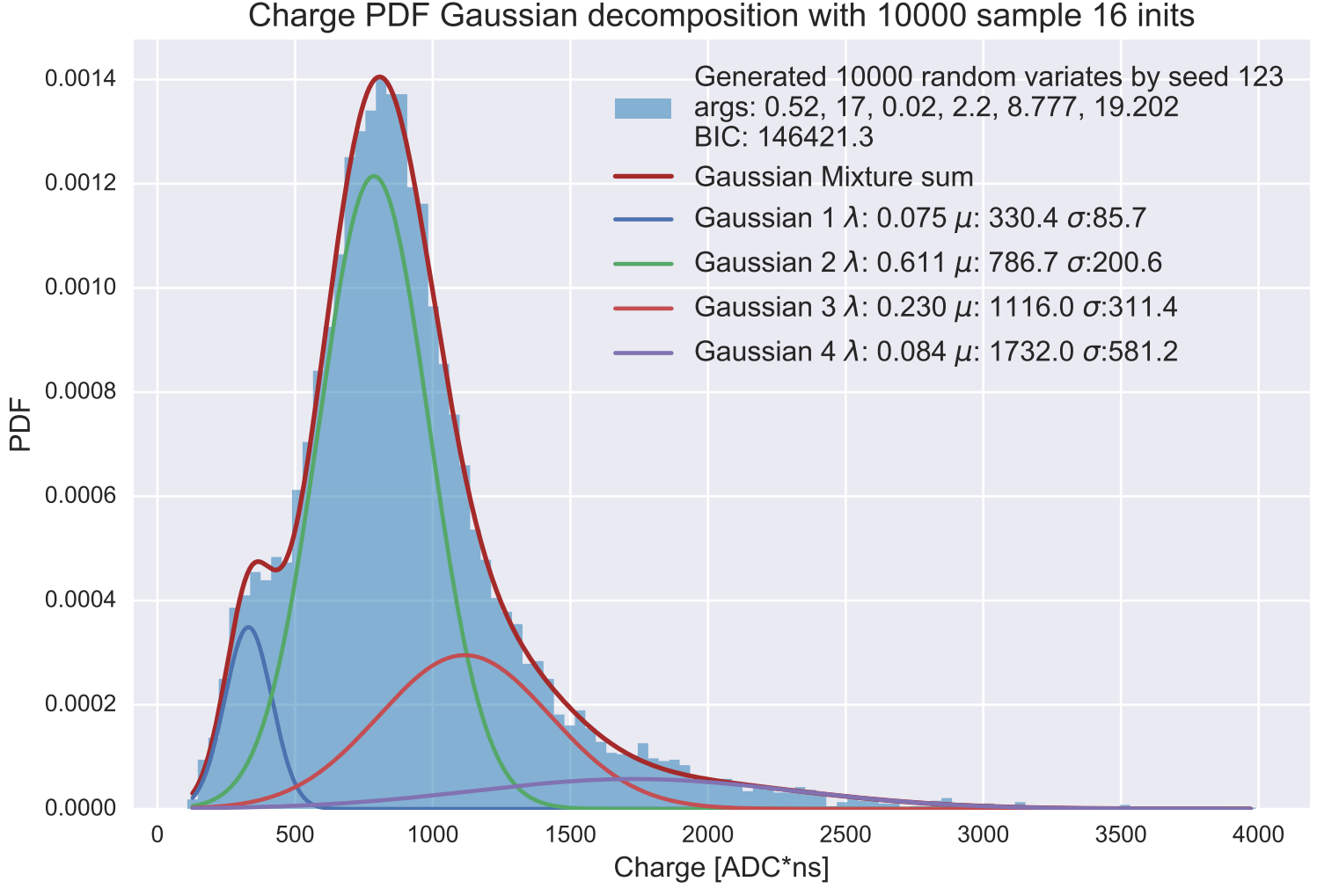
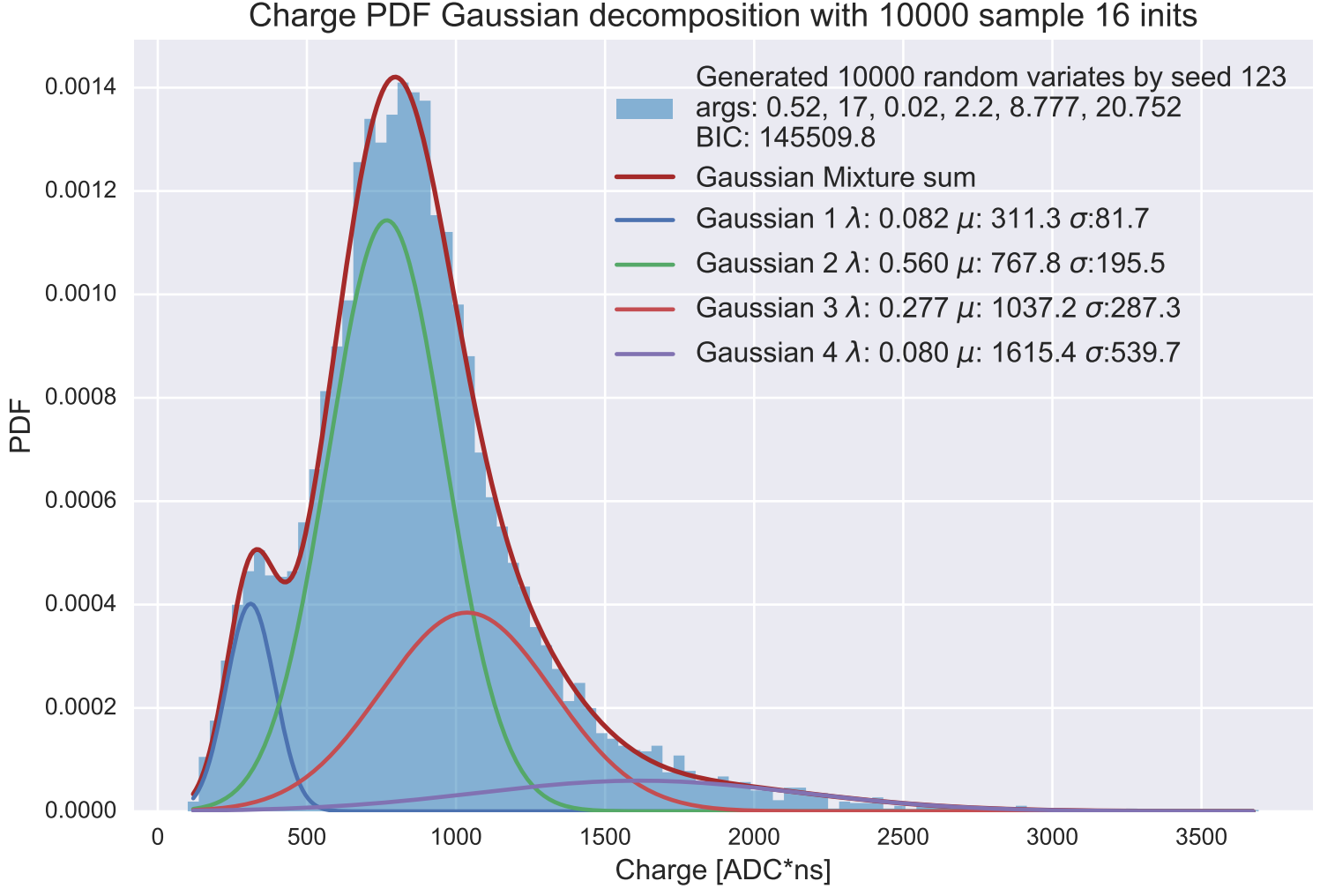
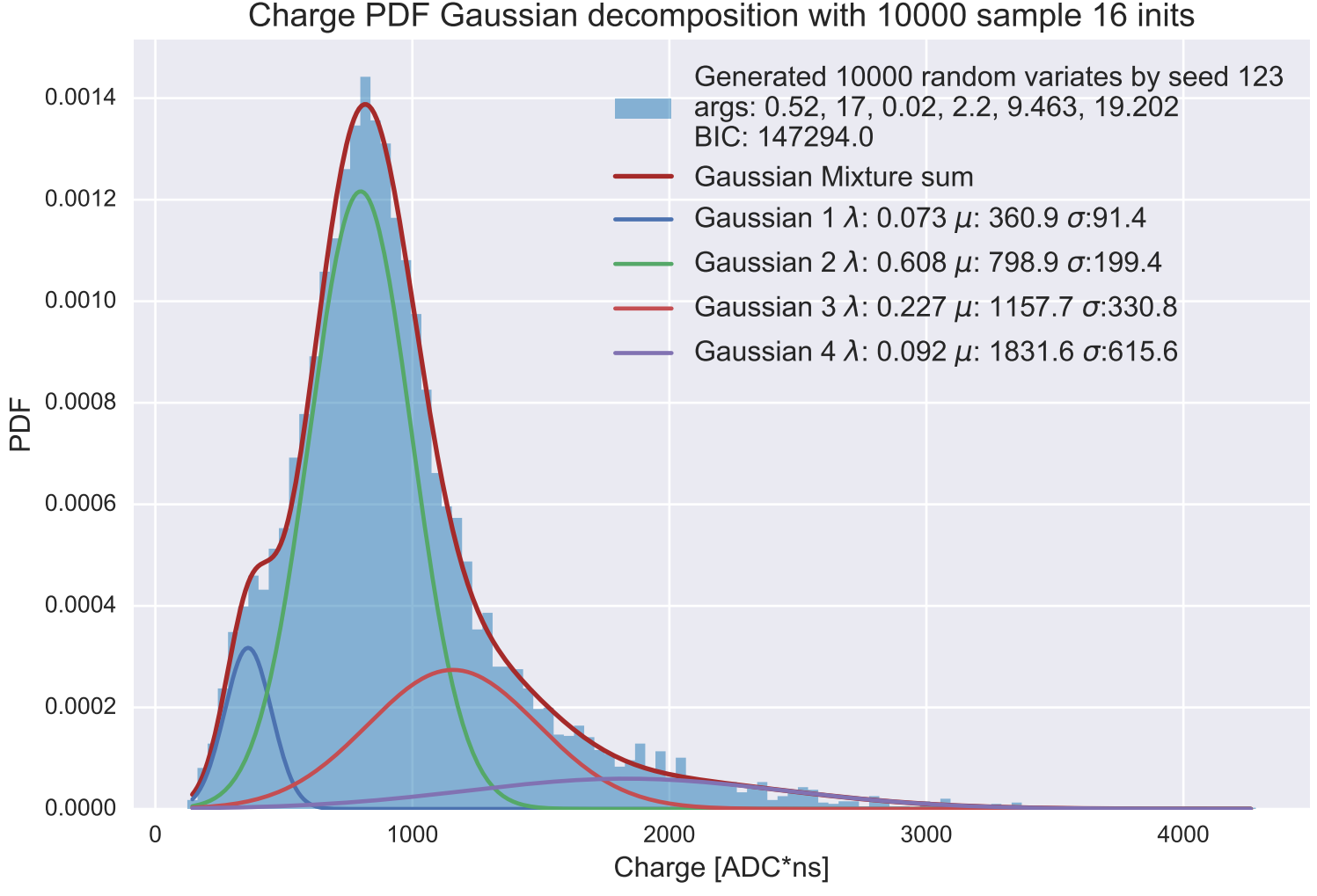
