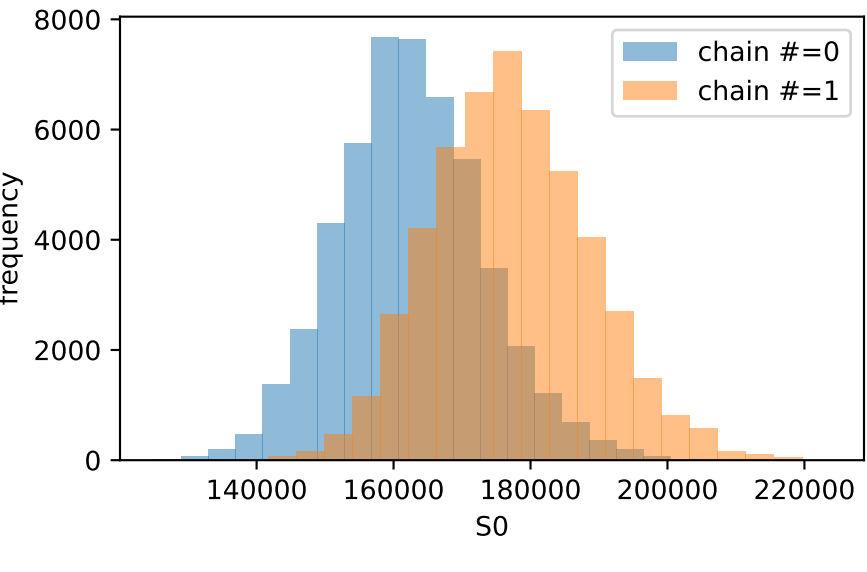
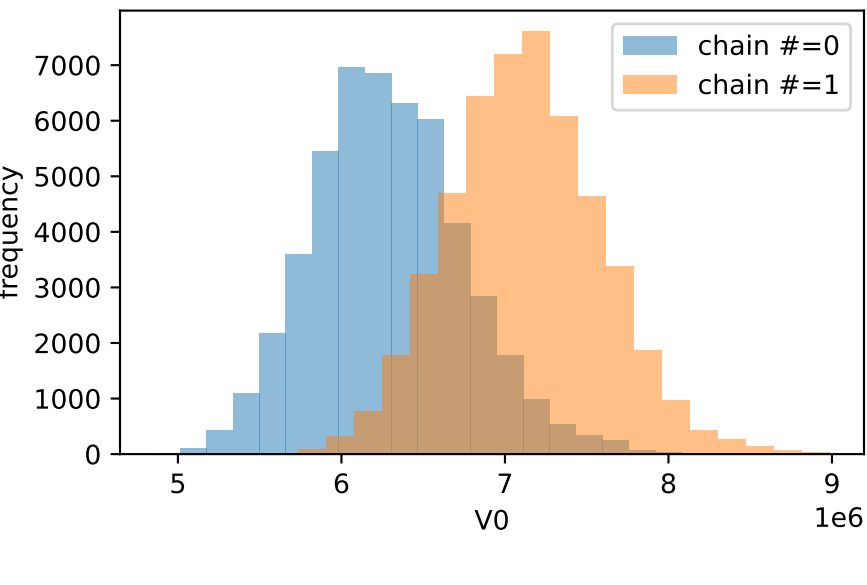
chain #=1
phi
1e−5

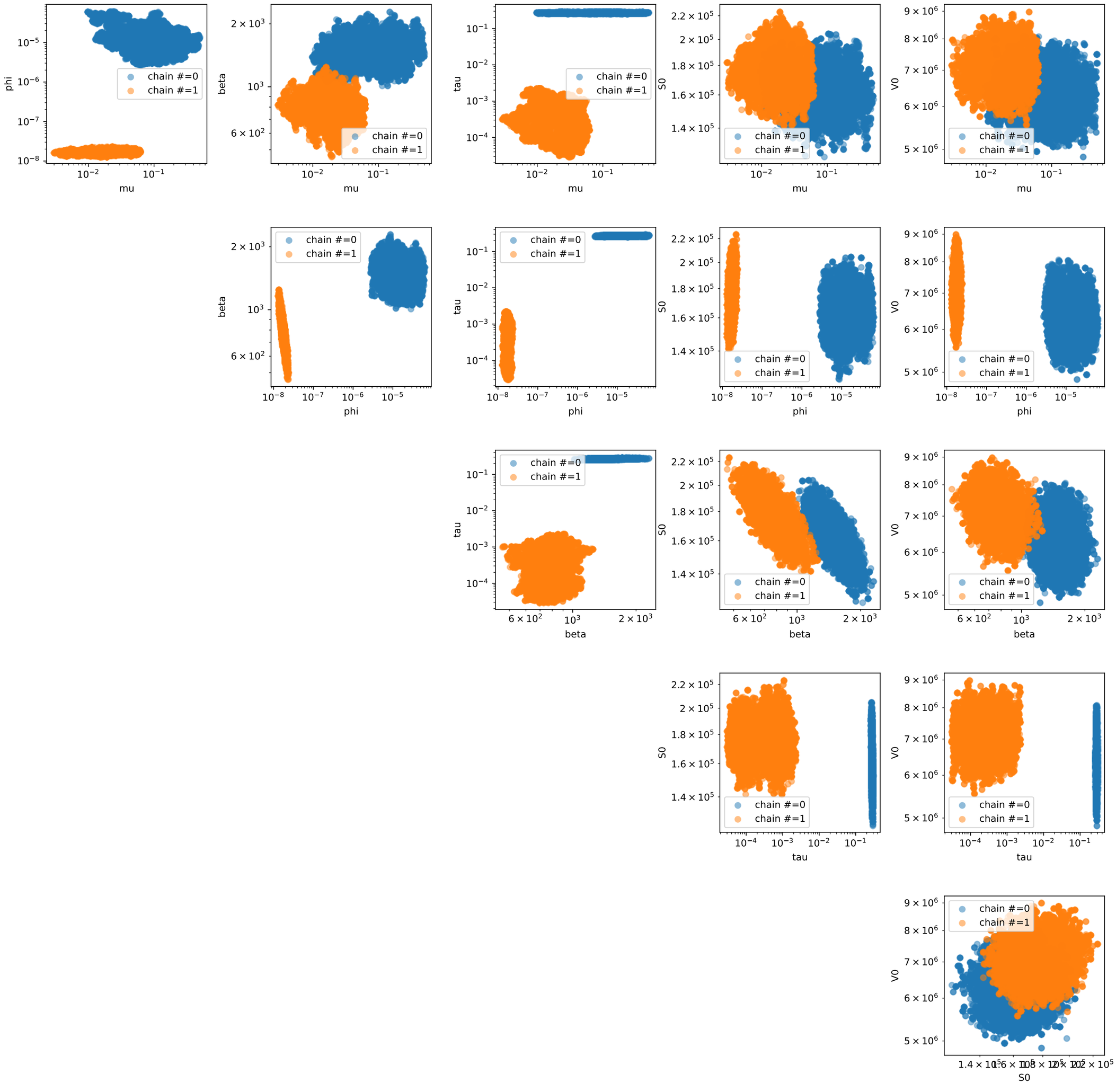

chain #=0
chain #=1
frequency
beta

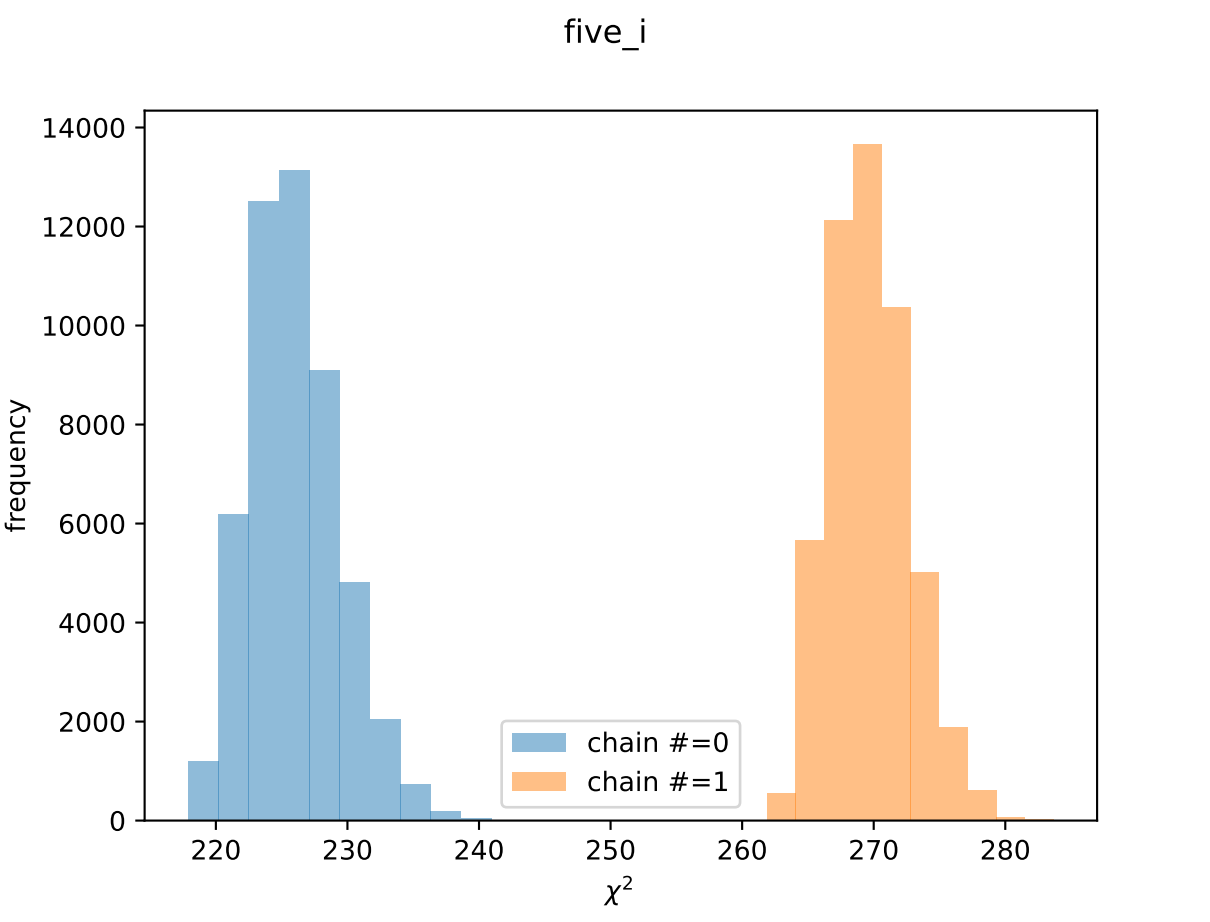

chain #=0
chain #=1
tau

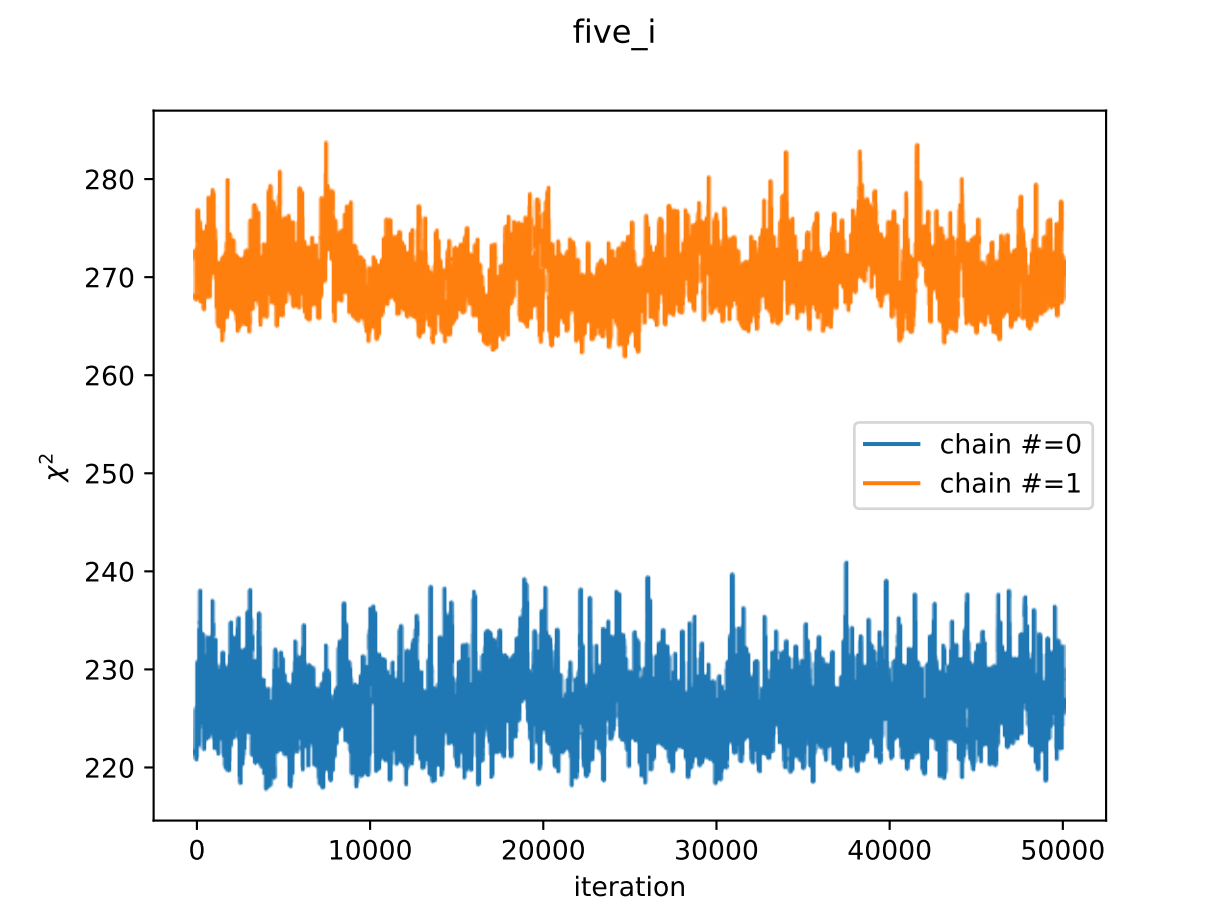

chain #=0
chain #=1
frequency
S0


chain #=0
chain #=1
frequency
V0
1e6

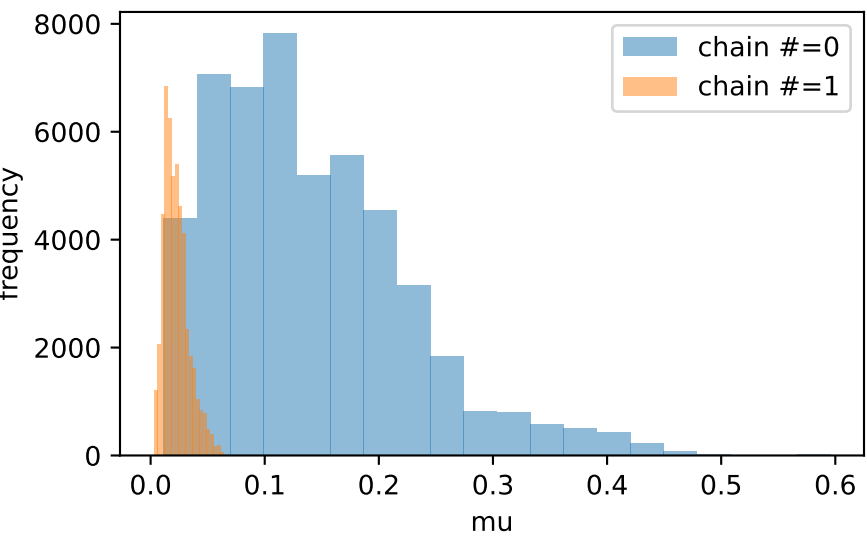
five_i


phi
mu
beta
mu
tau
mu
S0
mu
V0
mu
beta
phi
tau
phi
S0
phi
V0
phi
tau
beta
S0
beta
V0
beta
S0
tau
V0
tau
V0
S0
chain #=0
chain #=1