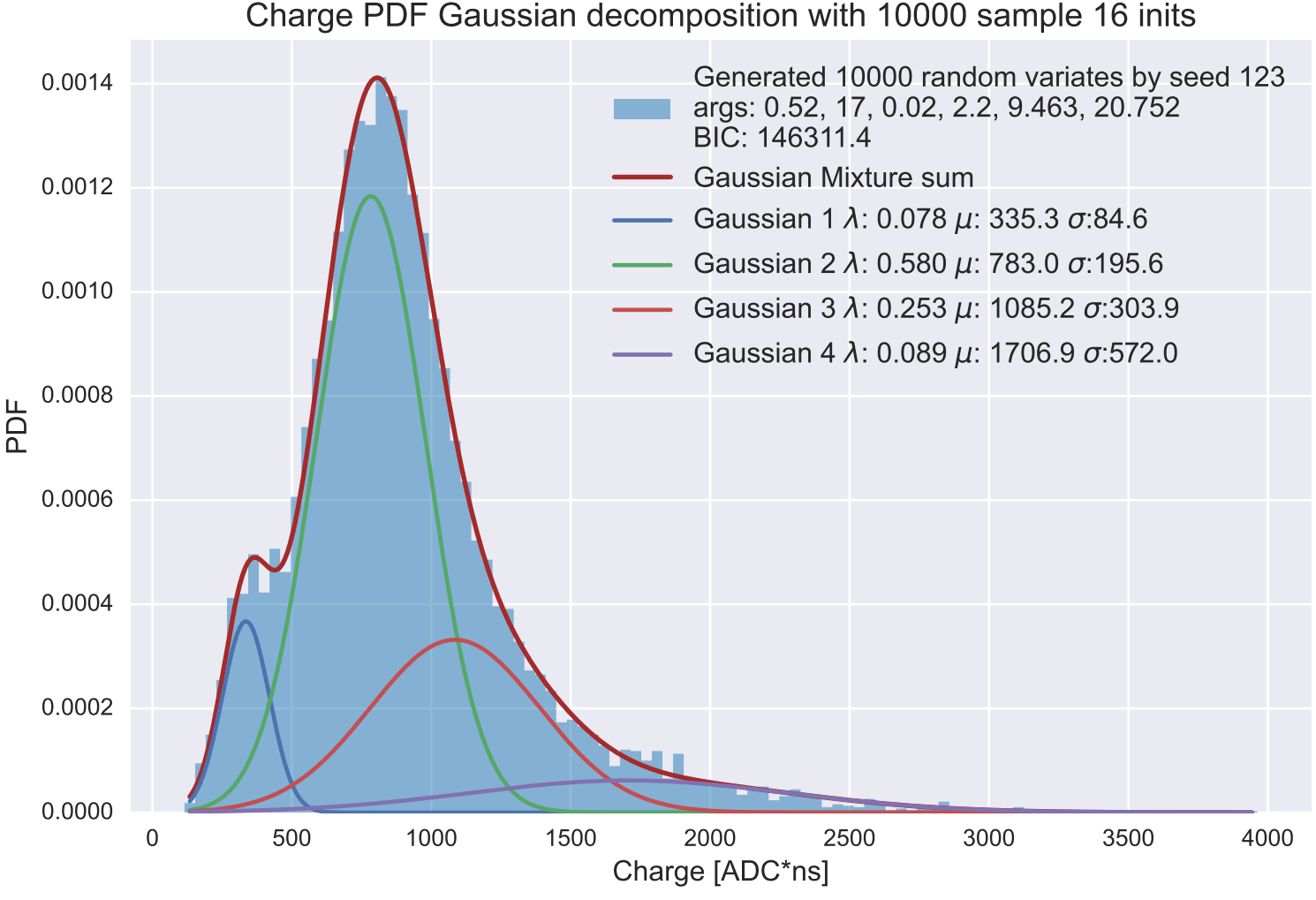
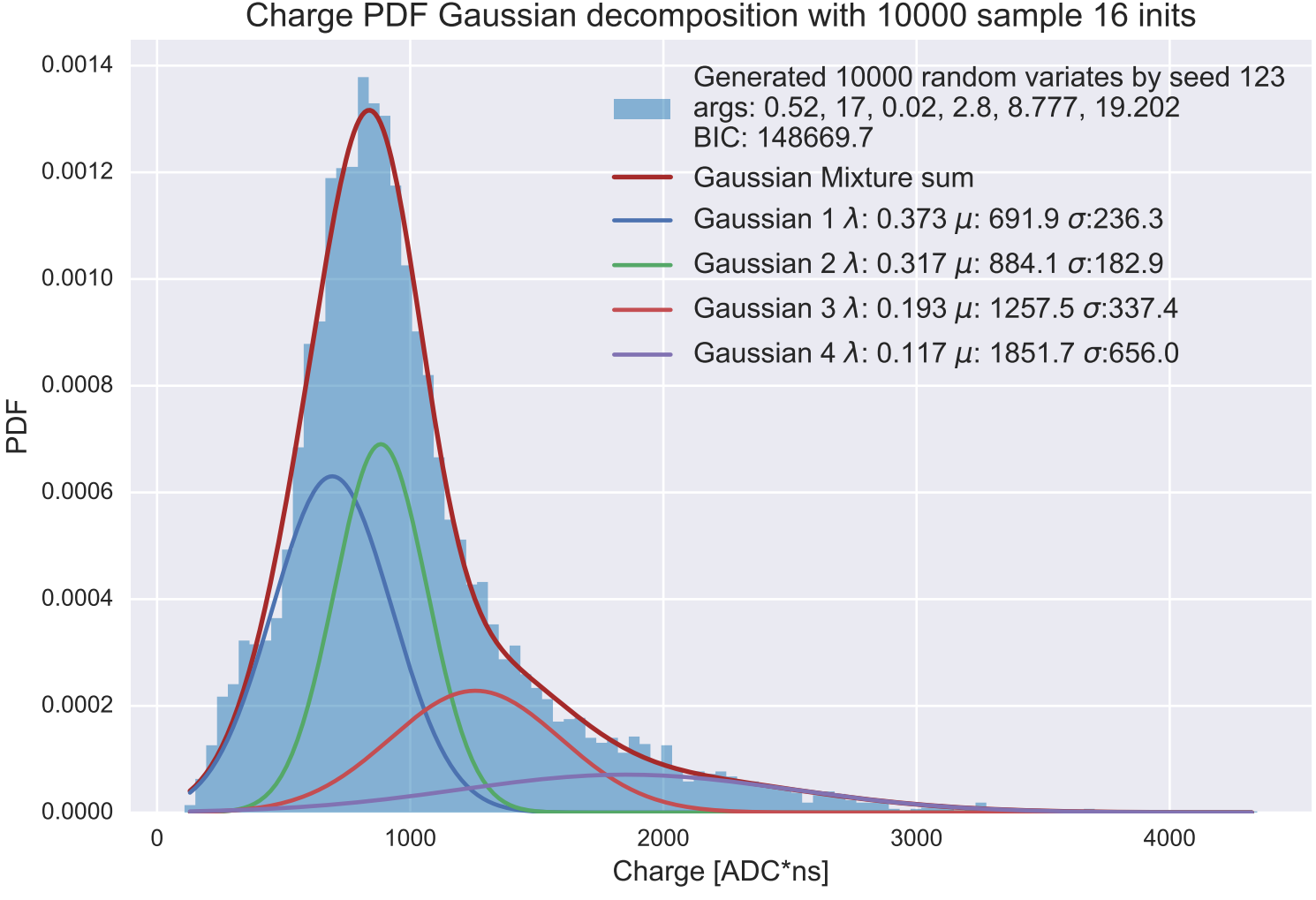
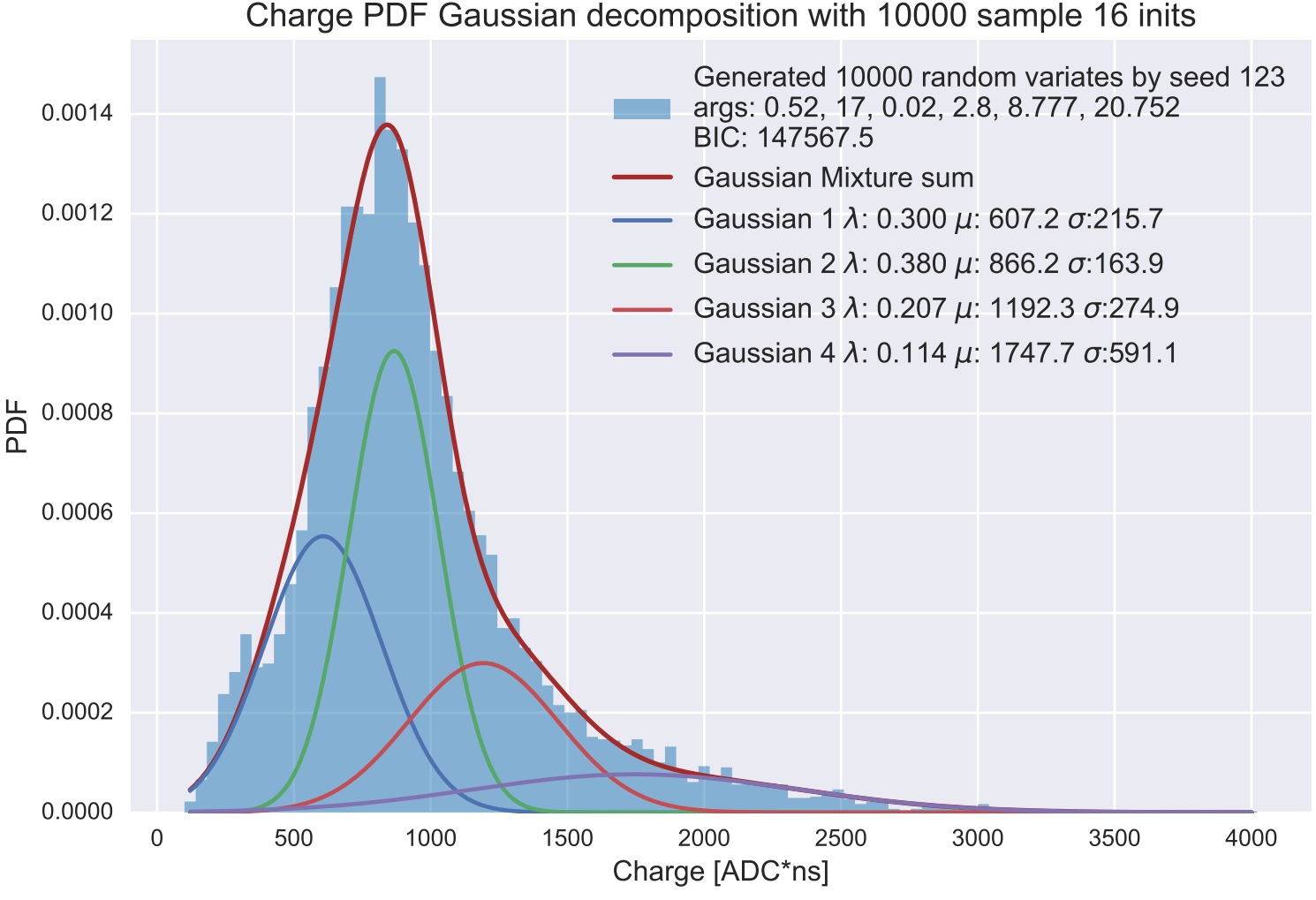

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.02, 2.2, 8.777, 19.202
BIC: 146421.3
Gaussian Mixture sum
Gaussian 1 λ: 0.075 μ: 330.4 σ:85.7
Gaussian 2 λ: 0.611 μ: 786.7 σ:200.6
Gaussian 3 λ: 0.230 μ: 1116.0 σ:311.4
Gaussian 4 λ: 0.084 μ: 1732.0 σ:581.2
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
1500
2000
2500
3000
3500
4000
Charge [ADC*ns]

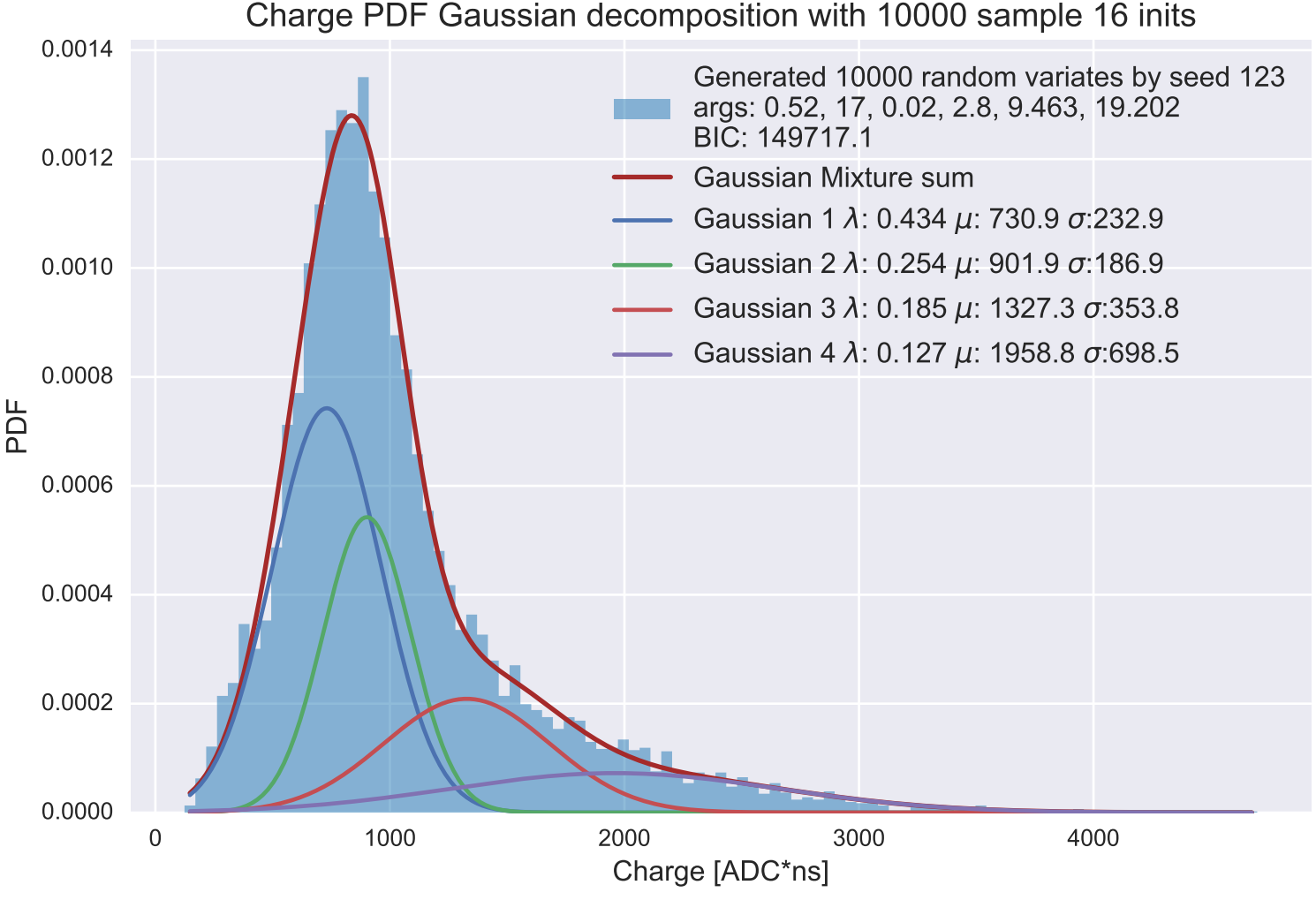

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.02, 2.2, 8.777, 20.752
BIC: 145509.8
Gaussian Mixture sum
Gaussian 1 λ: 0.082 μ: 311.3 σ:81.7
Gaussian 2 λ: 0.560 μ: 767.8 σ:195.5
Gaussian 3 λ: 0.277 μ: 1037.2 σ:287.3
Gaussian 4 λ: 0.080 μ: 1615.4 σ:539.7
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
1500
2000
2500
3000
3500
Charge [ADC*ns]

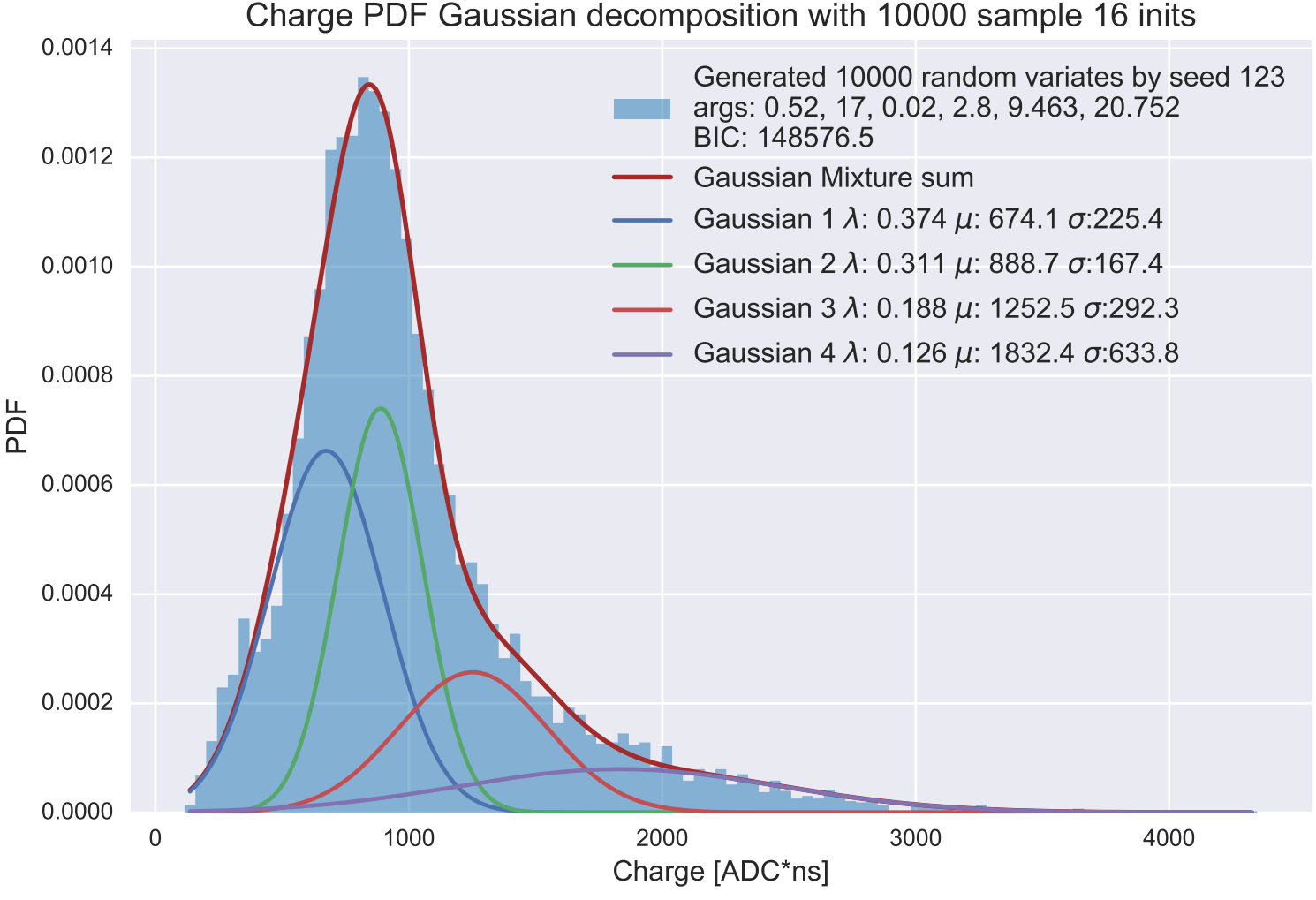

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.02, 2.2, 9.463, 19.202
BIC: 147294.0
Gaussian Mixture sum
Gaussian 1 λ: 0.073 μ: 360.9 σ:91.4
Gaussian 2 λ: 0.608 μ: 798.9 σ:199.4
Gaussian 3 λ: 0.227 μ: 1157.7 σ:330.8
Gaussian 4 λ: 0.092 μ: 1831.6 σ:615.6
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]

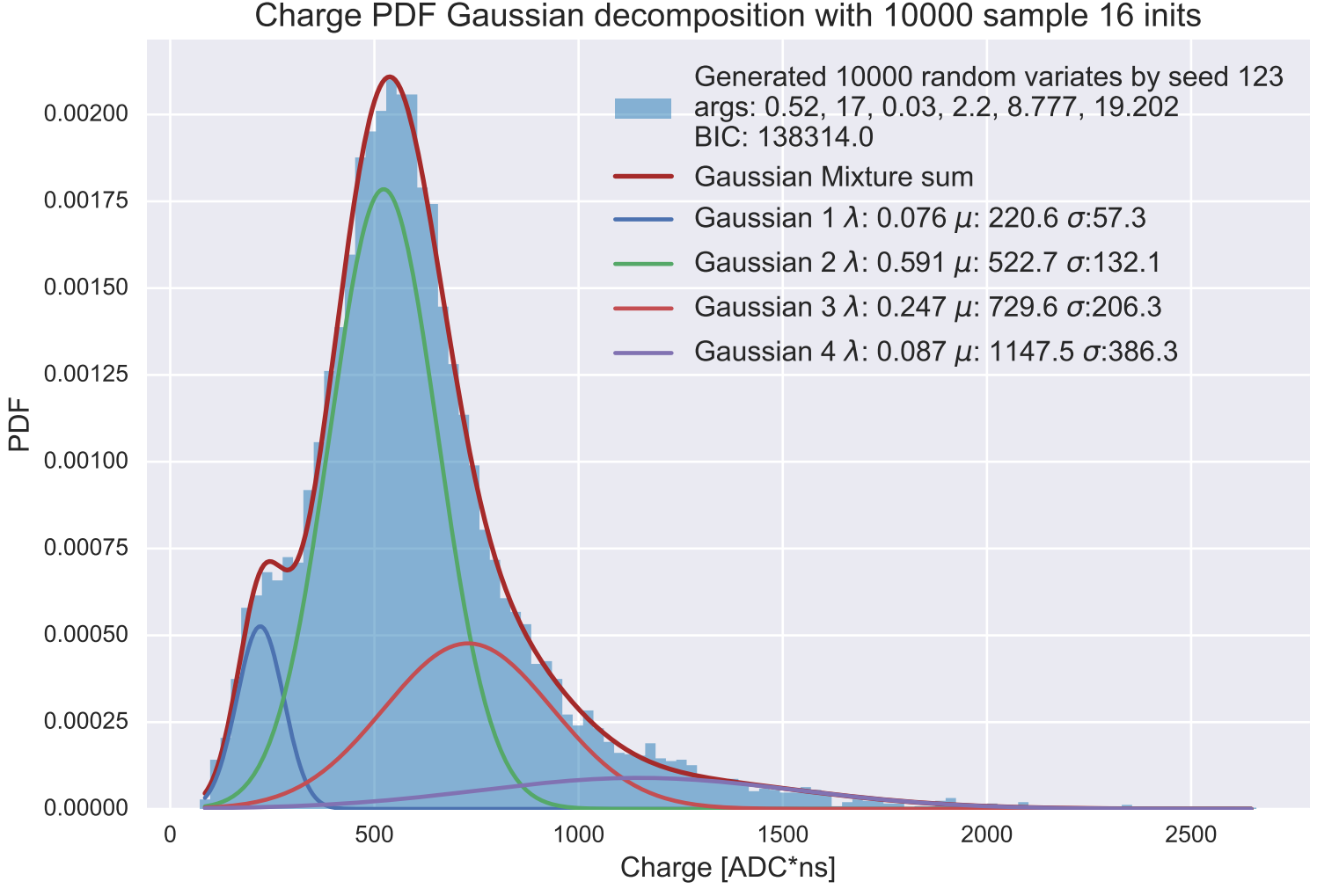

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.02, 2.2, 9.463, 20.752
BIC: 146311.4
Gaussian Mixture sum
Gaussian 1 λ: 0.078 μ: 335.3 σ:84.6
Gaussian 2 λ: 0.580 μ: 783.0 σ:195.6
Gaussian 3 λ: 0.253 μ: 1085.2 σ:303.9
Gaussian 4 λ: 0.089 μ: 1706.9 σ:572.0
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
1500
2000
2500
3000
3500
4000
Charge [ADC*ns]