five_i
14000
12000
10000
8000
6000
4000
2000
0
frequency
220
230
240
250
260
270
280
χ^2
chain #=0
chain #=1


five_i
280
270
260
250
240
230
220
χ^2
chain #=0
chain #=1
0
10000
20000
30000
40000
50000
iteration

six_i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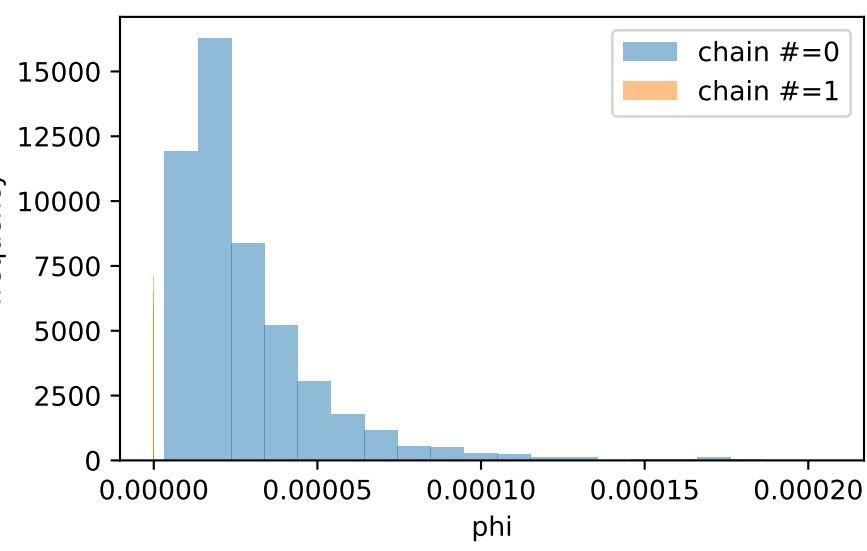
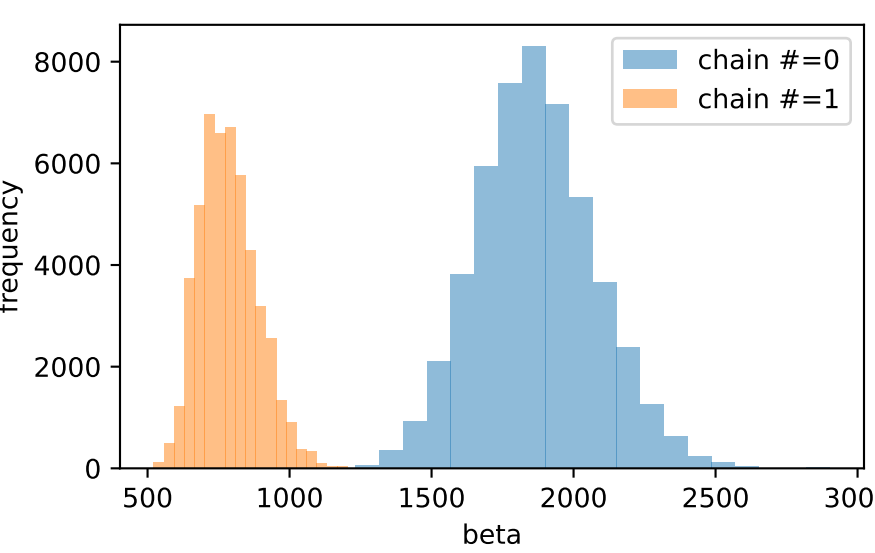
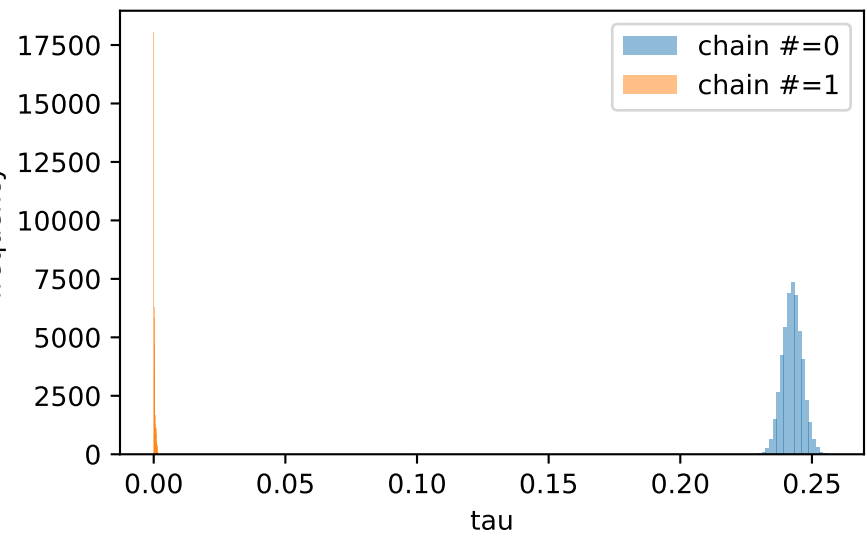
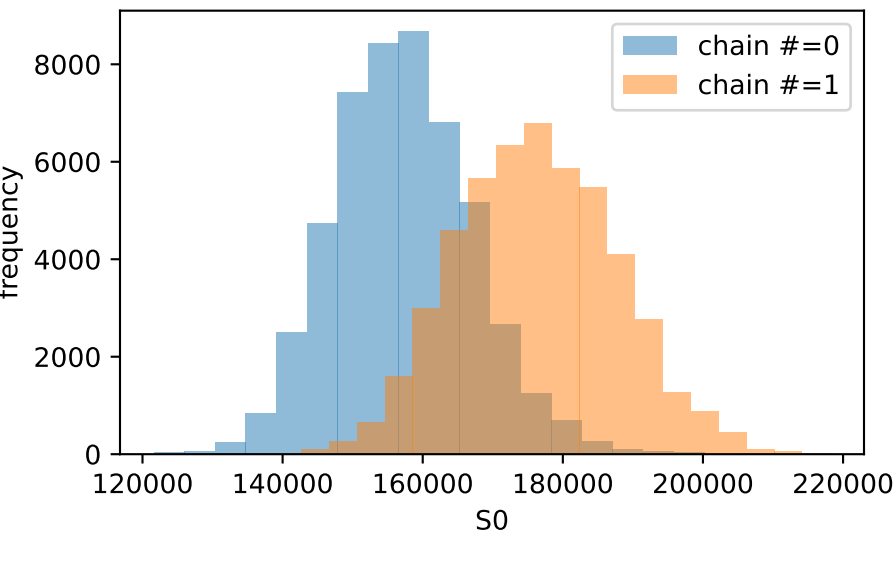
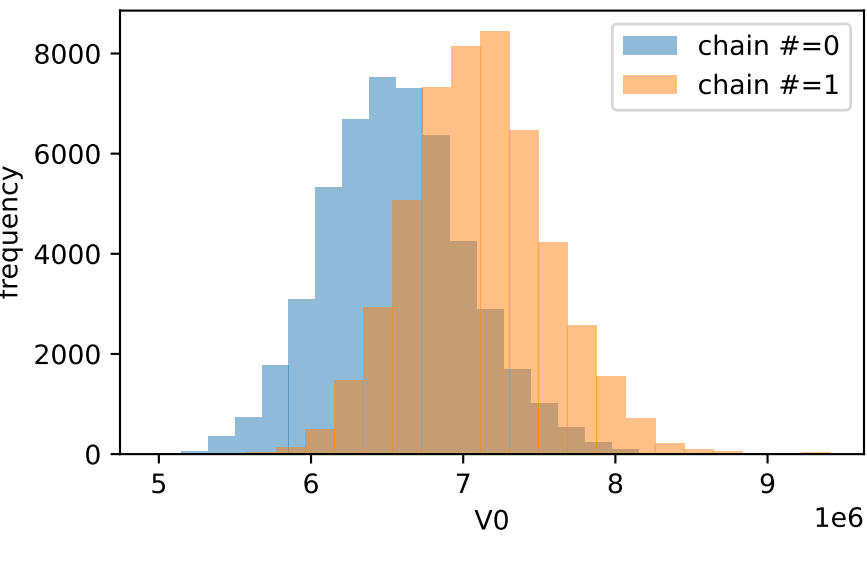
chain #=1
frequency
mu