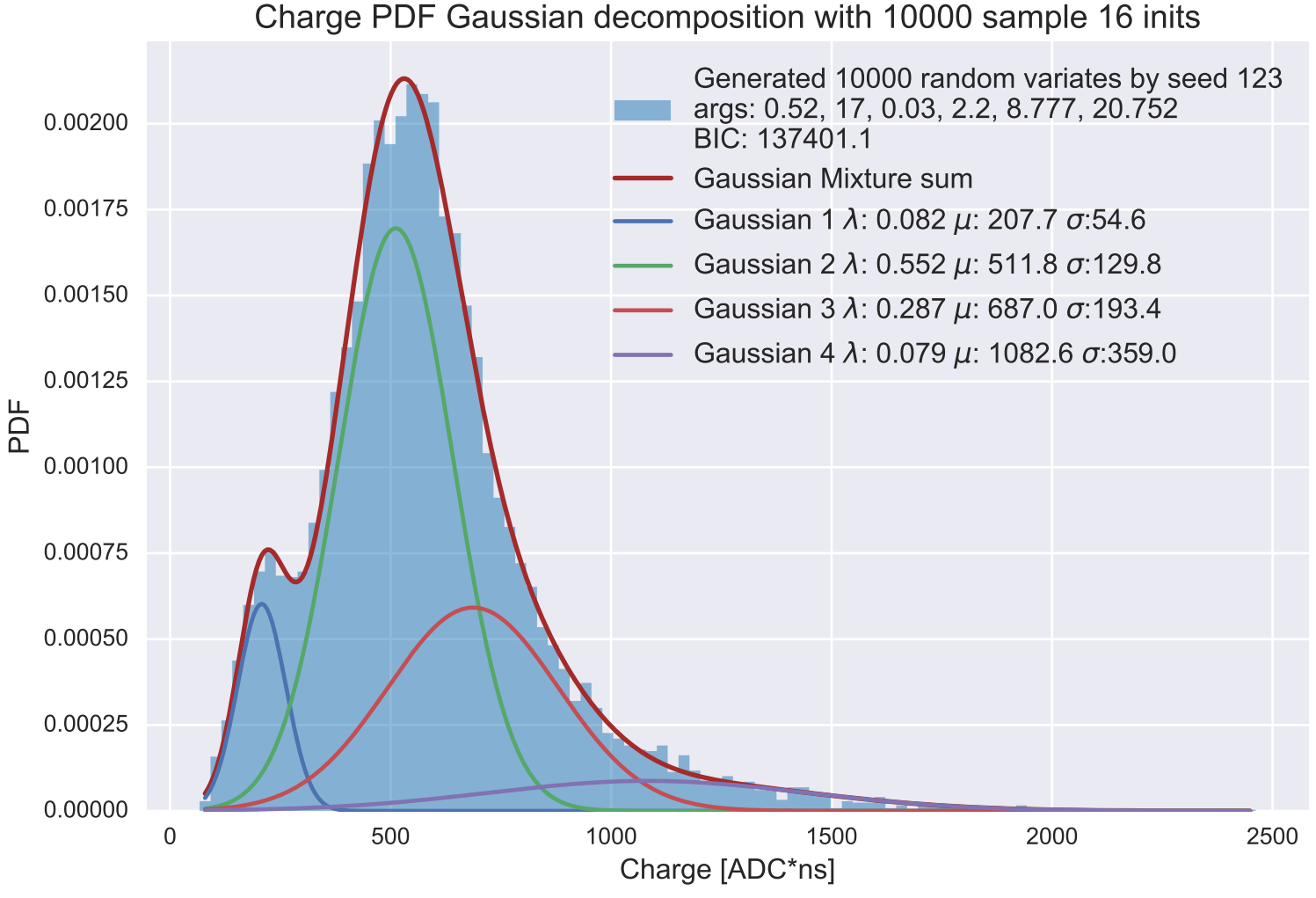

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.02, 2.8, 8.777, 19.202
BIC: 148669.7
Gaussian Mixture sum
Gaussian 1 λ: 0.373 μ: 691.9 σ:236.3
Gaussian 2 λ: 0.317 μ: 884.1 σ:182.9
Gaussian 3 λ: 0.193 μ: 1257.5 σ:337.4
Gaussian 4 λ: 0.117 μ: 1851.7 σ:656.0
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]

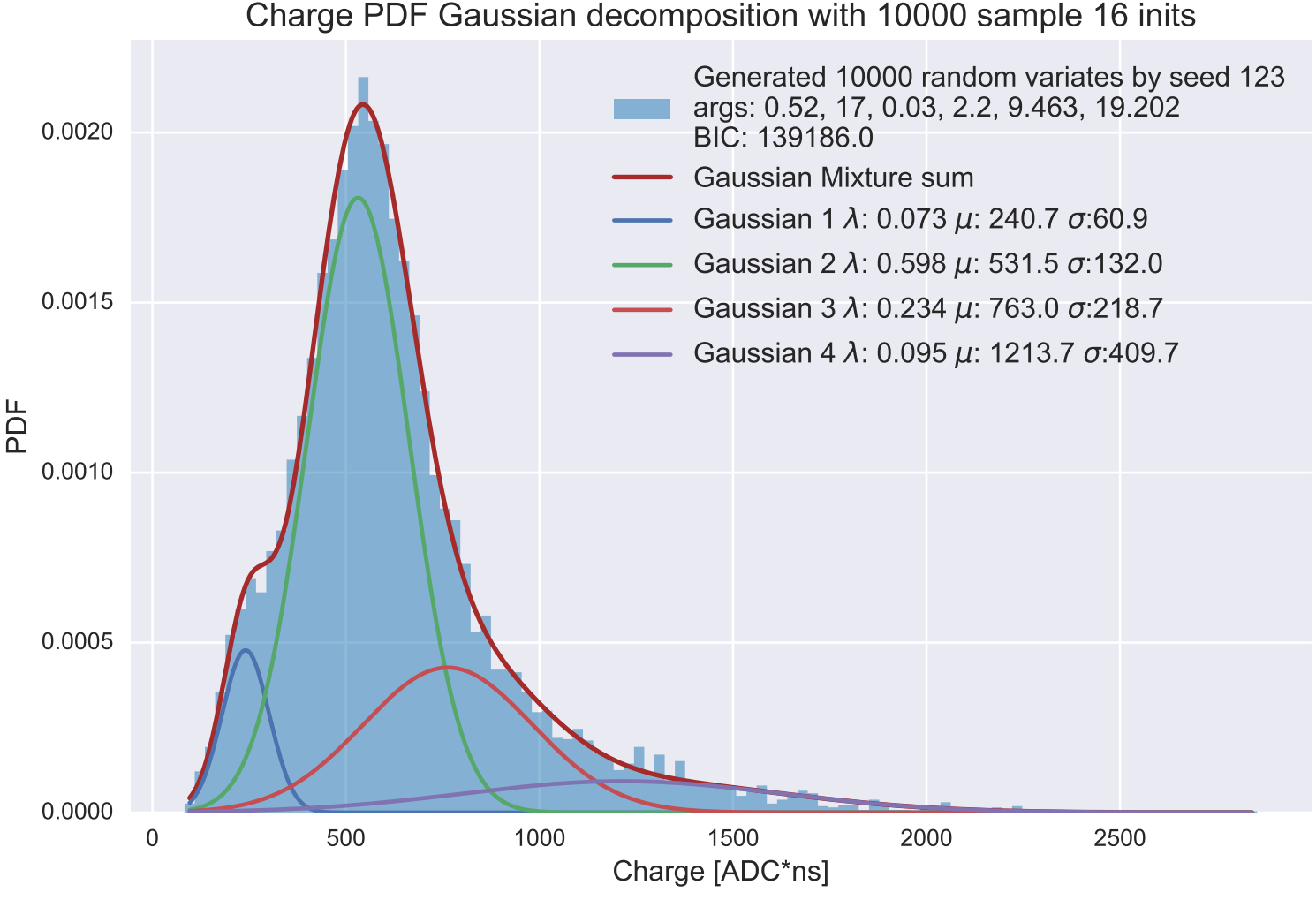

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.02, 2.8, 8.777, 20.752
BIC: 147567.5
Gaussian Mixture sum
Gaussian 1 λ: 0.300 μ: 607.2 σ:215.7
Gaussian 2 λ: 0.380 μ: 866.2 σ:163.9
Gaussian 3 λ: 0.207 μ: 1192.3 σ:274.9
Gaussian 4 λ: 0.114 μ: 1747.7 σ:591.1
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
1500
2000
2500
3000
3500
4000
Charge [ADC*ns]

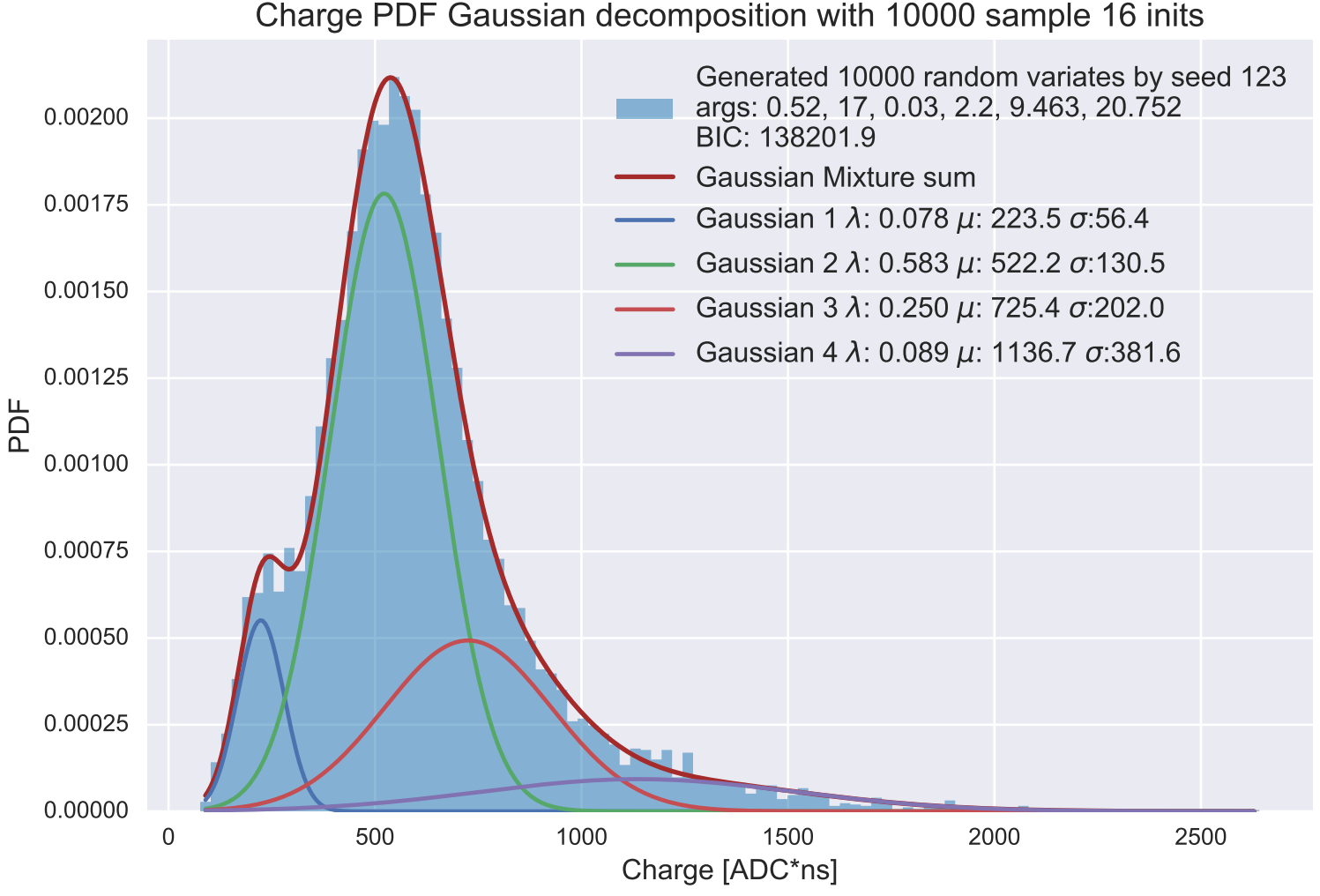

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.02, 2.8, 9.463, 19.202
BIC: 149717.1
Gaussian Mixture sum
Gaussian 1 λ: 0.434 μ: 730.9 σ:232.9
Gaussian 2 λ: 0.254 μ: 901.9 σ:186.9
Gaussian 3 λ: 0.185 μ: 1327.3 σ:353.8
Gaussian 4 λ: 0.127 μ: 1958.8 σ:698.5
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]