chain #=0
chain #=1
phi

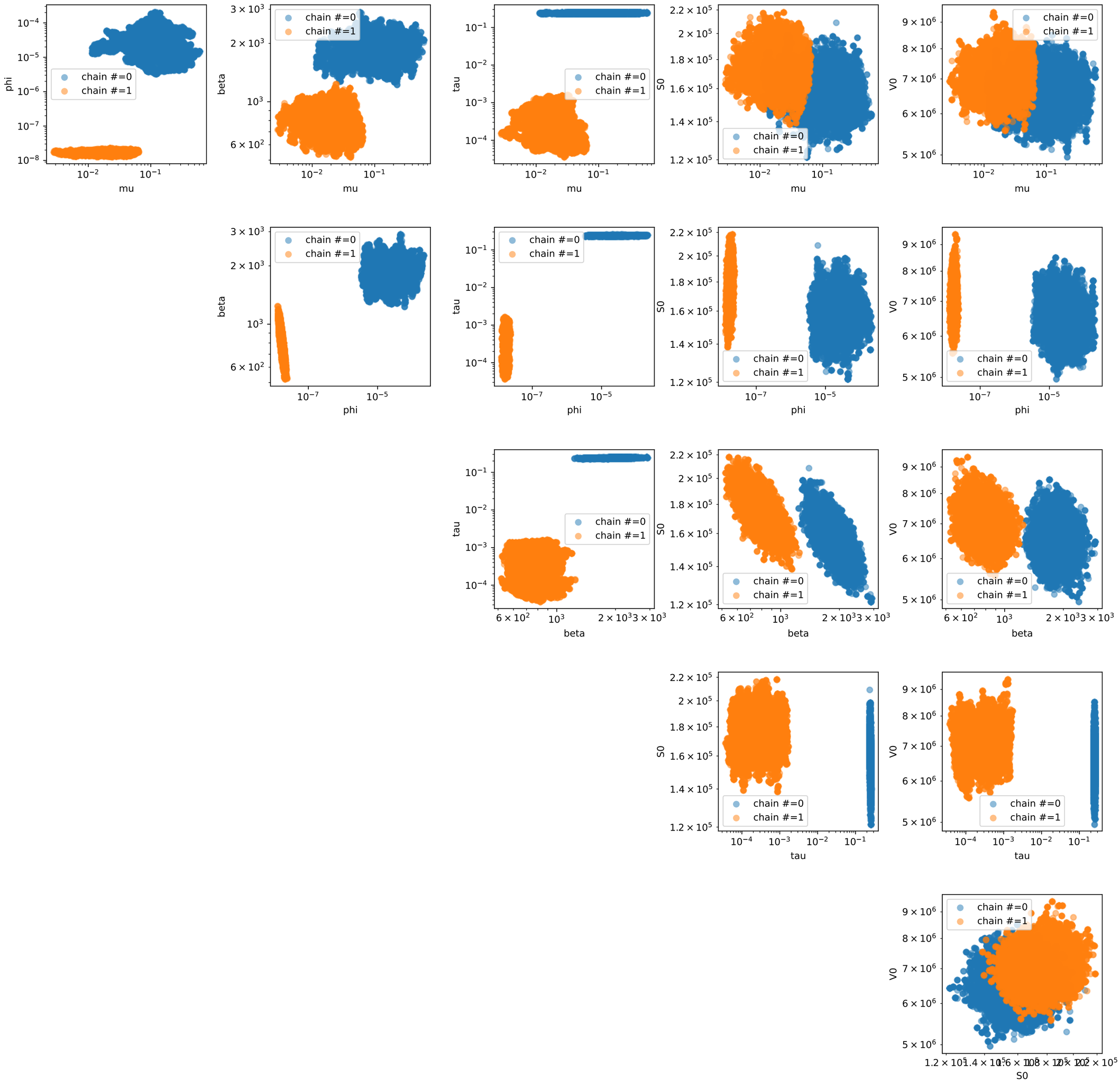

chain #=0
chain #=1
frequency
beta

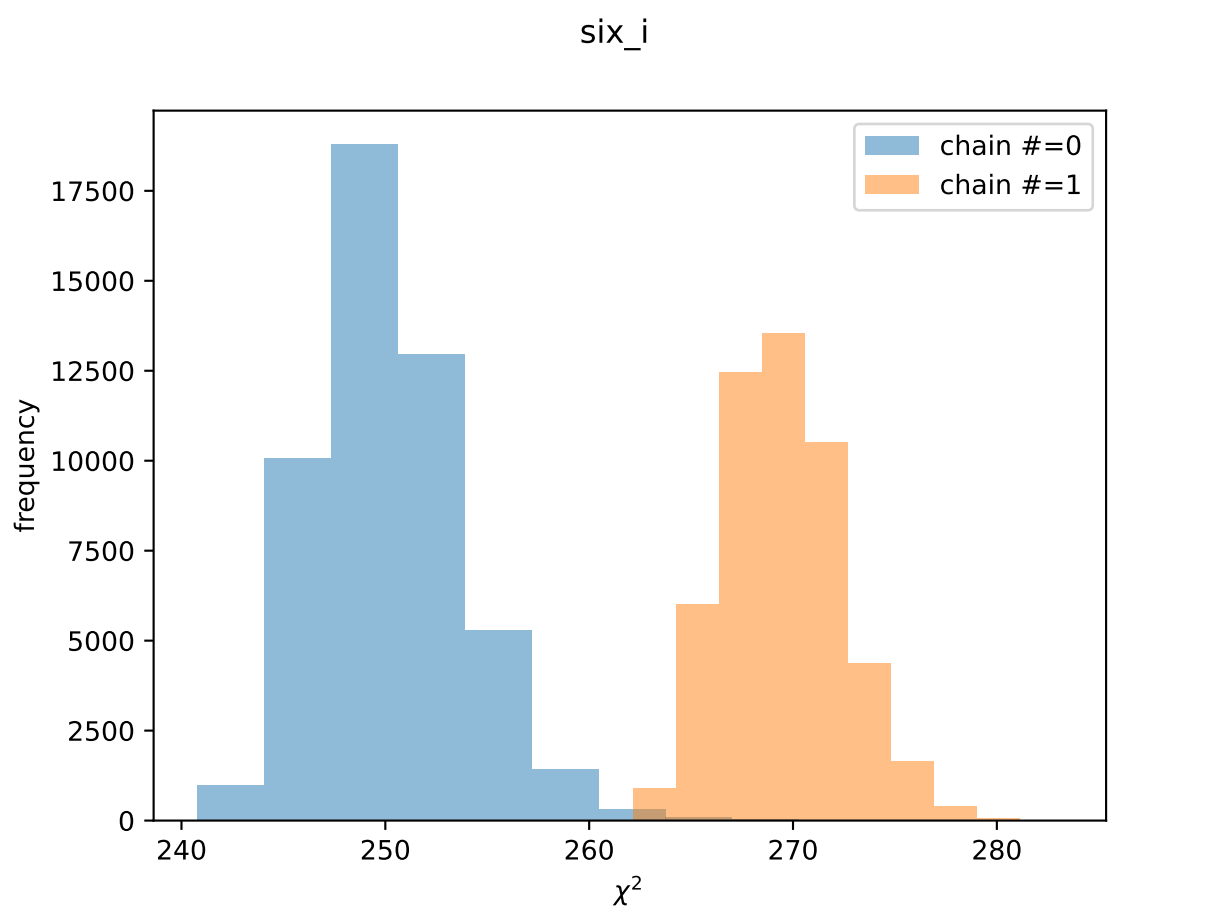

chain #=0
chain #=1
tau

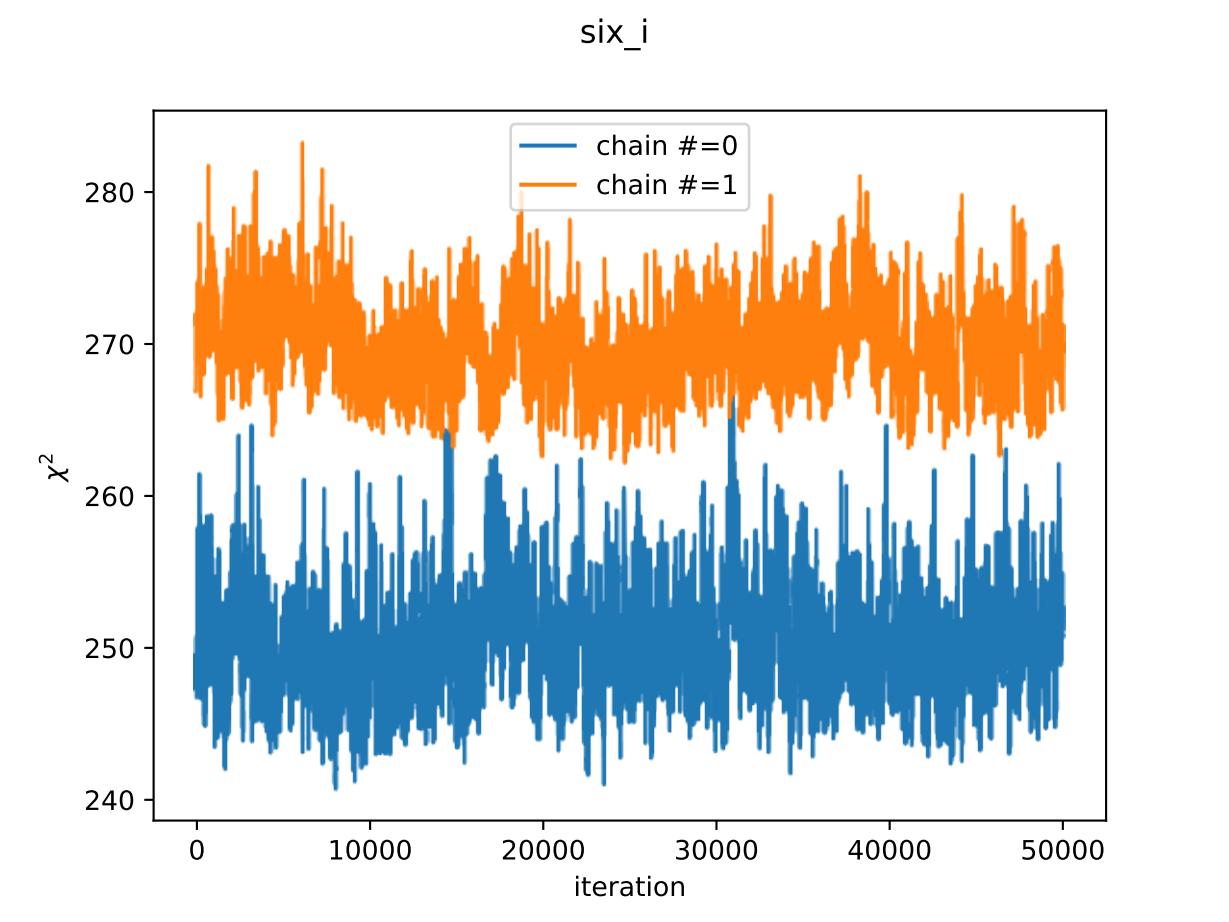

chain #=0
chain #=1
frequency
S0


chain #=0
chain #=1
frequency
V0
1e6

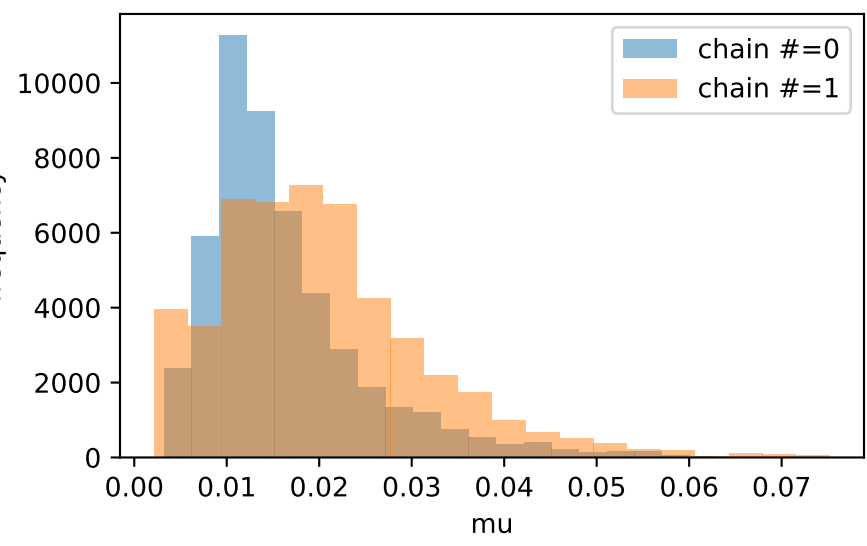
six_i




six_i
chain #=0
chain #=1
frequency
17500
15000
12500
10000
7500
5000
2500
0
240
250
260
270
280
χ^2


six_i
chain #=0
chain #=1
280
270
260
250
240
χ^2
0
10000
20000
30000
40000
50000
iteration

seven_i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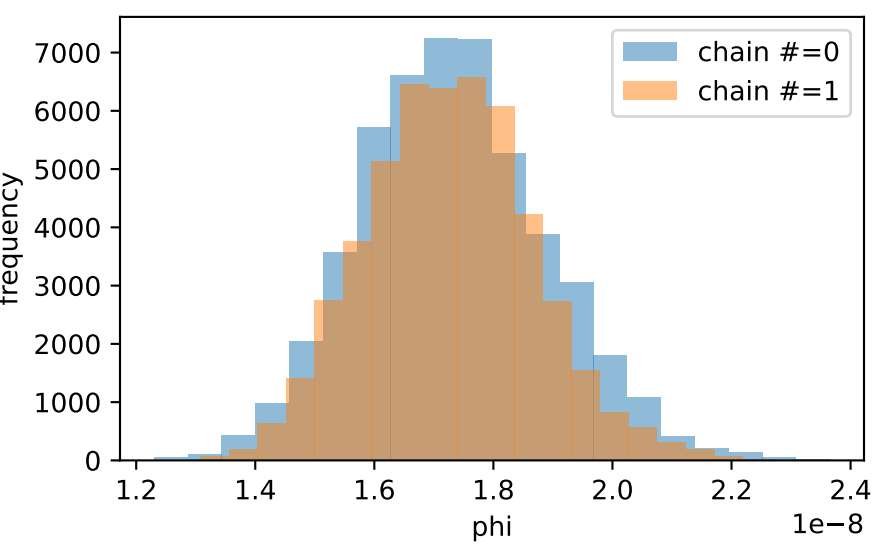
0.01
0.02
0.03
0.04
0.05
0.06
0.07
mu


chain #=0
chain #=1
frequency
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4000
3000
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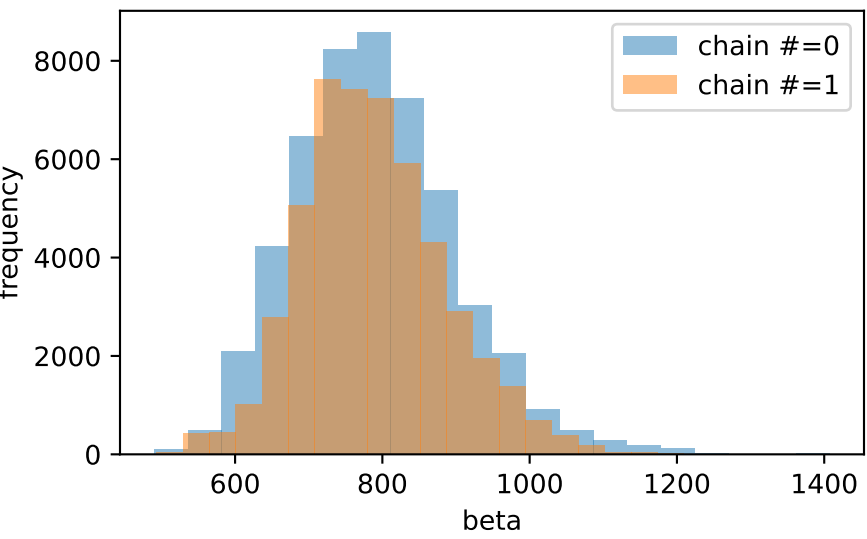
1.2
1.4
1.6
1.8
2.0
2.2
2.4
phi
1e−8


chain #=0
chain #=1
frequency
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6000
4000
2000
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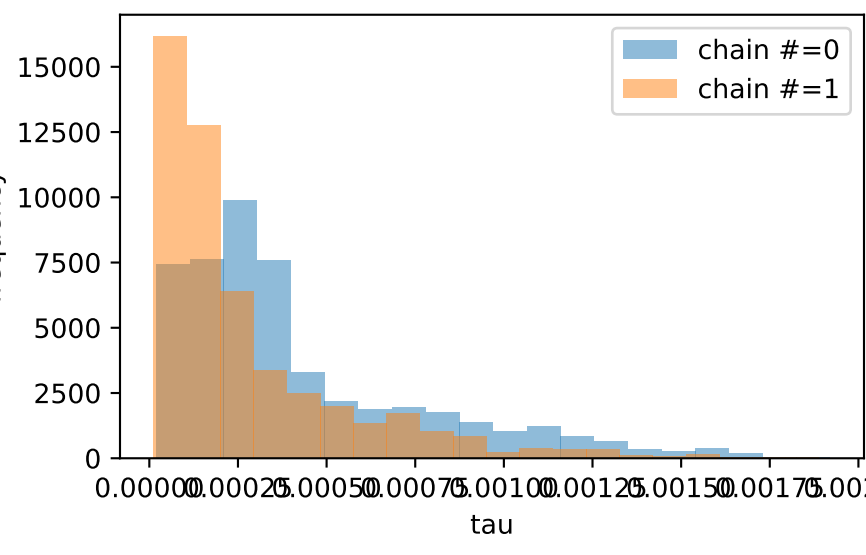
600
800
1000
1200
1400
beta


chain #=0
chain #=1
15000
12500
10000
7500
5000
2500
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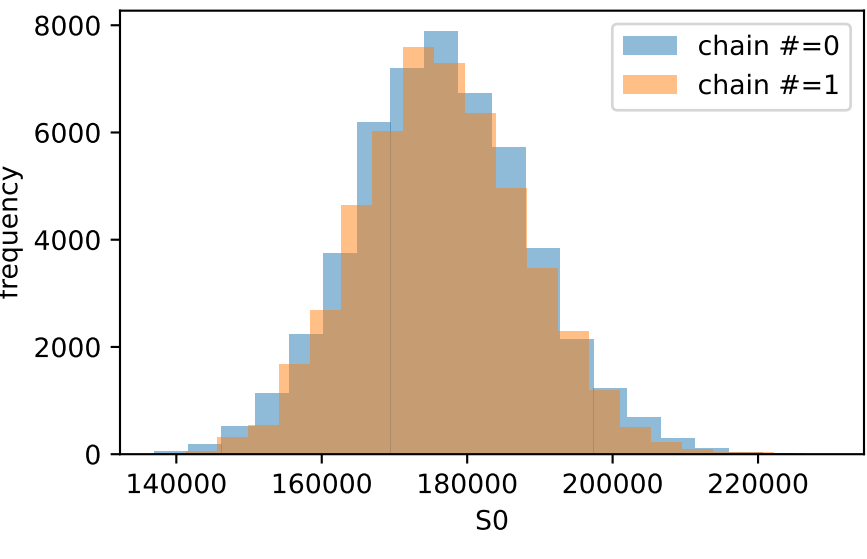
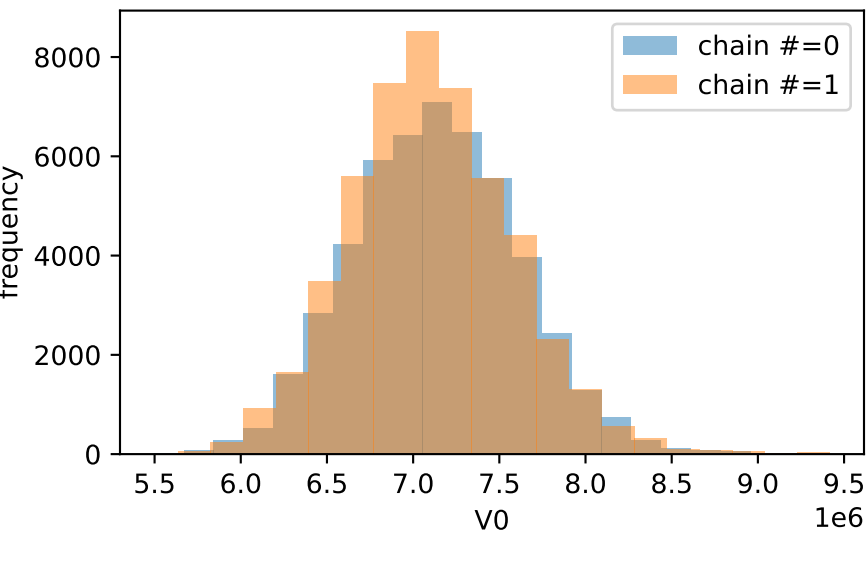
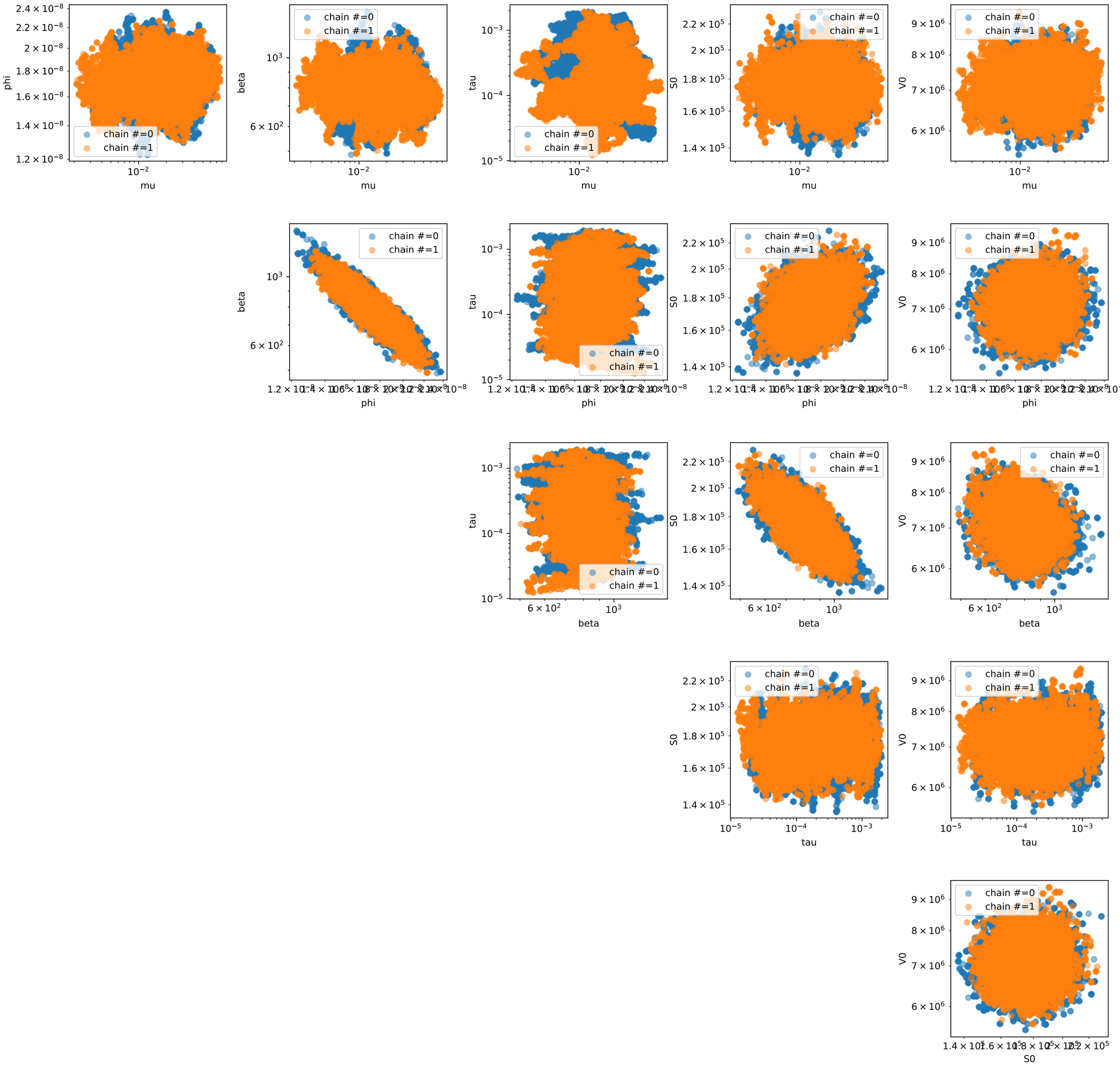
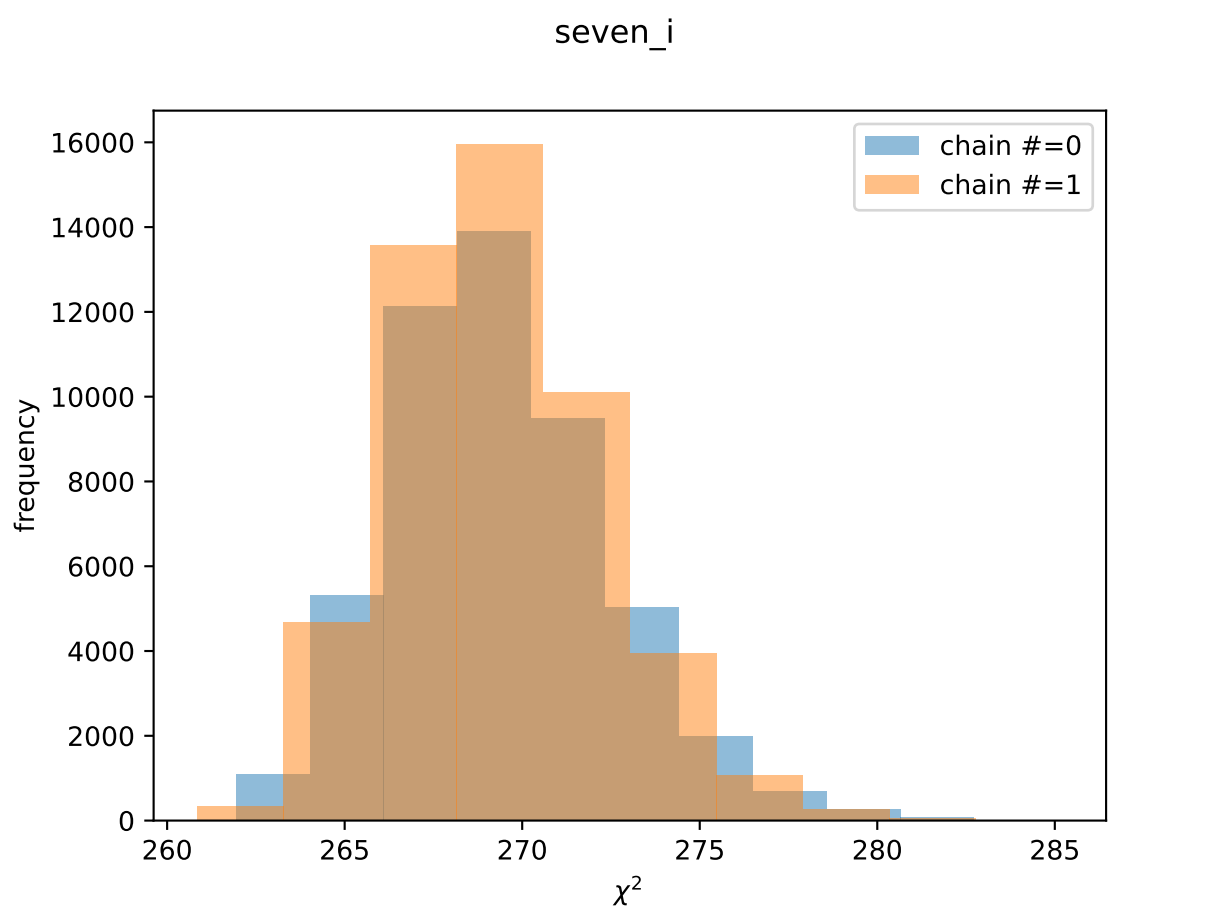
0.00000
0.00025
0.00050
0.00075
0.00100
0.00125
0.00150
0.00175
0.00200
tau

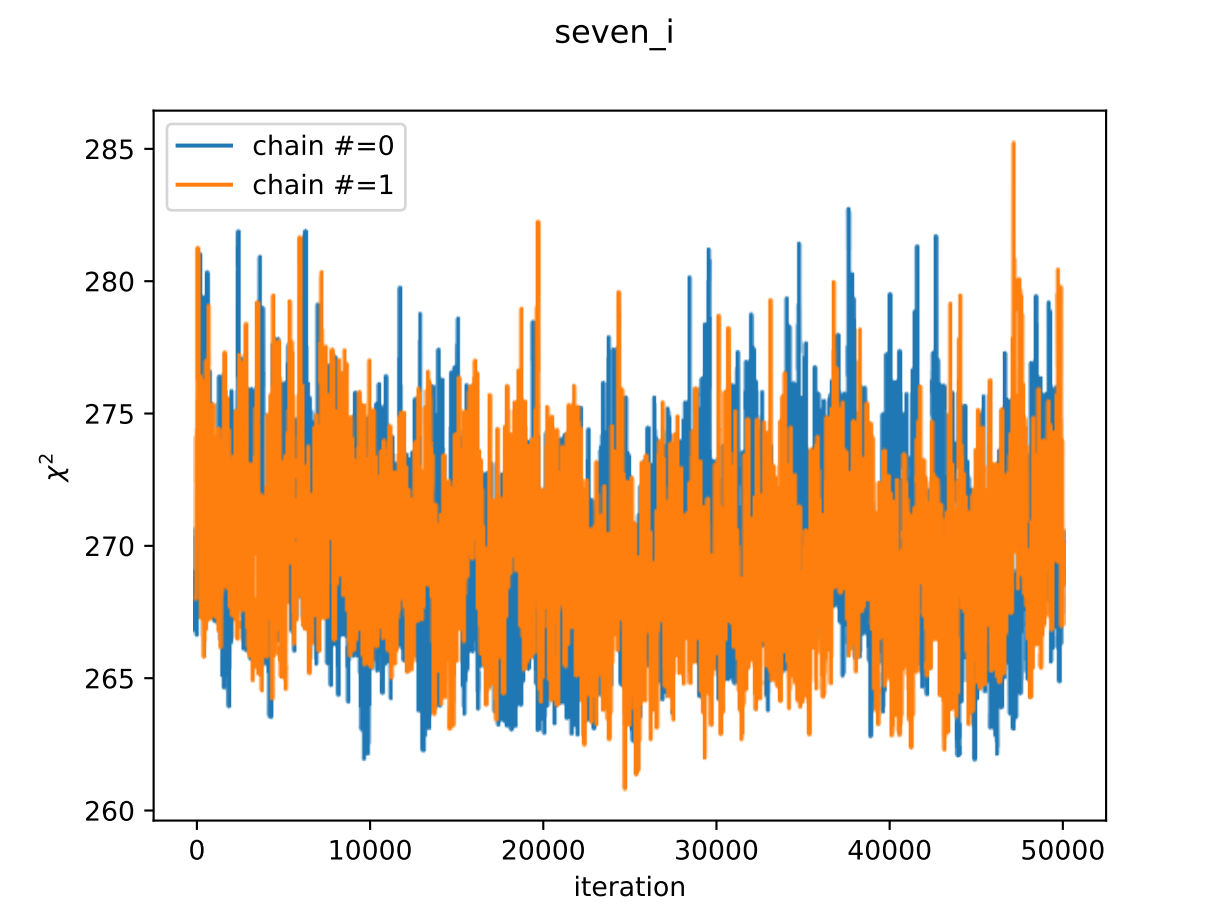

chain #=0
chain #=1
frequency
8000
6000
4000
2000
0
140000
160000
180000
200000
220000
S0


chain #=0
chain #=1
frequency
8000
6000
4000
2000
0
5.5
6.0
6.5
7.0
7.5
8.0
8.5
9.0
9.5
V0
1e6

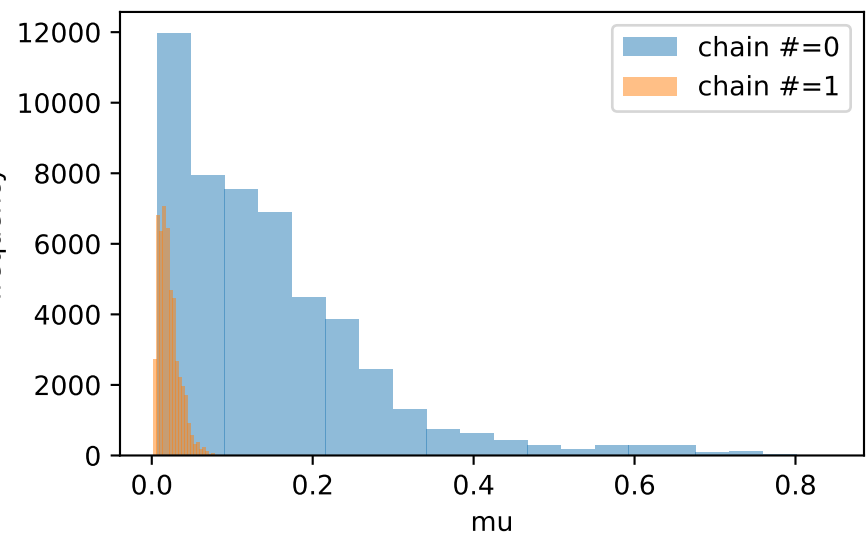
seven_i




seven_i
chain #=0
chain #=1
frequency
16000
14000
12000
10000
8000
6000
4000
2000
0
260
265
270
275
280
285
χ^2


seven_i
chain #=0
chain #=1
285
280
275
270
265
260
χ^2
0
10000
20000
30000
40000
50000
iteration