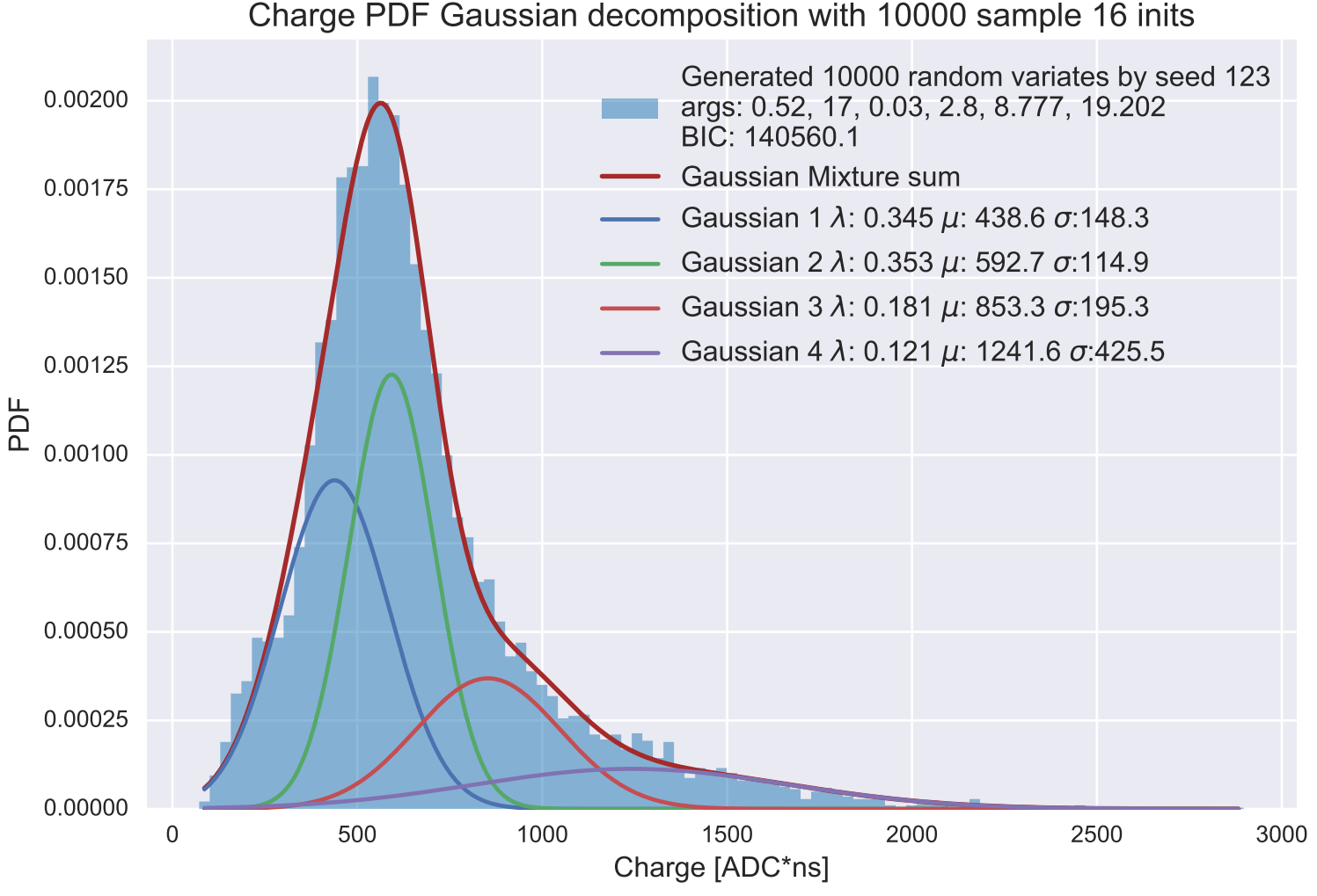

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.02, 2.8, 9.463, 20.752
BIC: 148576.5
Gaussian Mixture sum
Gaussian 1 λ: 0.374 μ: 674.1 σ:225.4
Gaussian 2 λ: 0.311 μ: 888.7 σ:167.4
Gaussian 3 λ: 0.188 μ: 1252.5 σ:292.3
Gaussian 4 λ: 0.126 μ: 1832.4 σ:633.8
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]

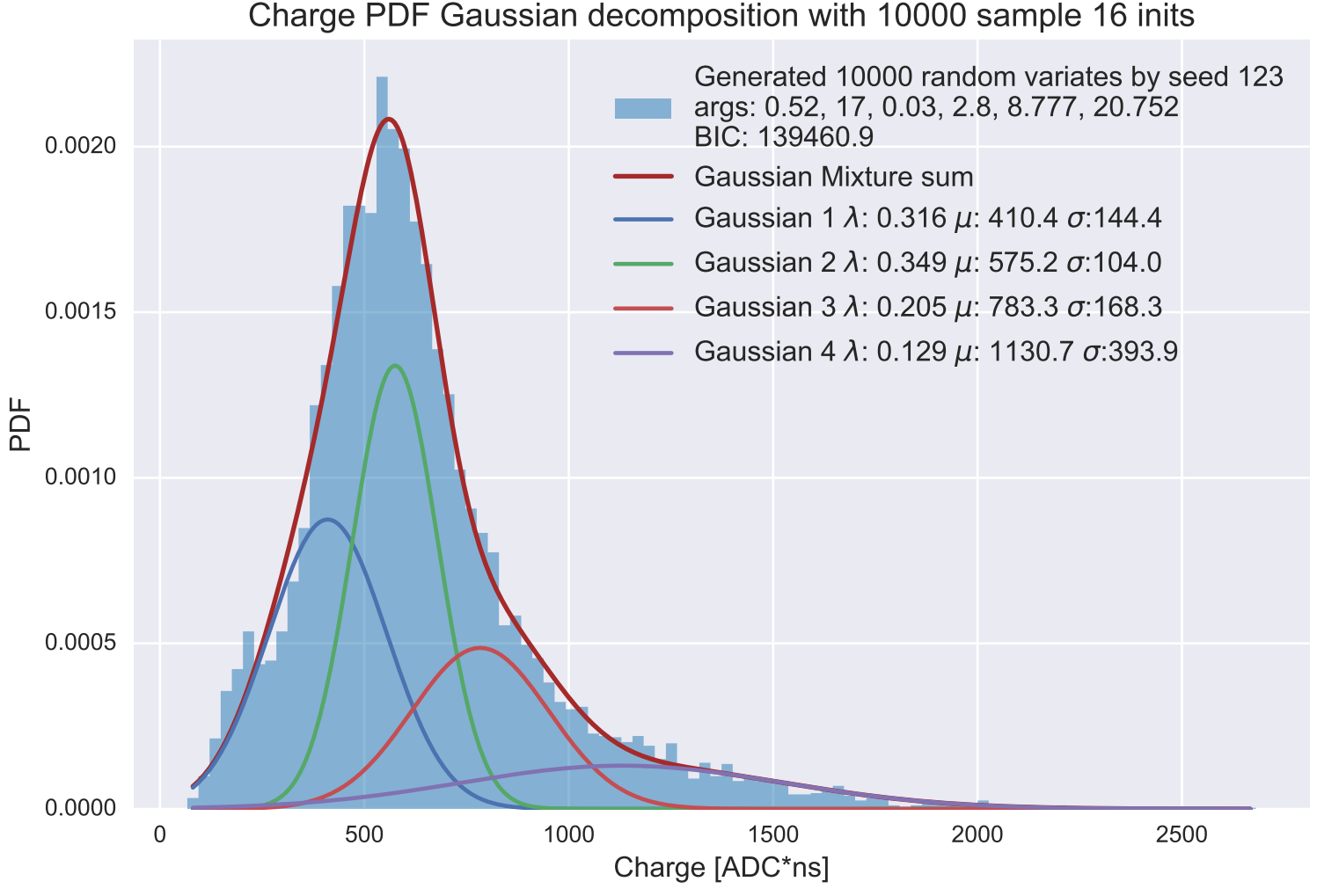

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.03, 2.2, 8.777, 19.202
BIC: 138314.0
Gaussian Mixture sum
Gaussian 1 λ: 0.076 μ: 220.6 σ:57.3
Gaussian 2 λ: 0.591 μ: 522.7 σ:132.1
Gaussian 3 λ: 0.247 μ: 729.6 σ:206.3
Gaussian 4 λ: 0.087 μ: 1147.5 σ:386.3
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
Charge [ADC*ns]

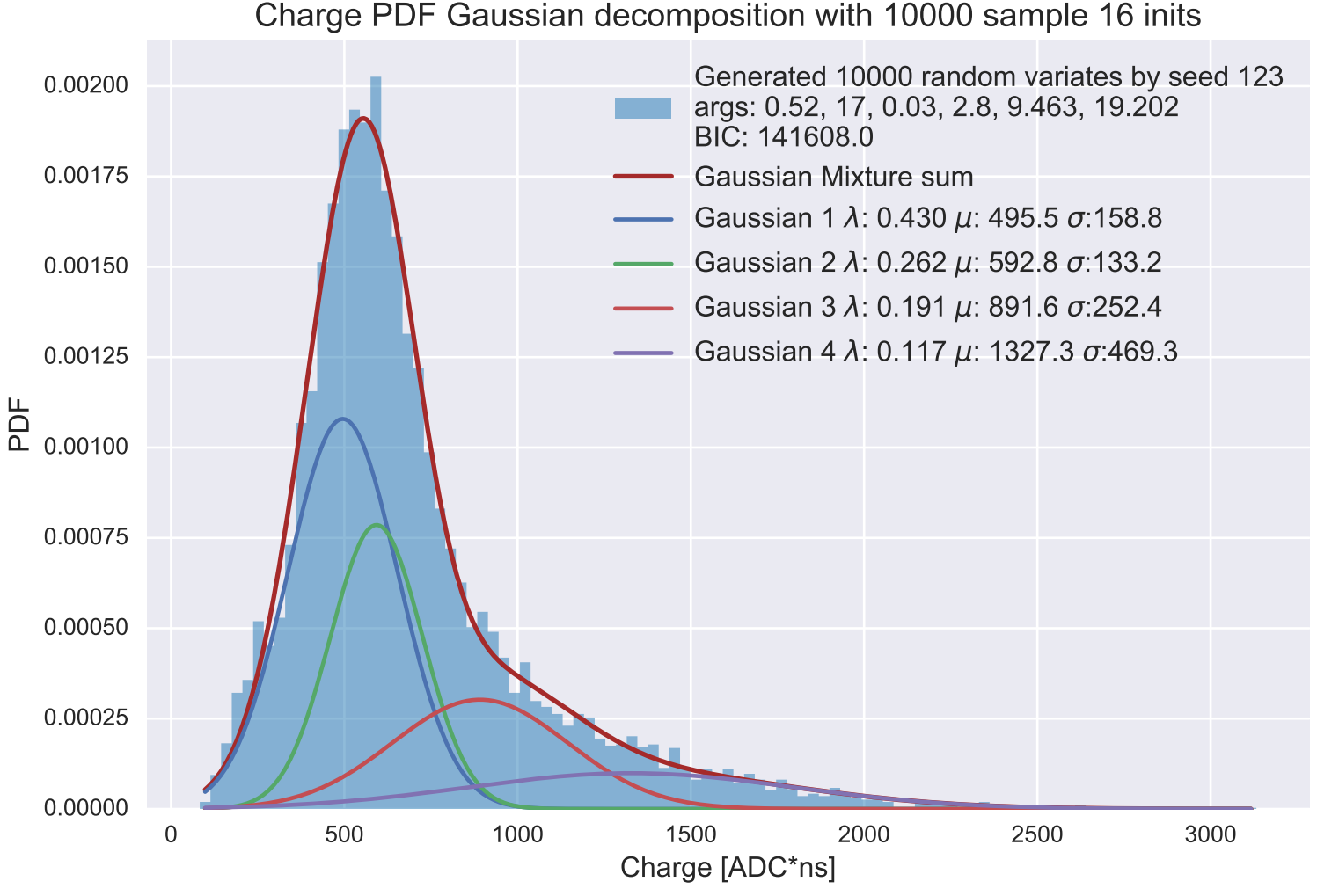

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.03, 2.2, 8.777, 20.752
BIC: 137401.1
Gaussian Mixture sum
Gaussian 1 λ: 0.082 μ: 207.7 σ:54.6
Gaussian 2 λ: 0.552 μ: 511.8 σ:129.8
Gaussian 3 λ: 0.287 μ: 687.0 σ:193.4
Gaussian 4 λ: 0.079 μ: 1082.6 σ:359.0
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
Charge [ADC*ns]