eight_i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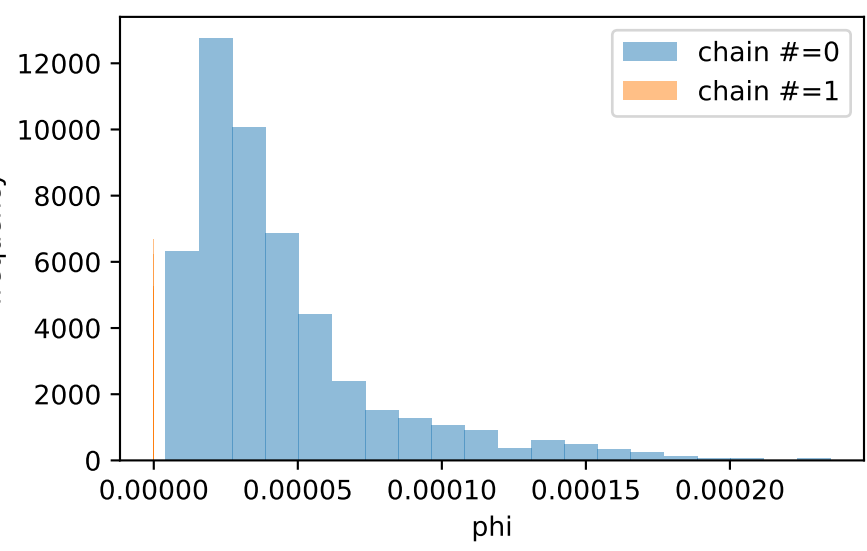
8000
6000
4000
2000
0
0.0
0.2
0.4
0.6
0.8
mu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6000
4000
2000
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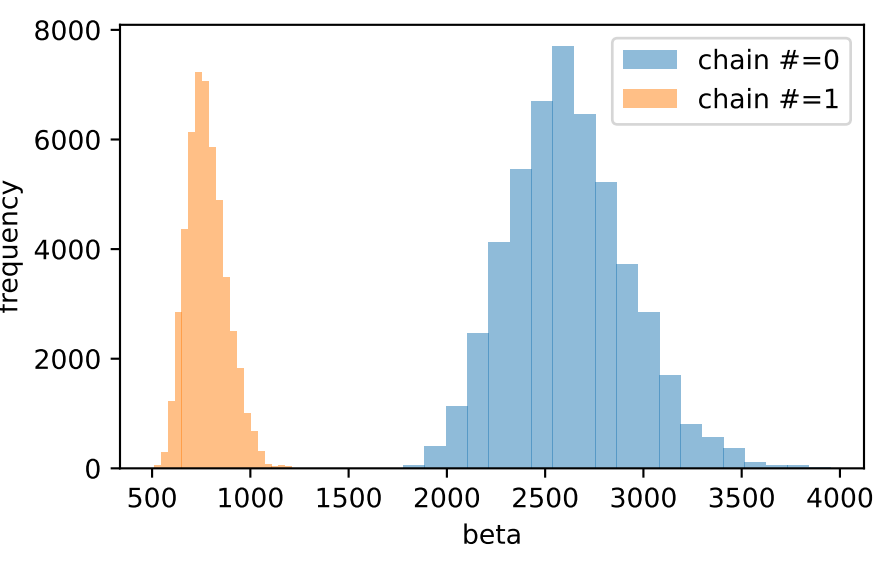
0.00010
0.00015
0.00020
phi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0
frequency
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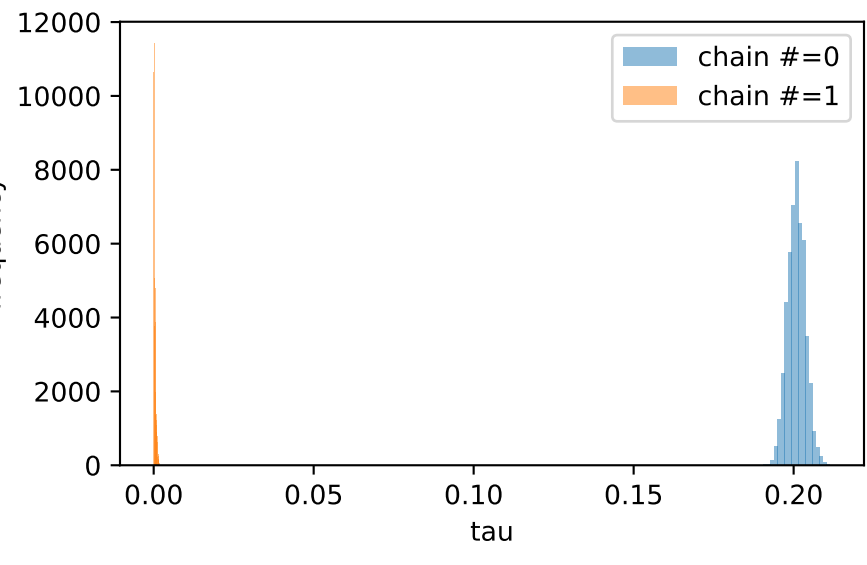
1000
1500
2000
2500
3000
3500
4000
beta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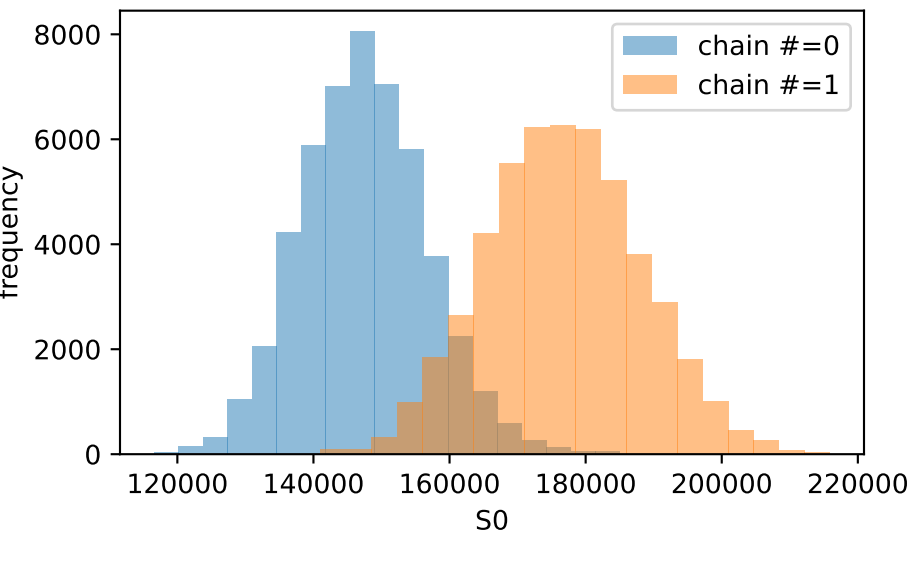
8000
6000
4000
2000
0
0.00
0.05
0.10
0.15
0.20
tau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6000
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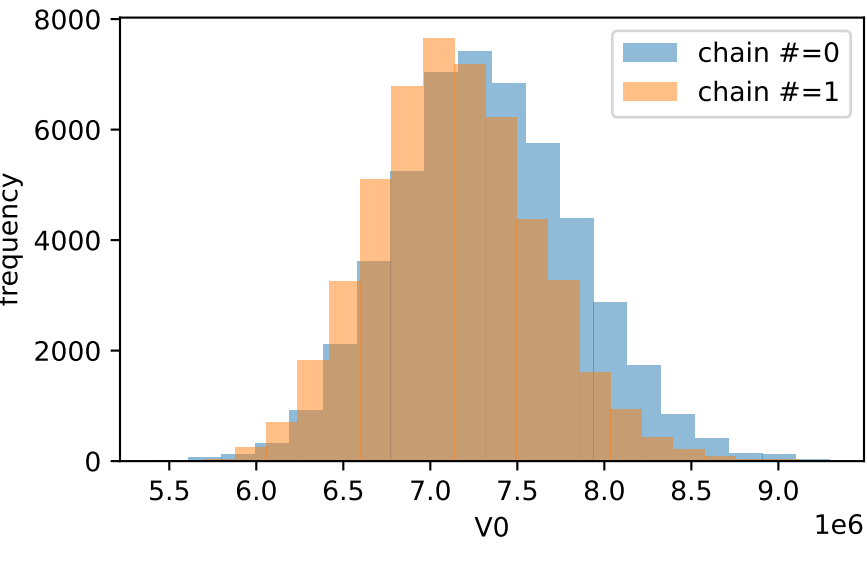
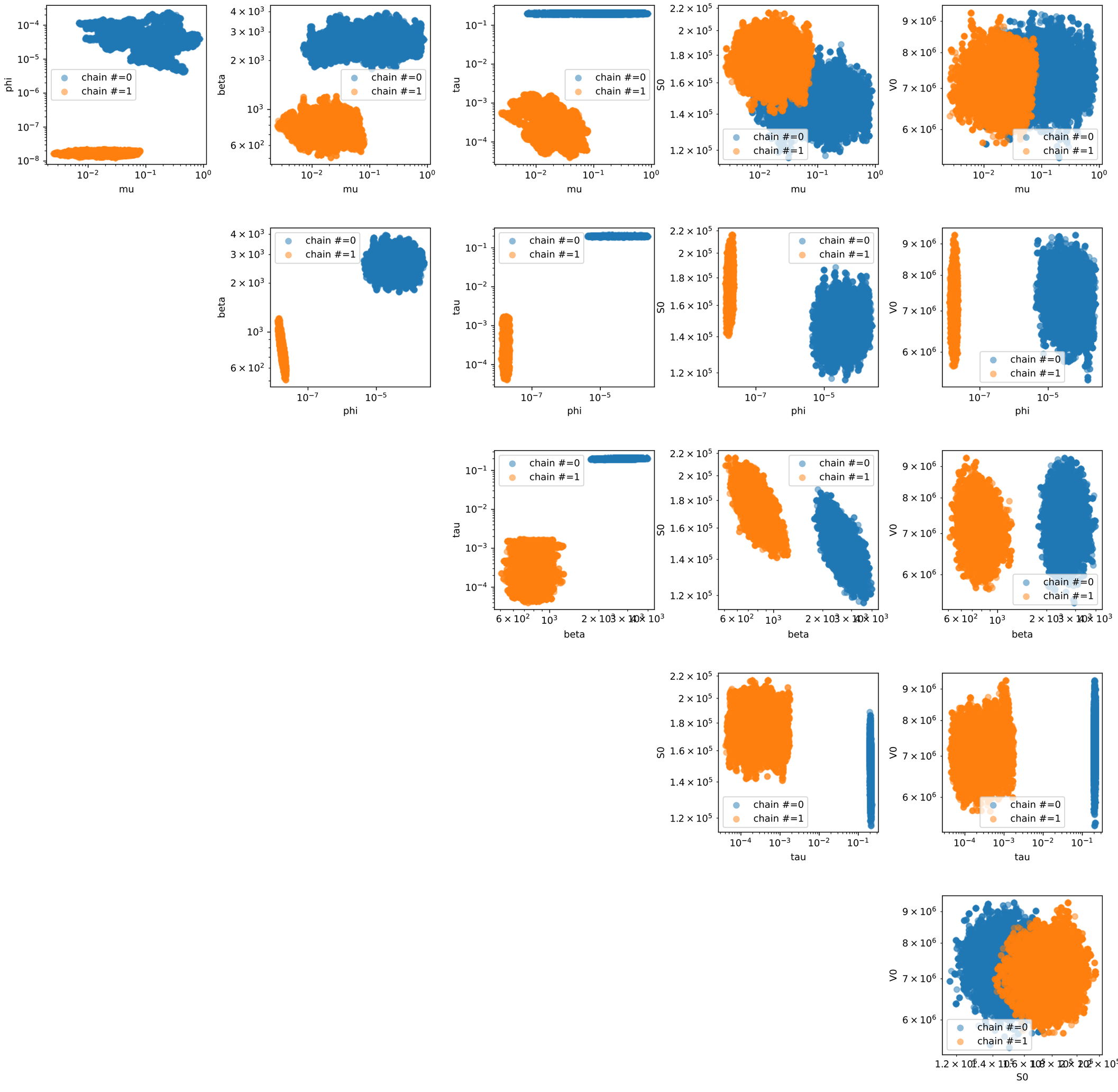
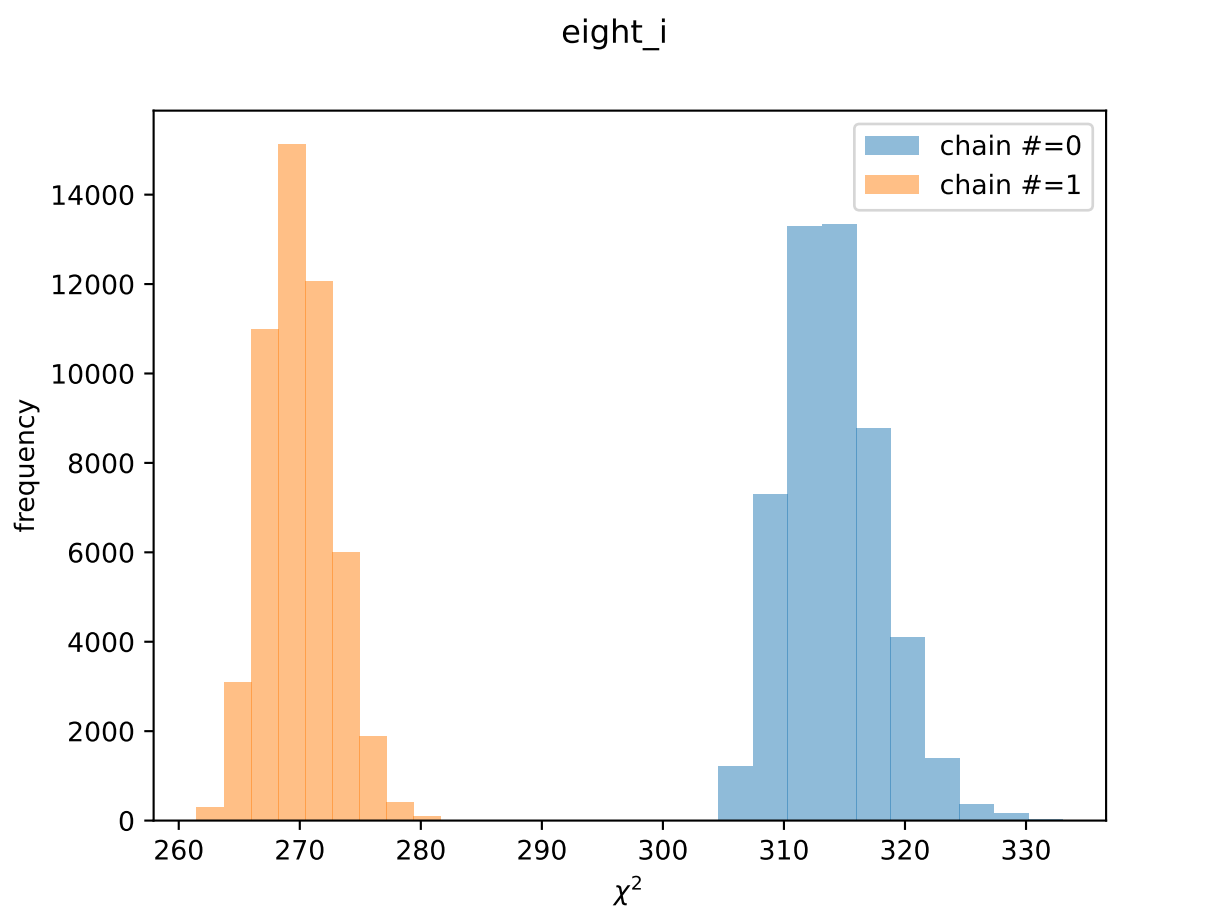
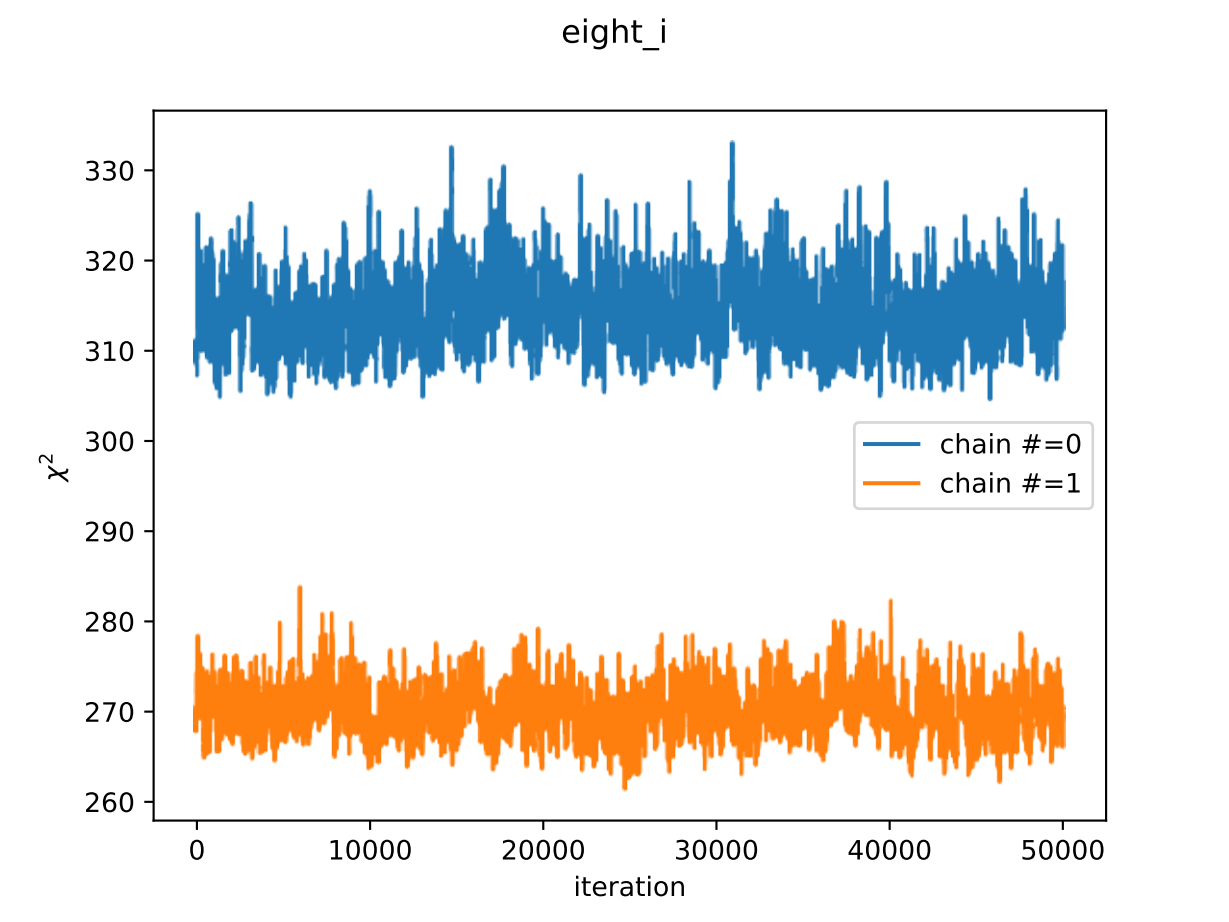
2000
0
frequency
120000
140000
160000
180000
200000
220000
S0


chain #=0
chain #=1
8000
6000
4000
2000
0
frequency
5.5
6.0
6.5
7.0
7.5
8.0
8.5
9.0
V0
1e6

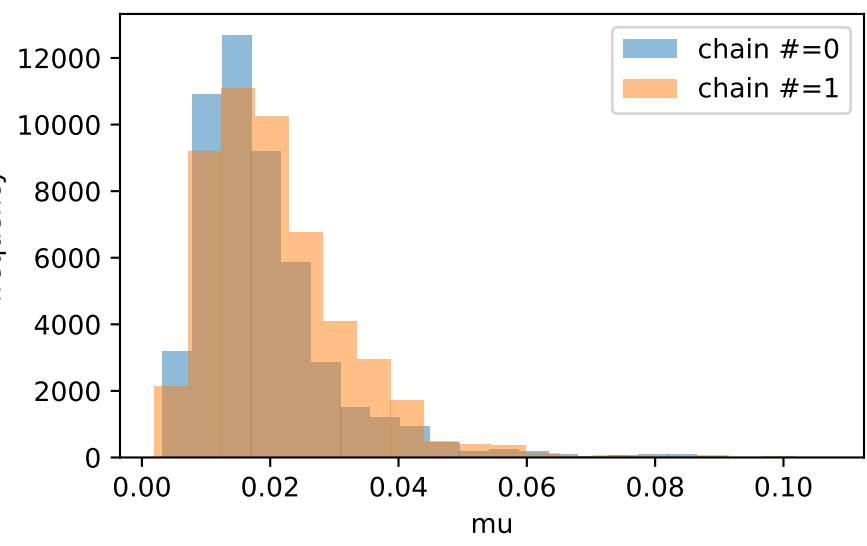
eight_i




eight_i
chain #=0
chain #=1
frequency
0
2000
4000
6000
8000
10000
12000
14000
260
270
280
290
300
310
320
330
χ^2


eight_i
330
320
310
300
290
280
270
260
χ^2
0
10000
20000
30000
40000
50000
iteration
chain #=0
chain #=1

nine_i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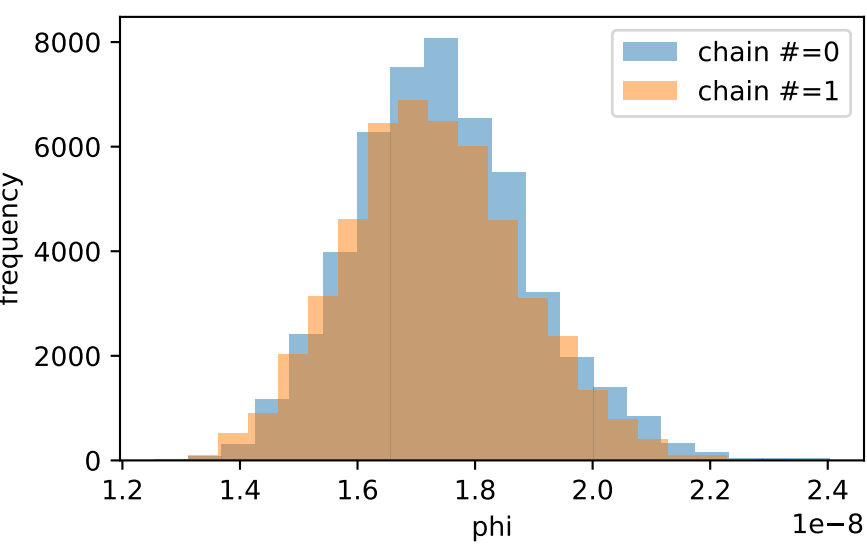
6000
4000
2000
0
0.00
0.02
0.04
0.06
0.08
0.10
mu


chain #=0
chain #=1
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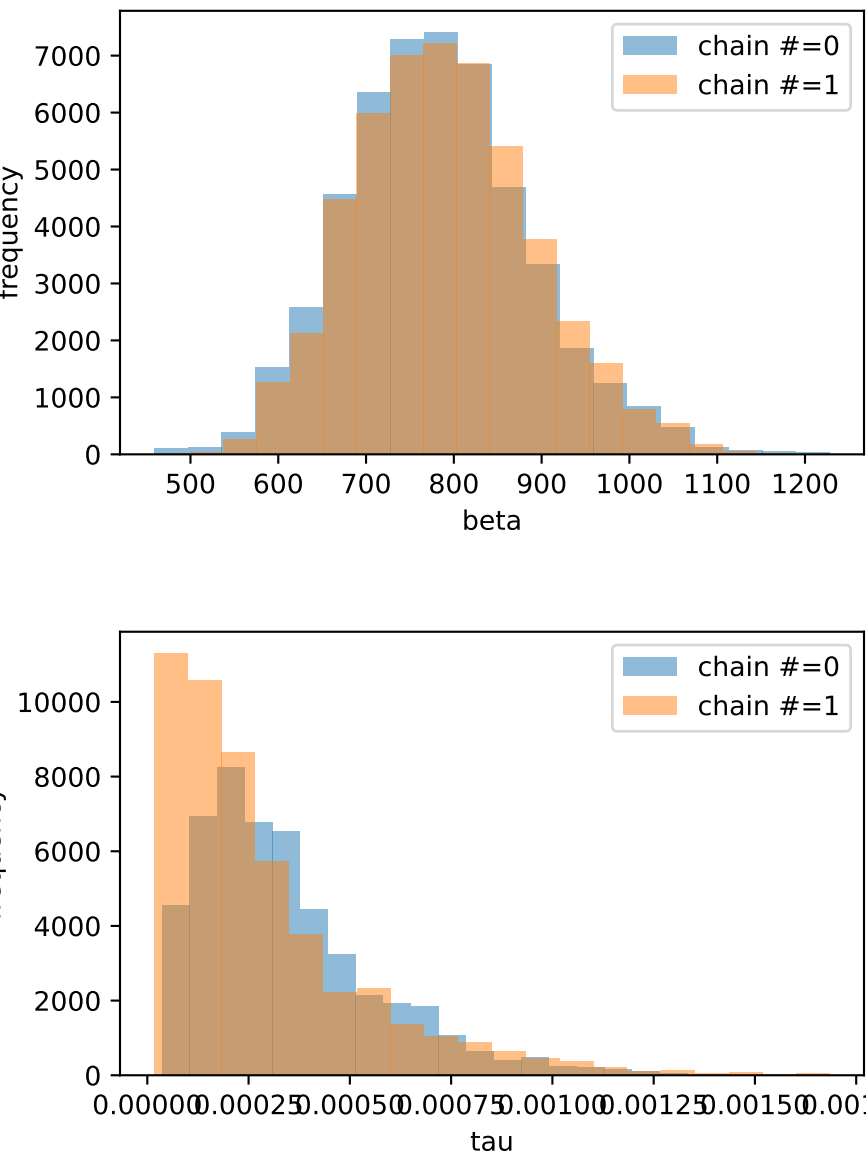
6000
4000
2000
0
frequency
1.2
1.4
1.6
1.8
2.0
2.2
2.4
phi
1e−8


chain #=0
chain #=1
7000
6000
5000
4000
3000
2000
1000
0
frequency
500
600
700
800
900
1000
1100
1200
beta

chain #=0
chain #=1
10000
8000
6000
4000
2000
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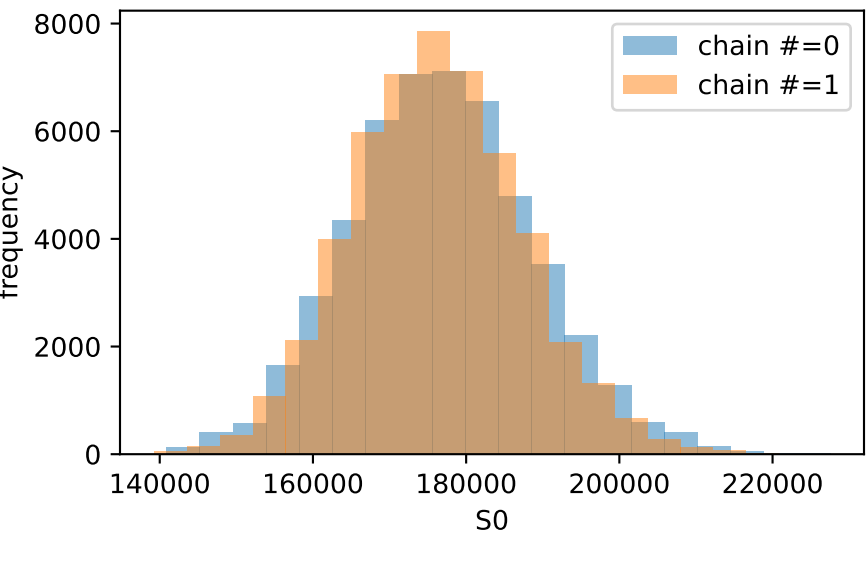
0.00000
0.00025
0.00050
0.00075
0.00100
0.00125
0.00150
0.00175
tau