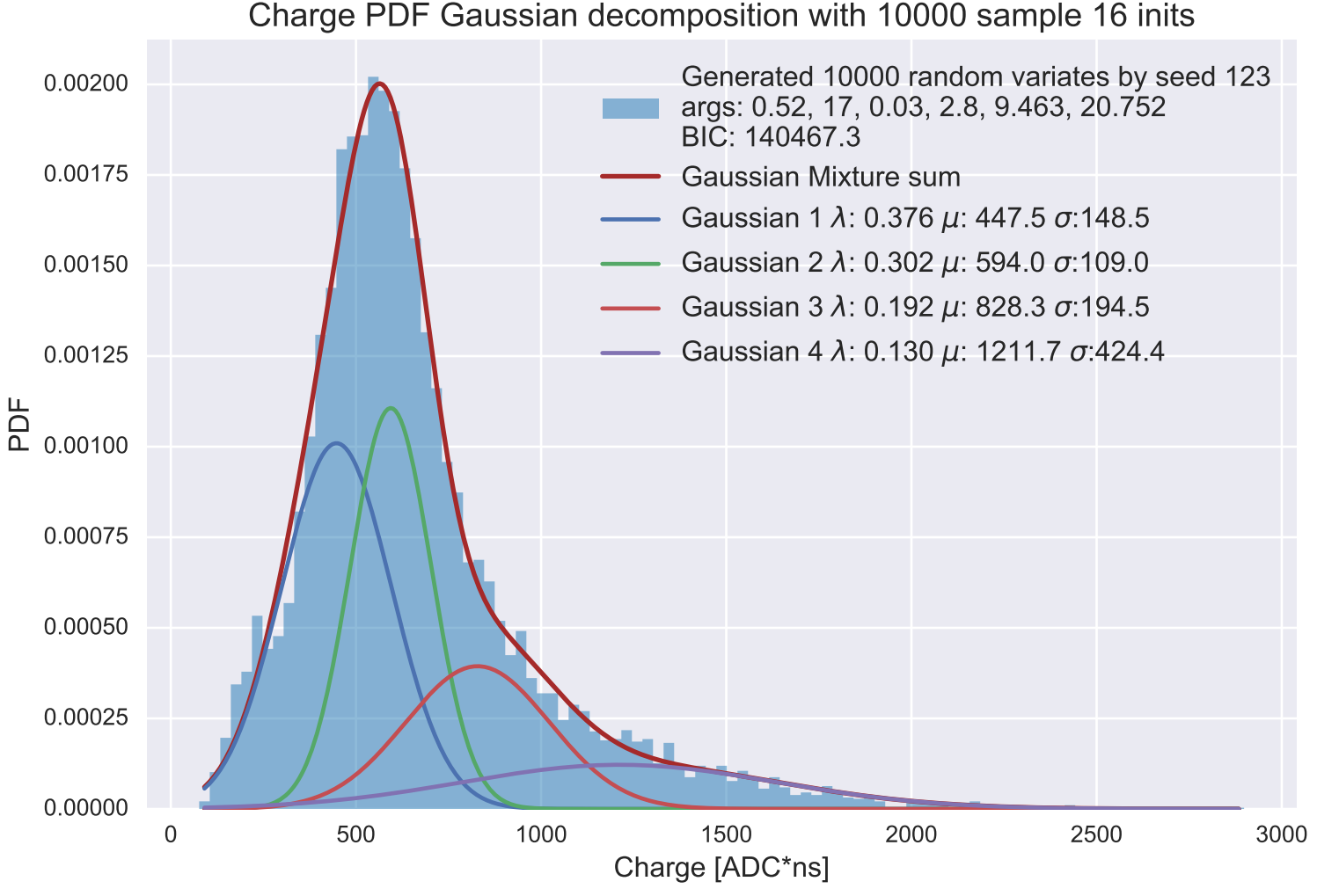

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.03, 2.2, 9.463, 19.202
BIC: 139186.0
Gaussian Mixture sum
Gaussian 1 λ: 0.073 μ: 240.7 σ:60.9
Gaussian 2 λ: 0.598 μ: 531.5 σ:132.0
Gaussian 3 λ: 0.234 μ: 763.0 σ:218.7
Gaussian 4 λ: 0.095 μ: 1213.7 σ:409.7
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
0
500
1000
1500
2000
2500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.03, 2.2, 9.463, 20.752
BIC: 138201.9
Gaussian Mixture sum
Gaussian 1 λ: 0.078 μ: 223.5 σ:56.4
Gaussian 2 λ: 0.583 μ: 522.2 σ:130.5
Gaussian 3 λ: 0.250 μ: 725.4 σ:202.0
Gaussian 4 λ: 0.089 μ: 1136.7 σ:381.6
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.03, 2.8, 8.777, 19.202
BIC: 140560.1
Gaussian Mixture sum
Gaussian 1 λ: 0.345 μ: 438.6 σ:148.3
Gaussian 2 λ: 0.353 μ: 592.7 σ:114.9
Gaussian 3 λ: 0.181 μ: 853.3 σ:195.3
Gaussian 4 λ: 0.121 μ: 1241.6 σ:425.5
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.03, 2.8, 8.777, 20.752
BIC: 139460.9
Gaussian Mixture sum
Gaussian 1 λ: 0.316 μ: 410.4 σ:144.4