chain #=0
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8000
6000
4000
2000
0
frequency
140000
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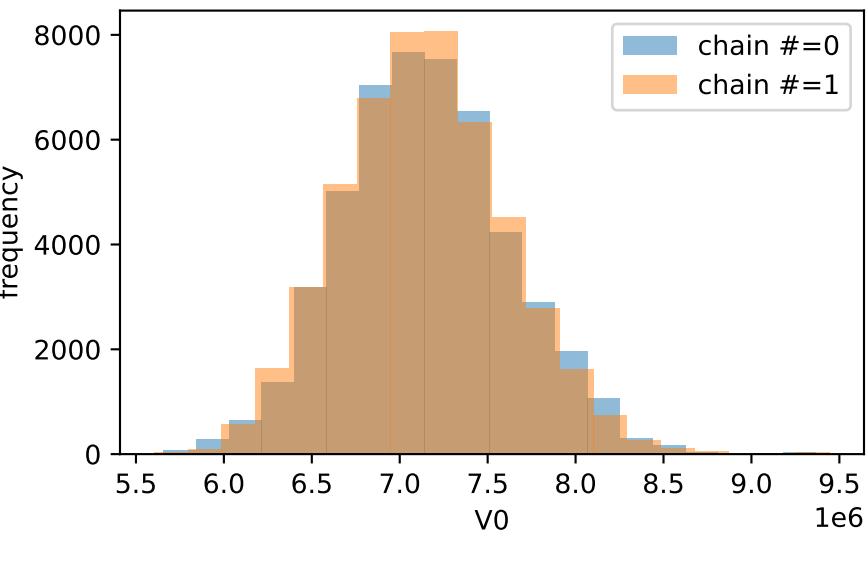
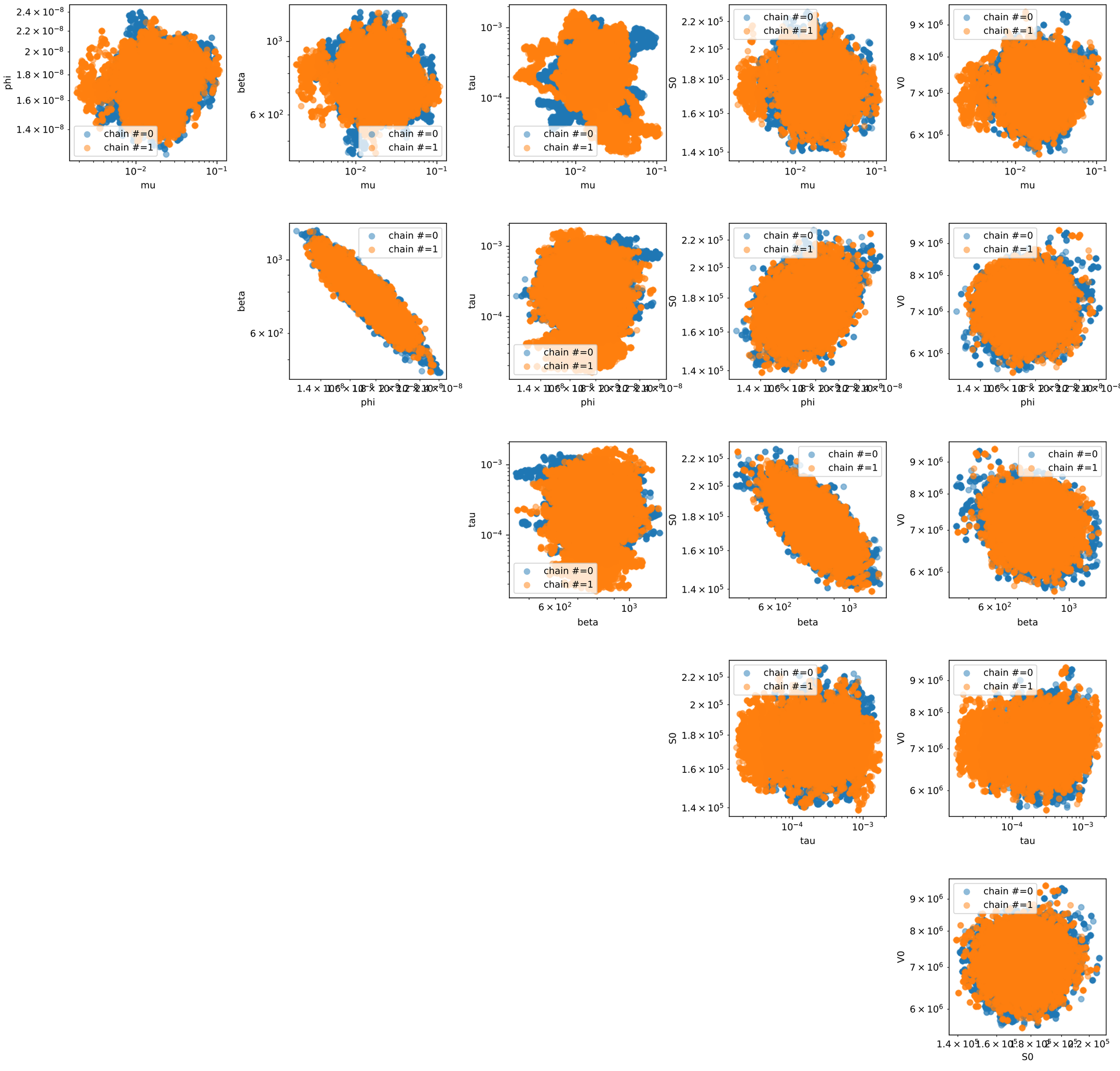
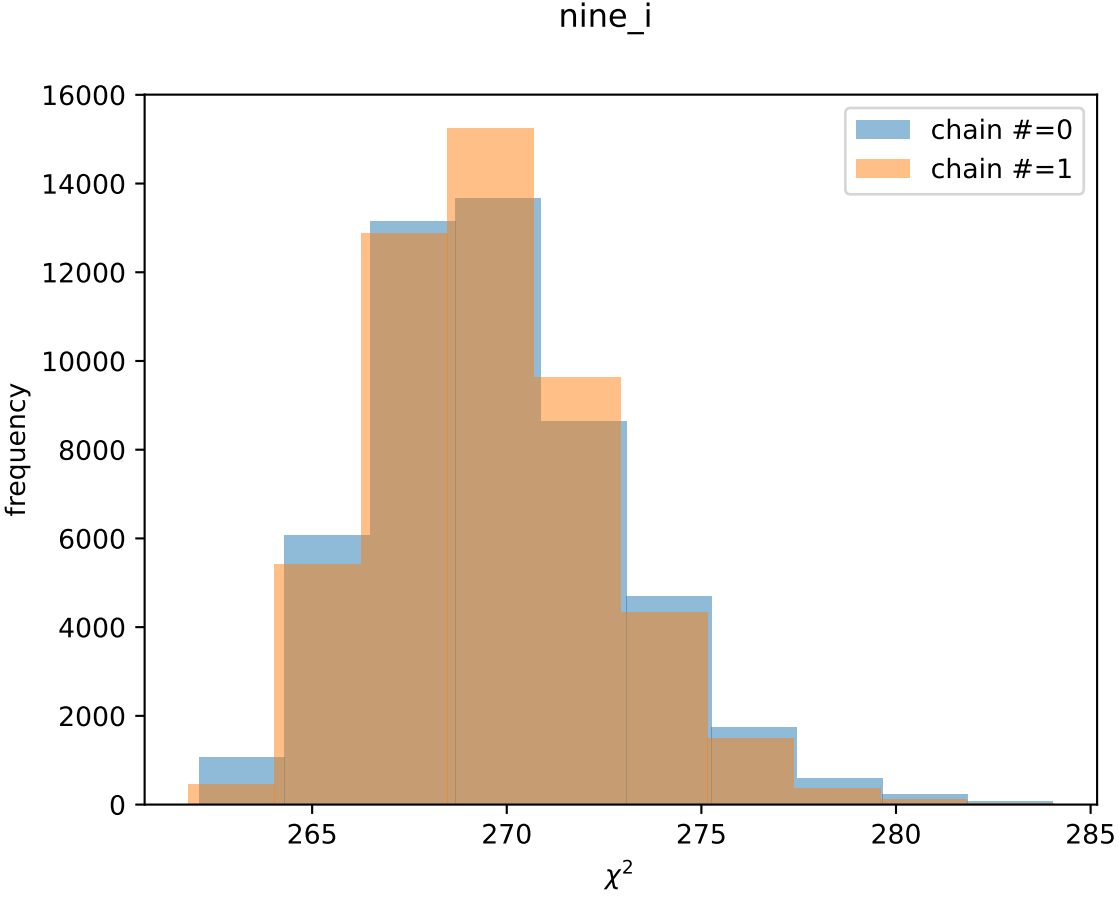
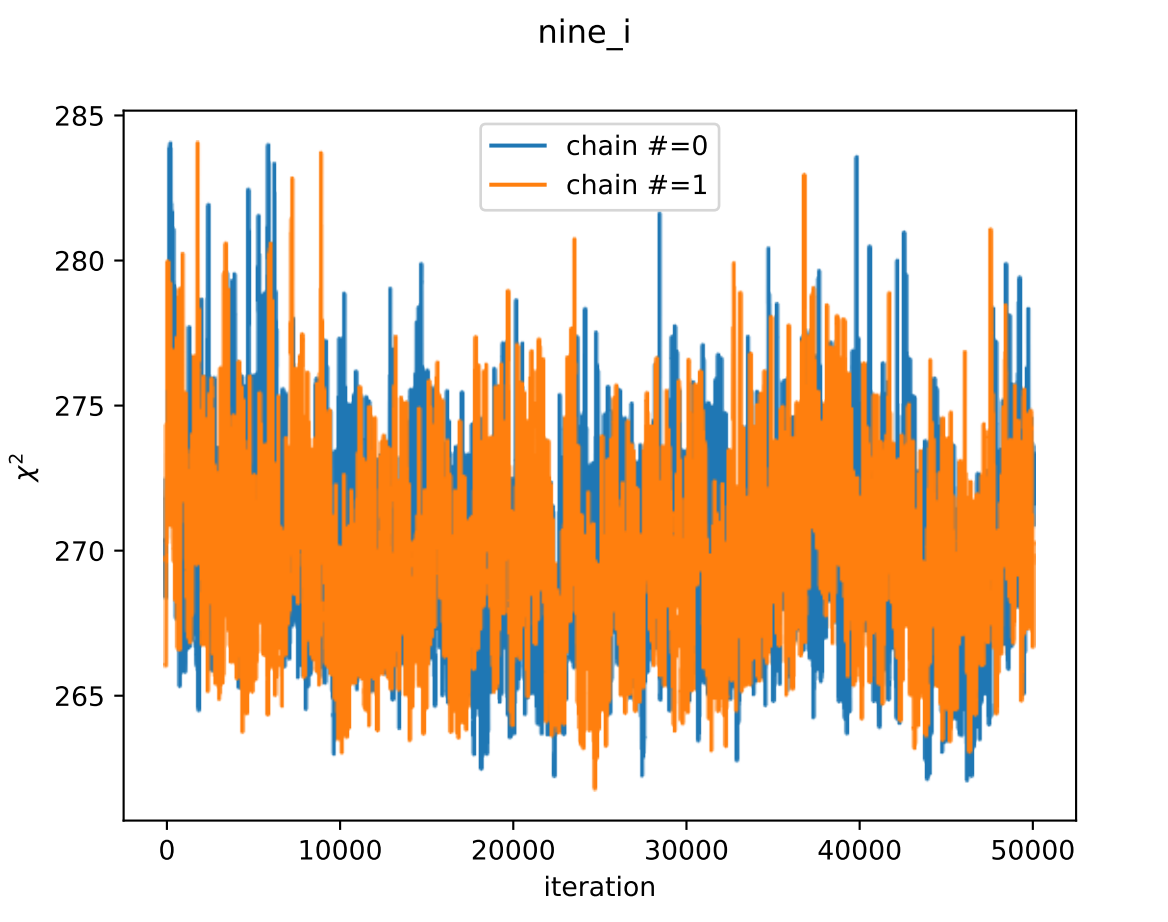
180000
200000
220000
S0


chain #=0
chain #=1
8000
6000
4000
2000
0
frequency
5.5
6.0
6.5
7.0
7.5
8.0
8.5
9.0
9.5
V0
1e6

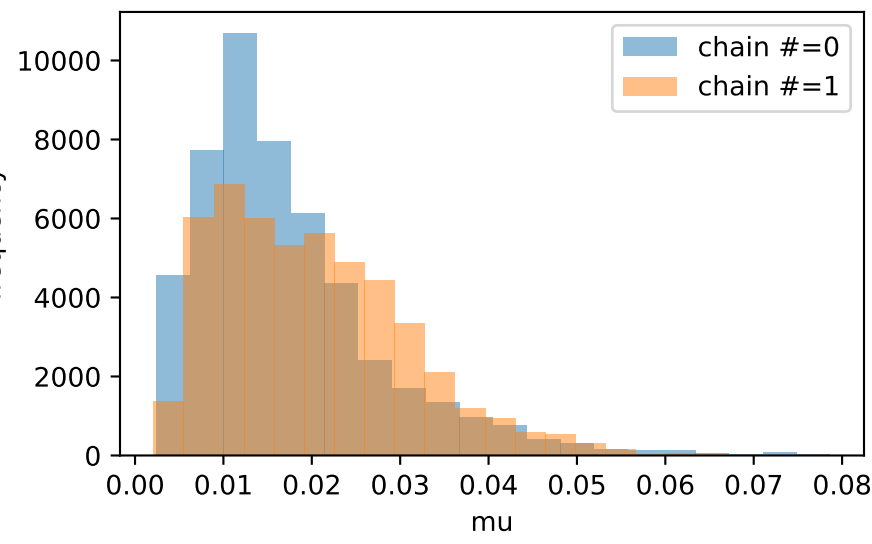
nine_i




nine_i
chain #=0
chain #=1
16000
14000
12000
10000
8000
6000
4000
2000
0
frequency
265
270
275
280
285
χ^2


nine_i
chain #=0
chain #=1
285
280
275
270
265
χ^2
0
10000
20000
30000
40000
50000
iteration

ten_i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0.02
0.03
0.04
0.05
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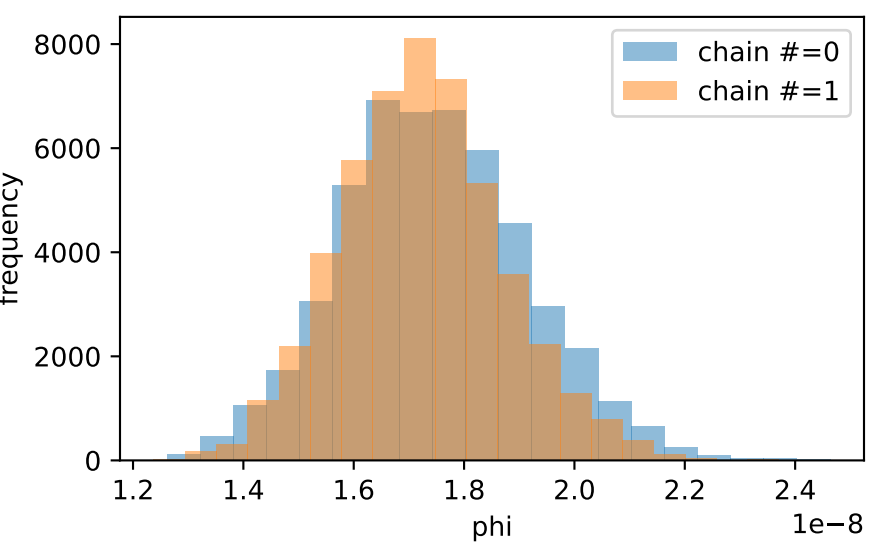
0.07
0.08
mu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chain #=1
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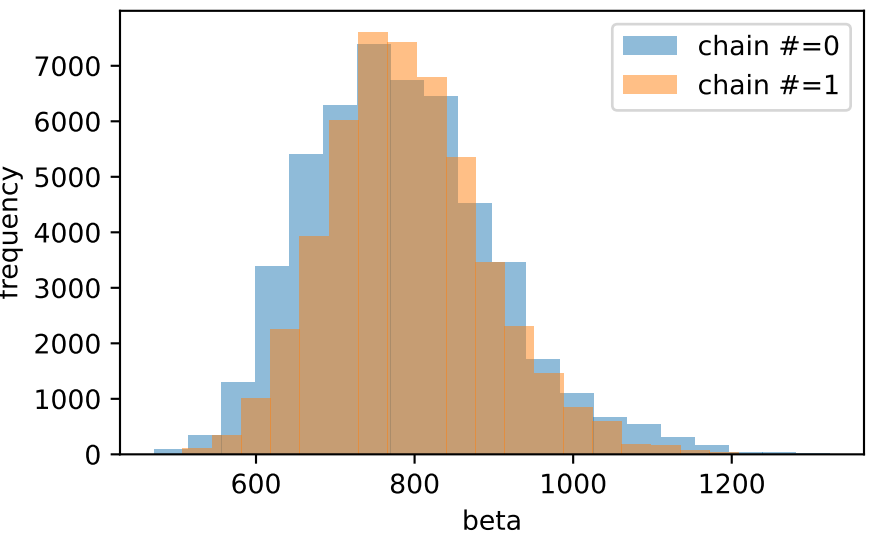
0
frequency
1.2
1.4
1.6
1.8
2.0
2.2
2.4
phi
1e−8