Gaussian 2 λ: 0.349 μ: 575.2 σ:104.0
Gaussian 3 λ: 0.205 μ: 783.3 σ:168.3
Gaussian 4 λ: 0.129 μ: 1130.7 σ:393.9
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
0
500
1000
1500
2000
2500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.03, 2.8, 9.463, 19.202
BIC: 141608.0
Gaussian Mixture sum
Gaussian 1 λ: 0.430 μ: 495.5 σ:158.8
Gaussian 2 λ: 0.262 μ: 592.8 σ:133.2
Gaussian 3 λ: 0.191 μ: 891.6 σ:252.4
Gaussian 4 λ: 0.117 μ: 1327.3 σ:469.3
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 17, 0.03, 2.8, 9.463, 20.752
BIC: 140467.3
Gaussian Mixture sum
Gaussian 1 λ: 0.376 μ: 447.5 σ:148.5
Gaussian 2 λ: 0.302 μ: 594.0 σ:109.0
Gaussian 3 λ: 0.192 μ: 828.3 σ:194.5
Gaussian 4 λ: 0.130 μ: 1211.7 σ:424.4
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
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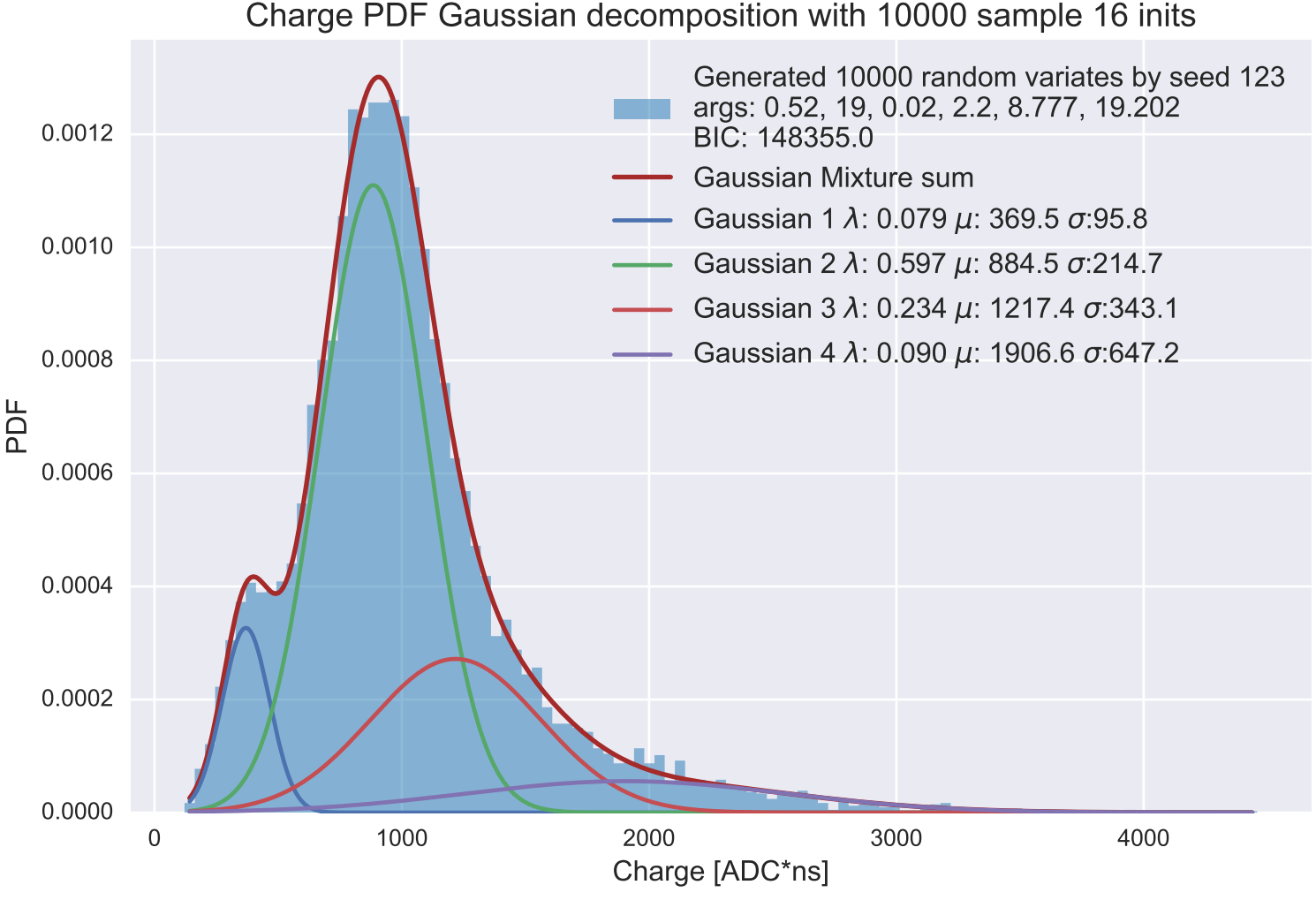
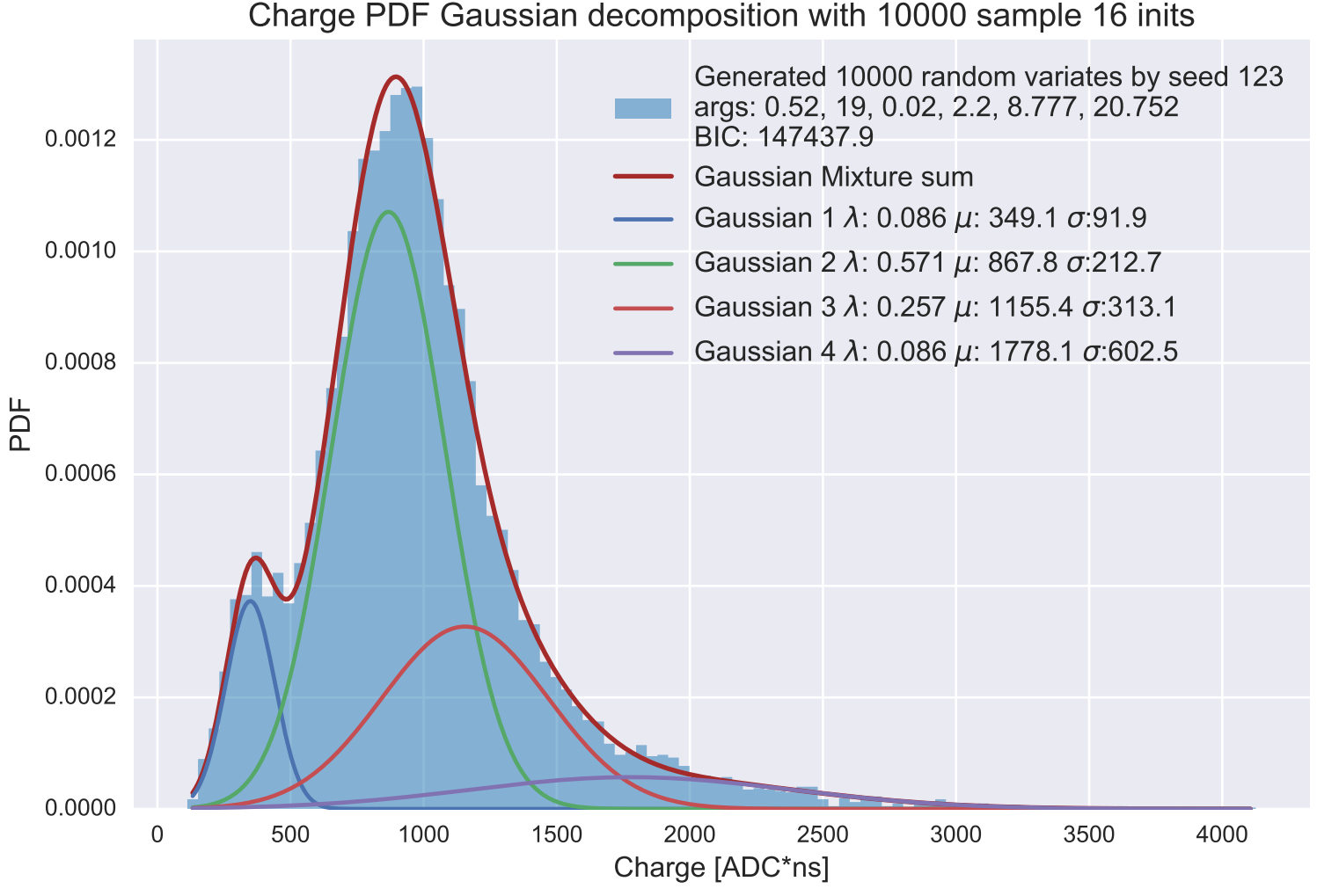
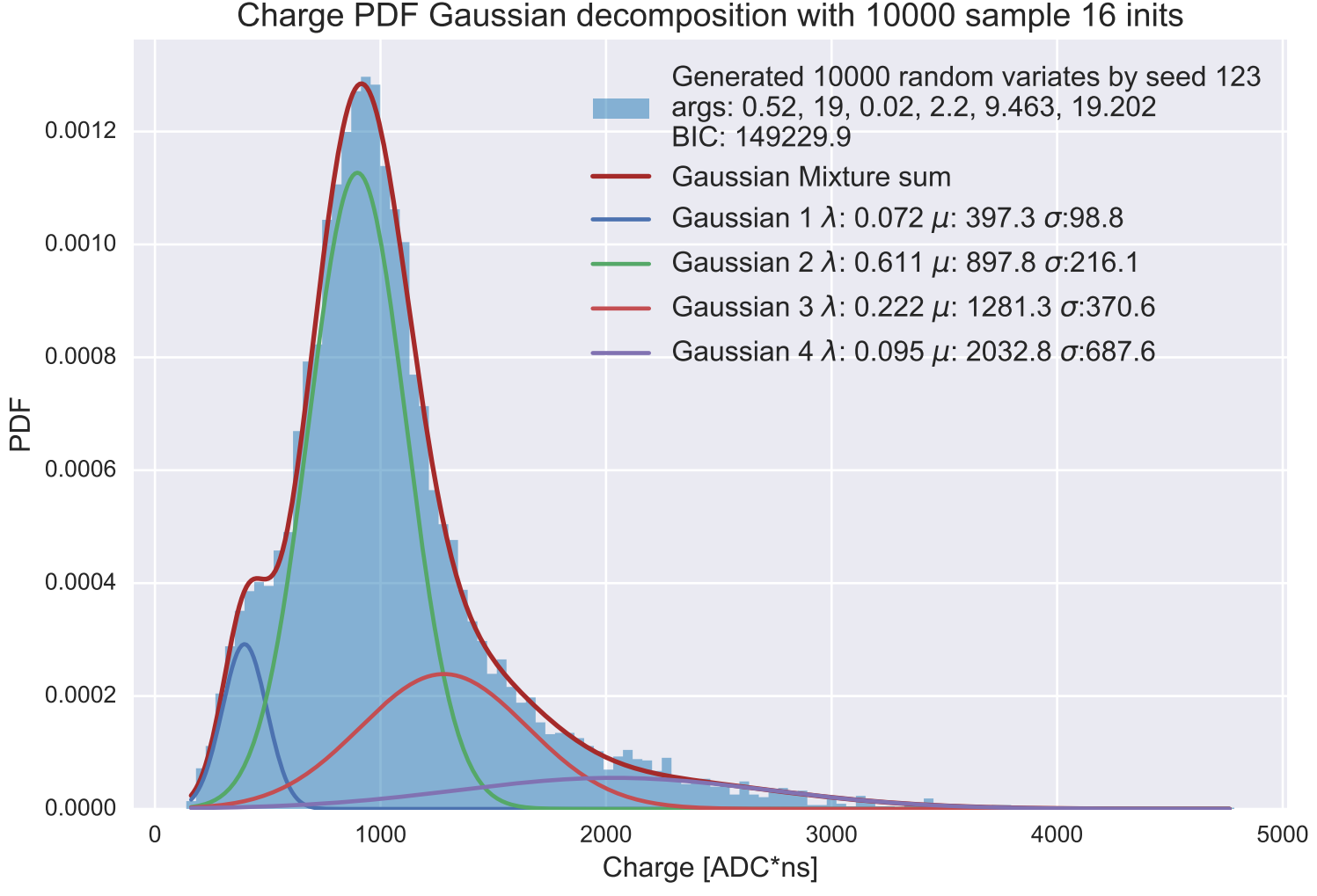
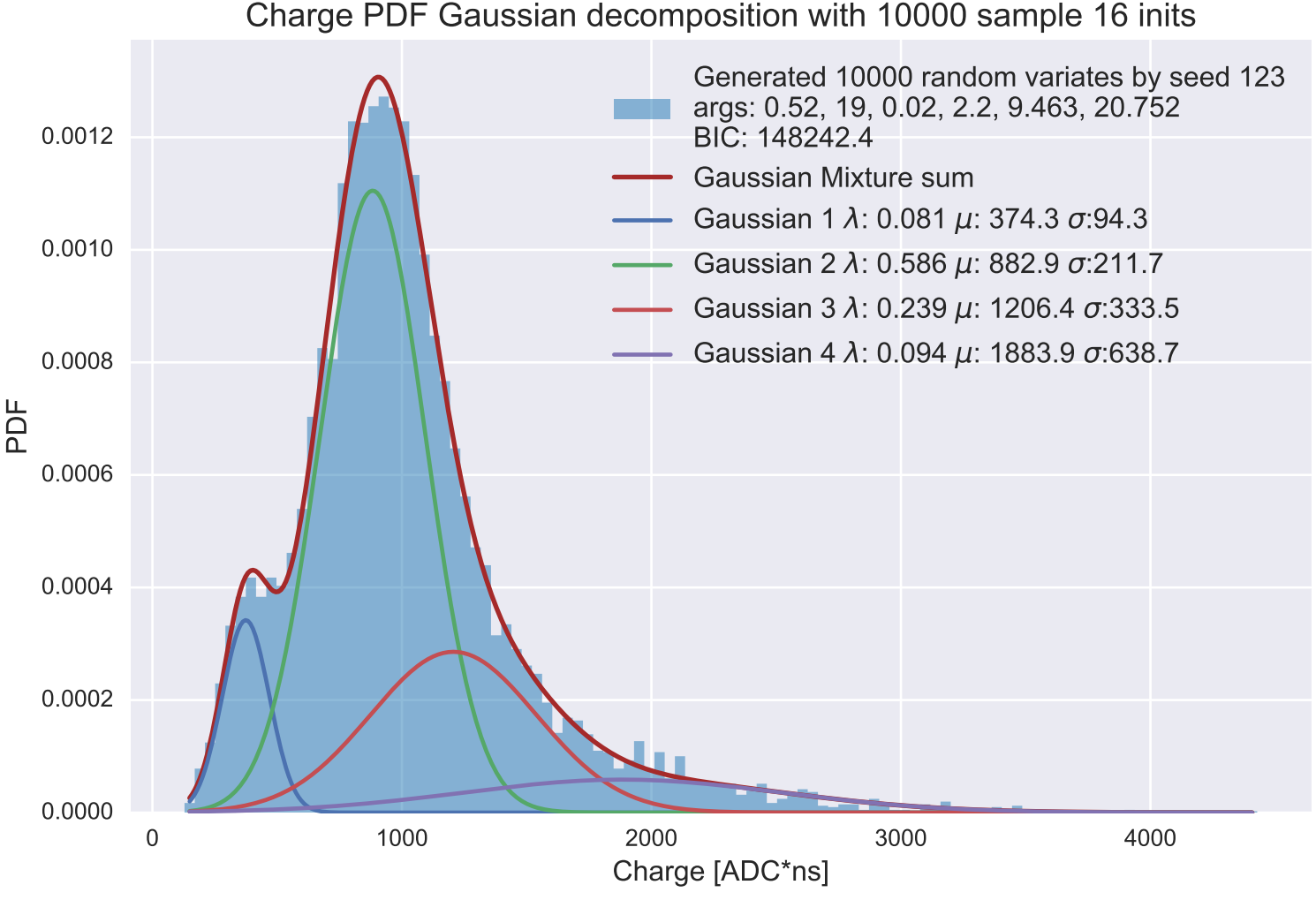
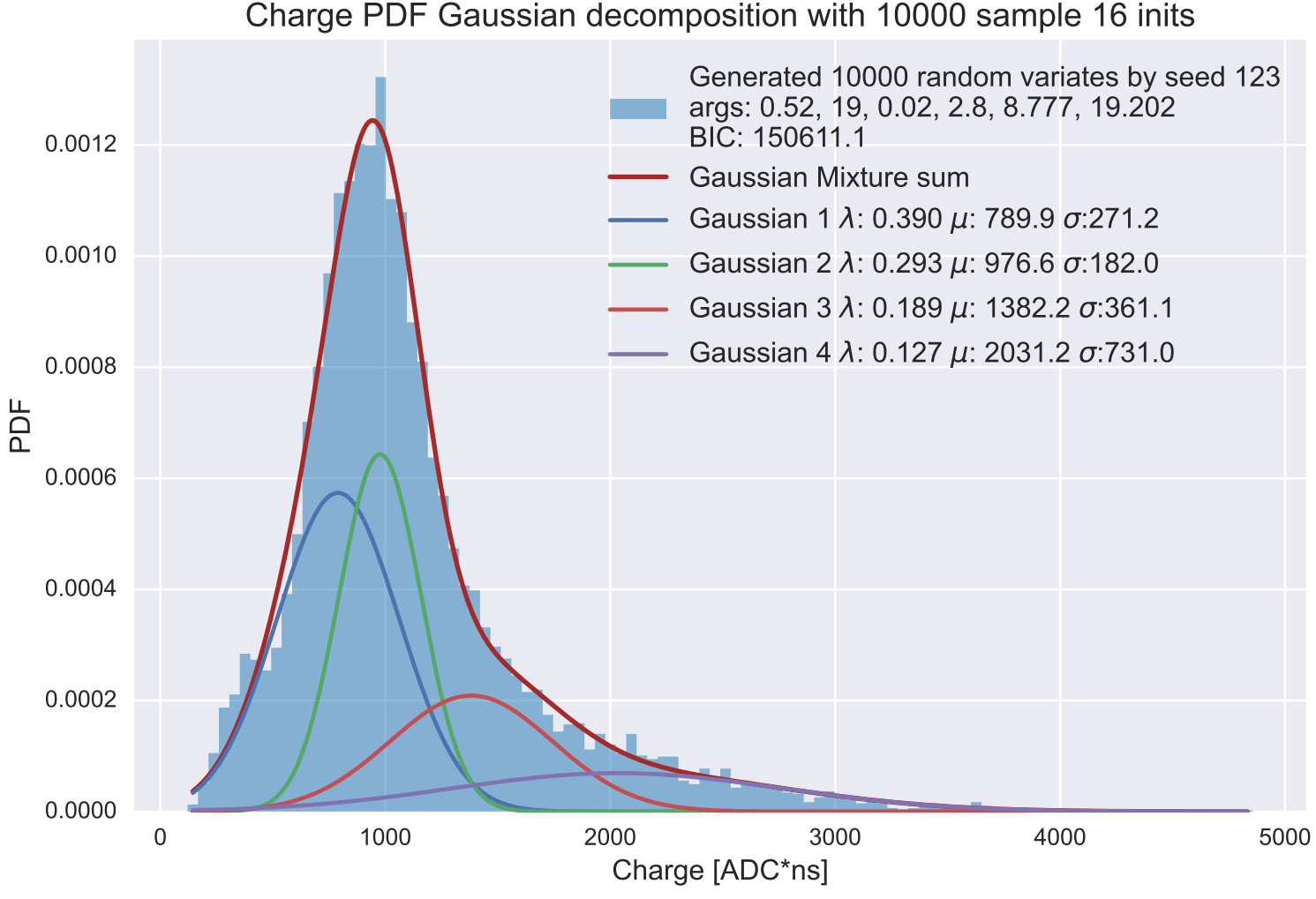
2000
2500
3000
Charge [ADC*ns]