chain #=0
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3000
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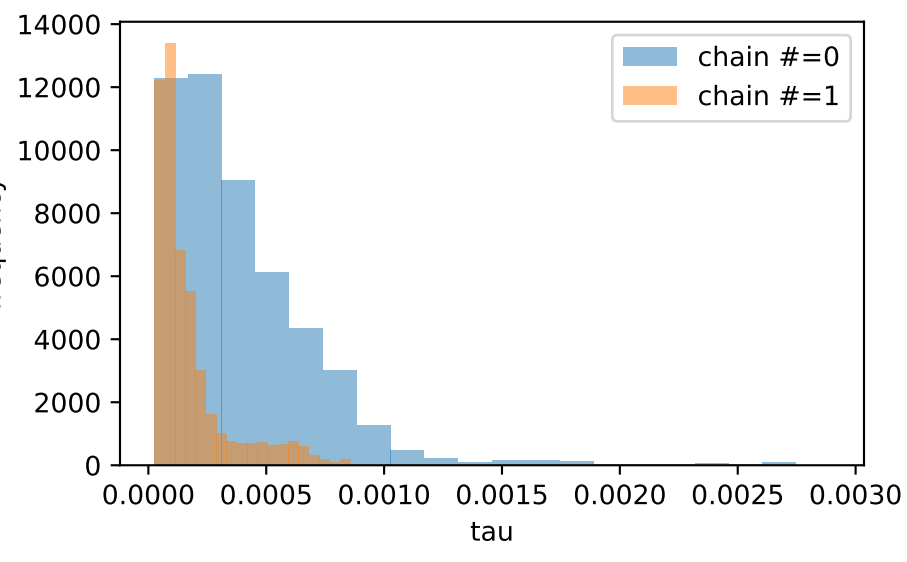
1000
0
frequency
600
800
1000
1200
beta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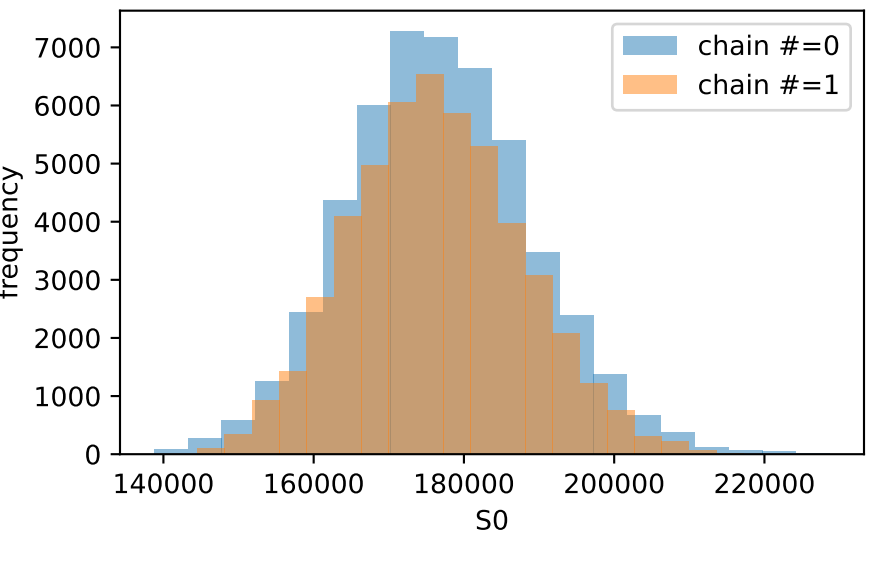
0.0010
0.0015
0.0020
0.0025
0.0030
tau


chain #=0
chain #=1
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5000
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3000
2000
1000
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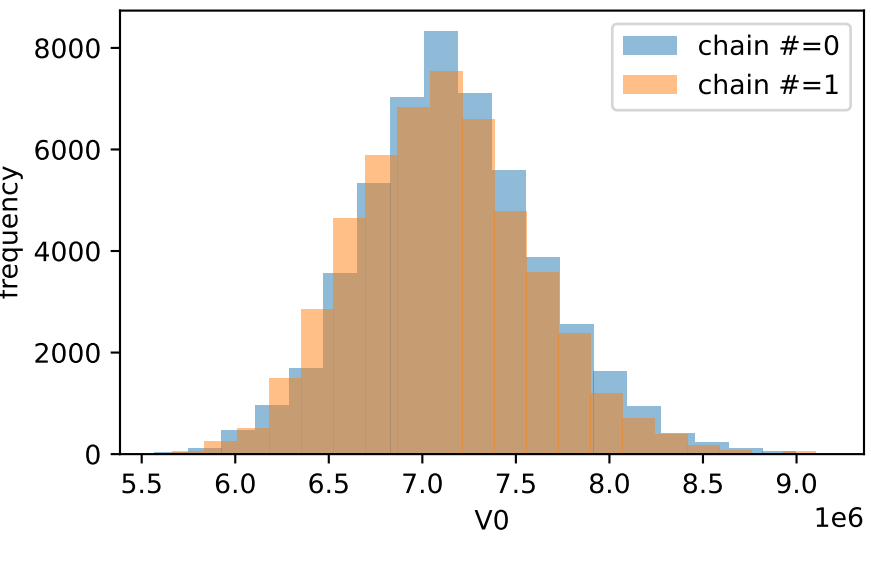
frequency
140000
160000
180000
200000
220000
S0


chain #=0
chain #=1
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frequency
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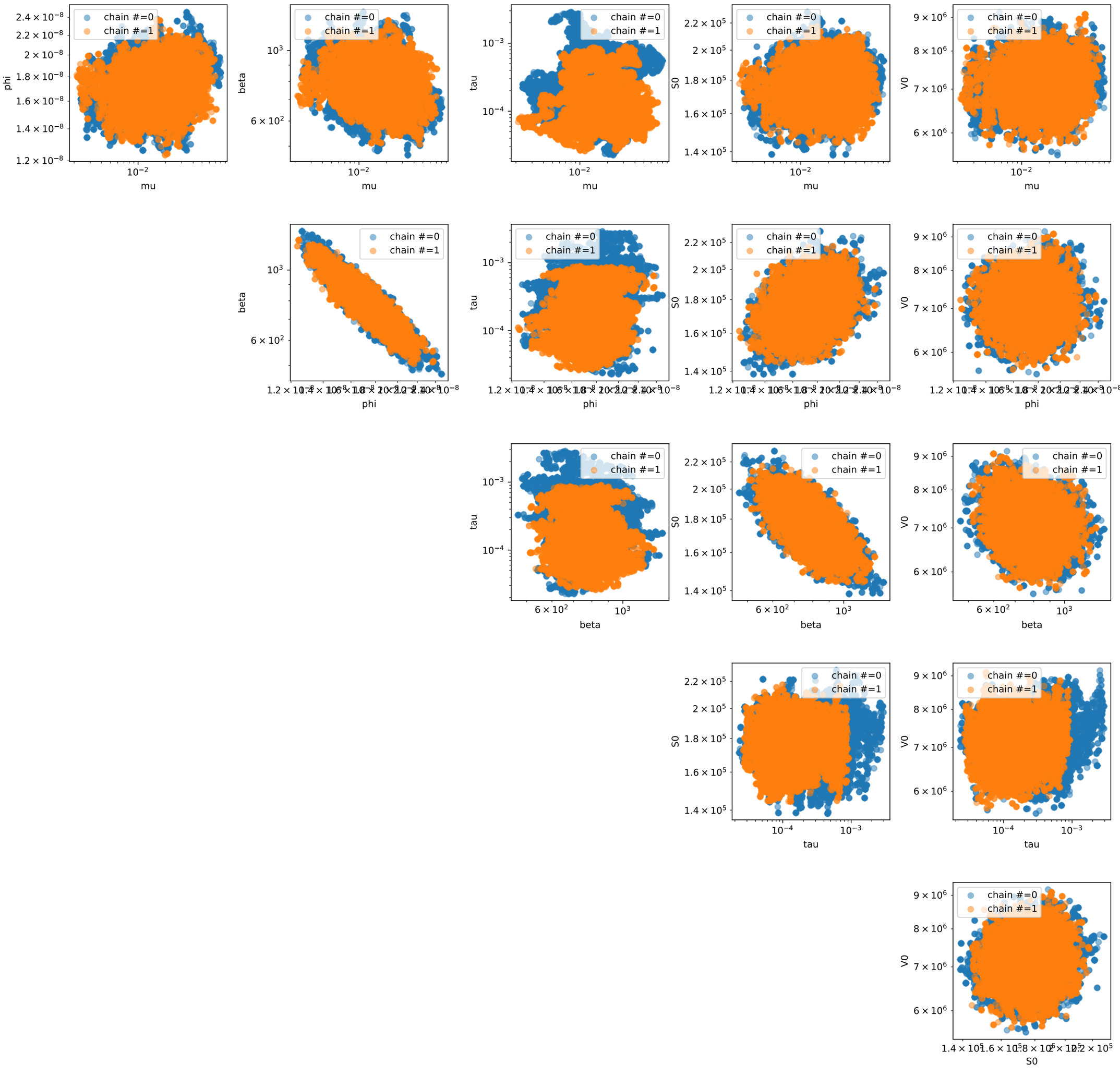
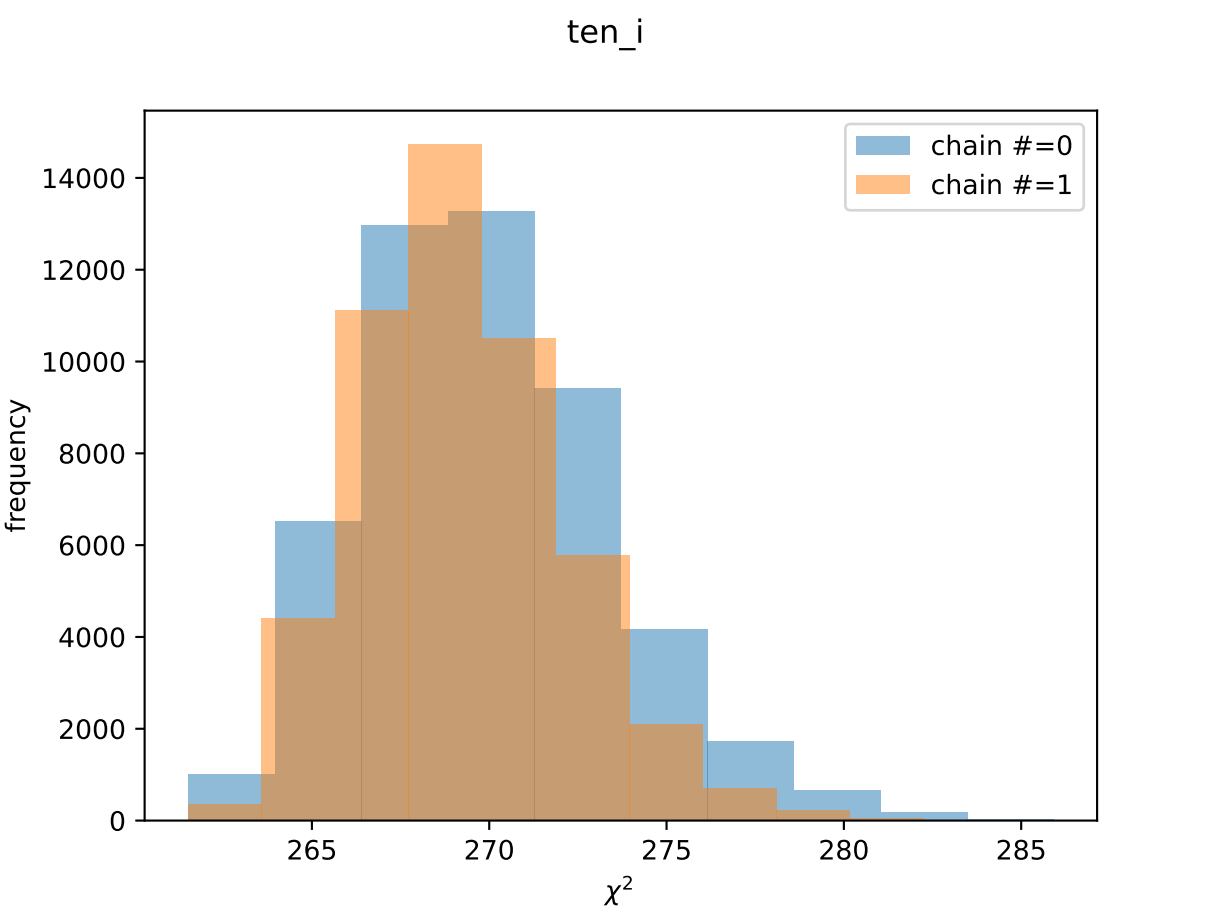
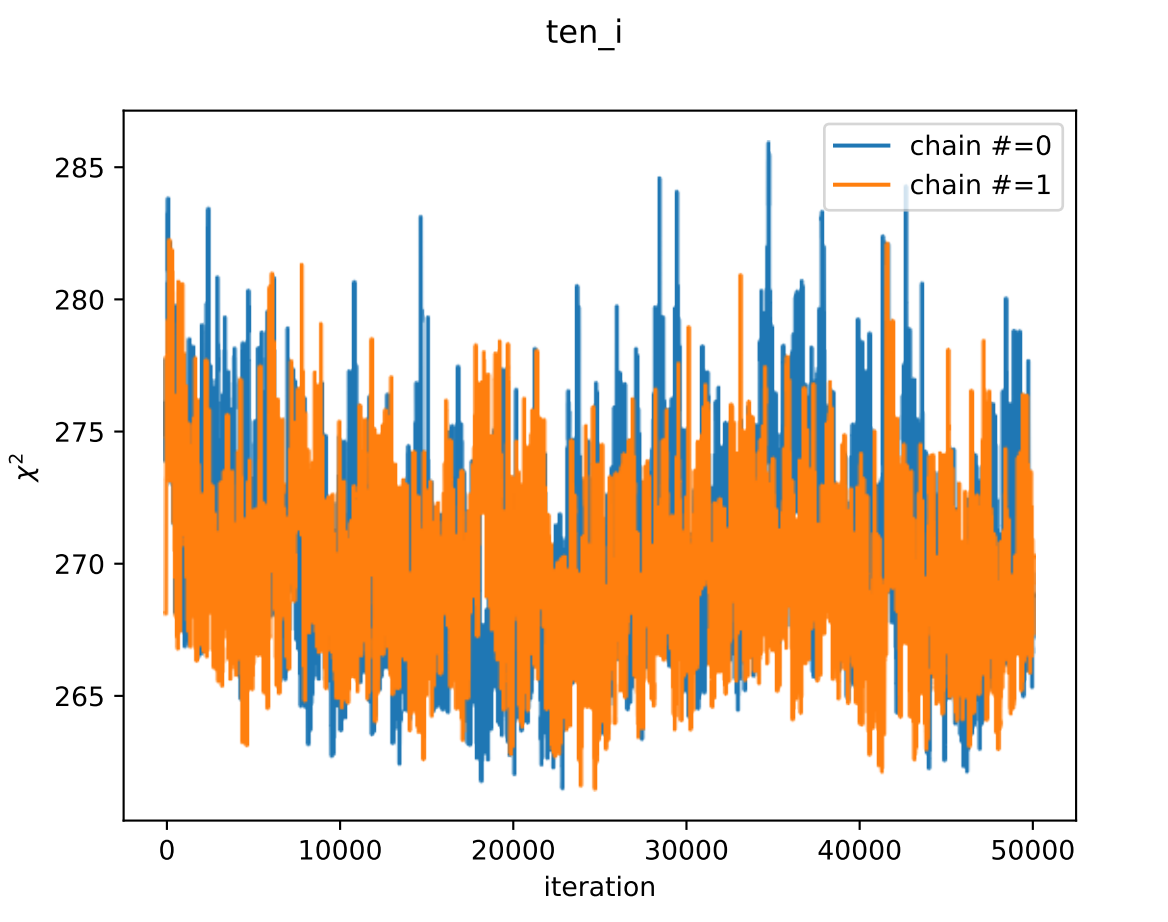
6.5
7.0
7.5
8.0
8.5
9.0
V0
1e6

ten_i




ten_i
chain #=0
chain #=1
14000
12000
10000
8000
6000
4000
2000
0
frequency
265
270
275
280
285
χ^2


ten_i
chain #=0
chain #=1
285
280
275
270
265
χ^2
0
10000
20000
30000
40000
50000
iteration