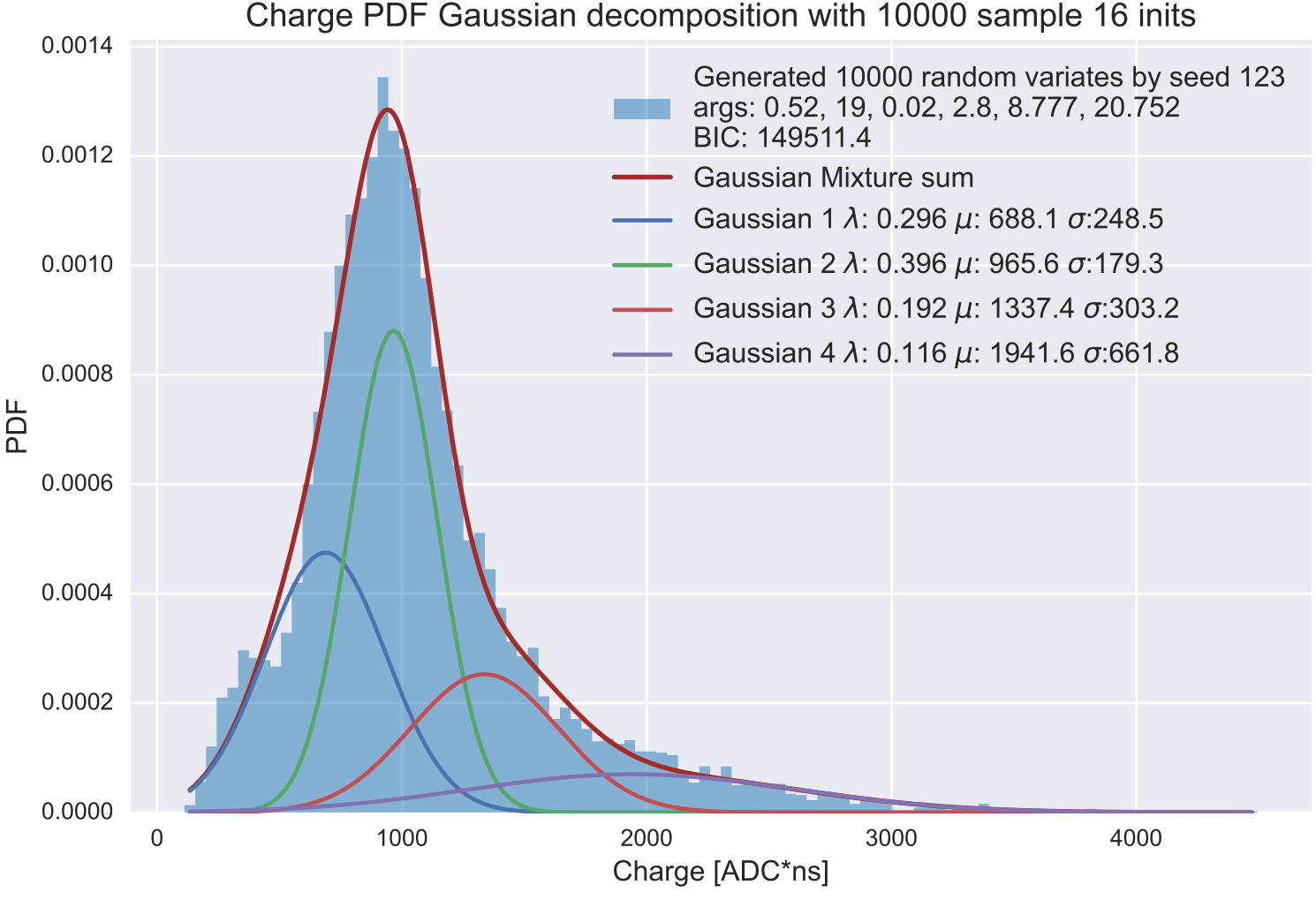

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.02, 2.2, 8.777, 19.202
BIC: 148355.0
Gaussian Mixture sum
Gaussian 1 λ: 0.079 μ: 369.5 σ:95.8
Gaussian 2 λ: 0.597 μ: 884.5 σ:214.7
Gaussian 3 λ: 0.234 μ: 1217.4 σ:343.1
Gaussian 4 λ: 0.090 μ: 1906.6 σ:647.2
PDF
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]

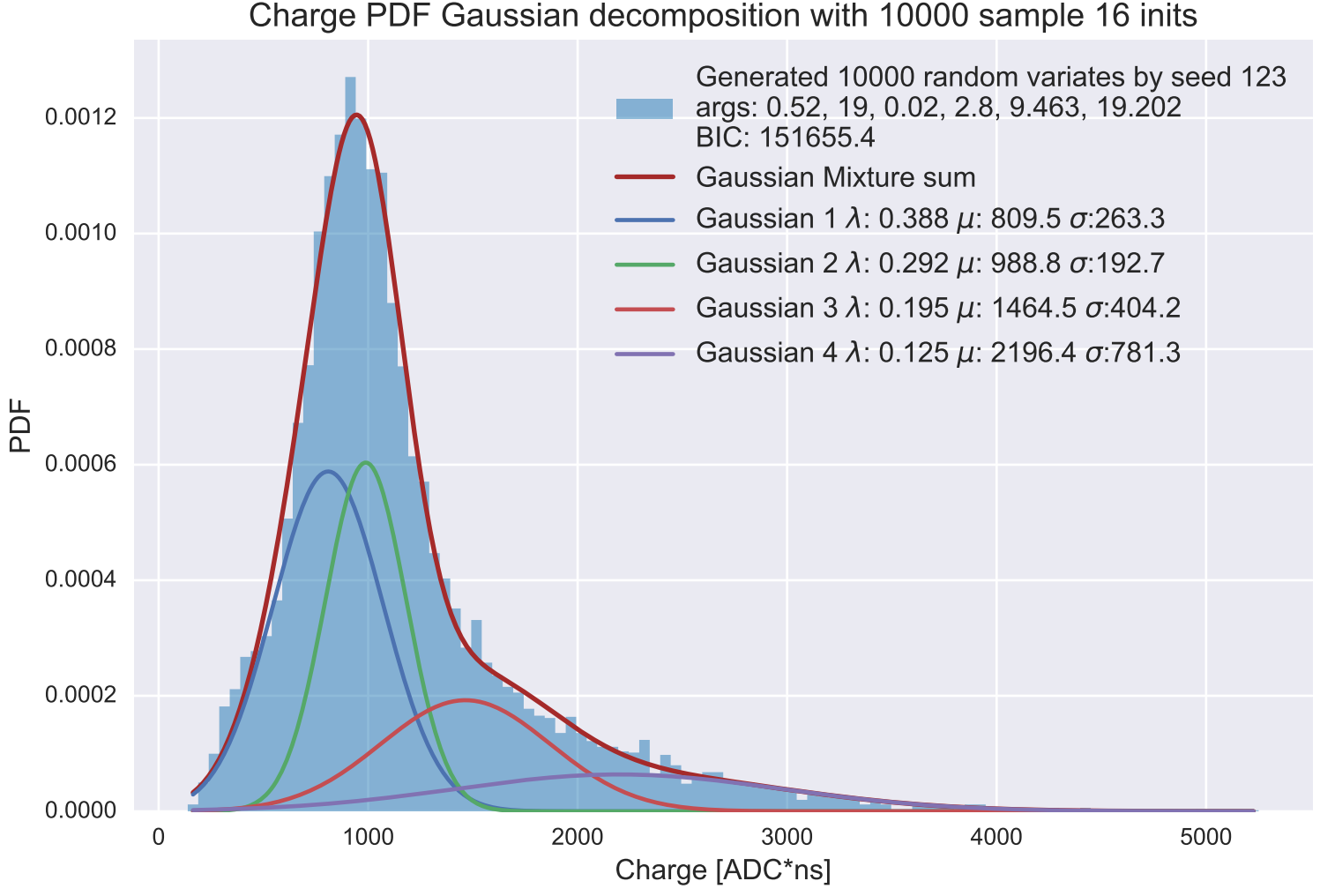

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.02, 2.2, 8.777, 20.752
BIC: 147437.9
Gaussian Mixture sum
Gaussian 1 λ: 0.086 μ: 349.1 σ:91.9
Gaussian 2 λ: 0.571 μ: 867.8 σ:212.7
Gaussian 3 λ: 0.257 μ: 1155.4 σ:313.1
Gaussian 4 λ: 0.086 μ: 1778.1 σ:602.5
PDF
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
1500
2000
2500
3000
3500
4000
Charge [ADC*ns]

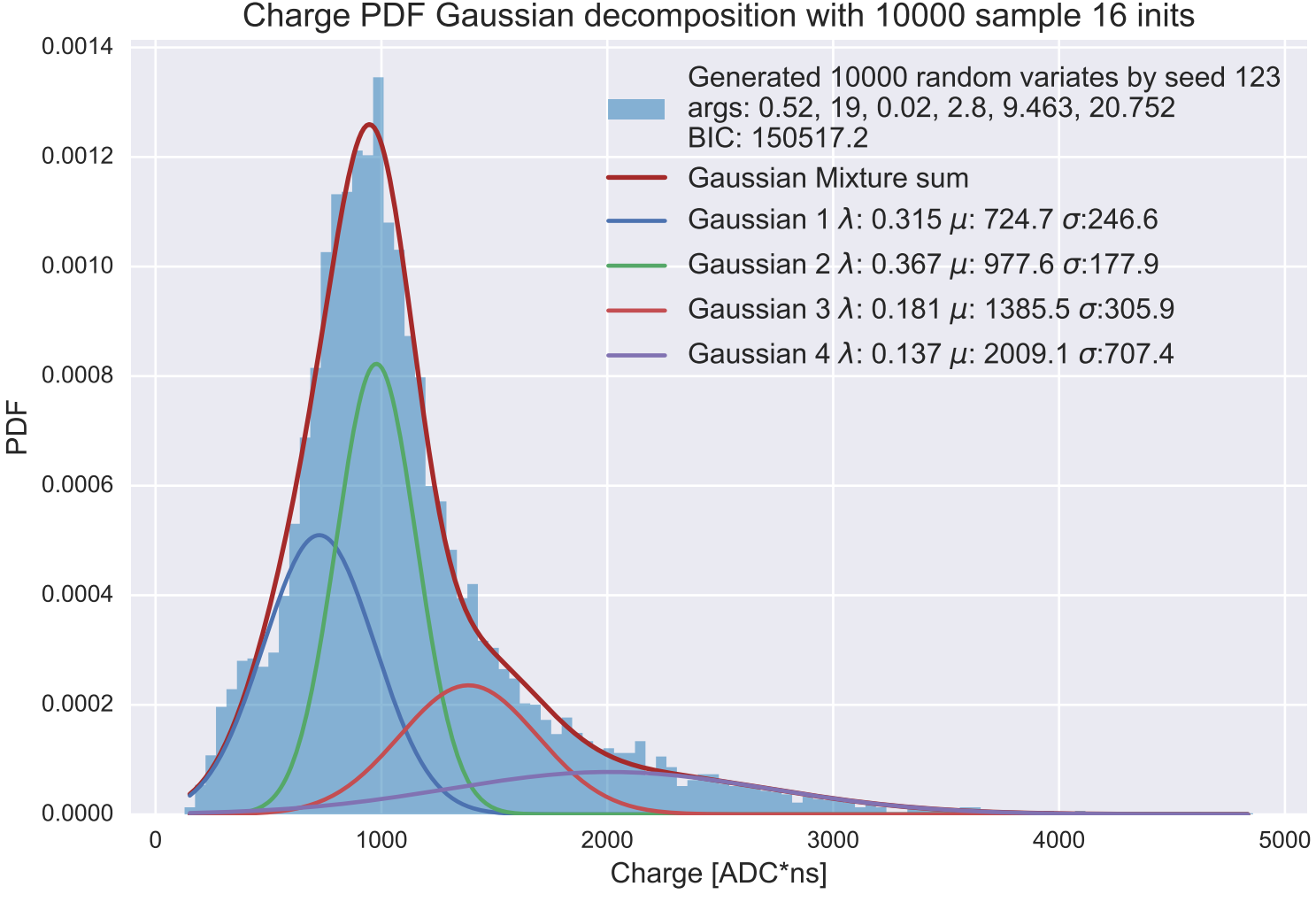

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.02, 2.2, 9.463, 19.202
BIC: 149229.9
Gaussian Mixture sum
Gaussian 1 λ: 0.072 μ: 397.3 σ:98.8
Gaussian 2 λ: 0.611 μ: 897.8 σ:216.1
Gaussian 3 λ: 0.222 μ: 1281.3 σ:370.6
Gaussian 4 λ: 0.095 μ: 2032.8 σ:687.6
PDF
0.0000
0.0002
0.0004
0.0006
0.0008
0.0010
0.0012
0
1000
2000
3000
4000
5000
Charge [ADC*ns]

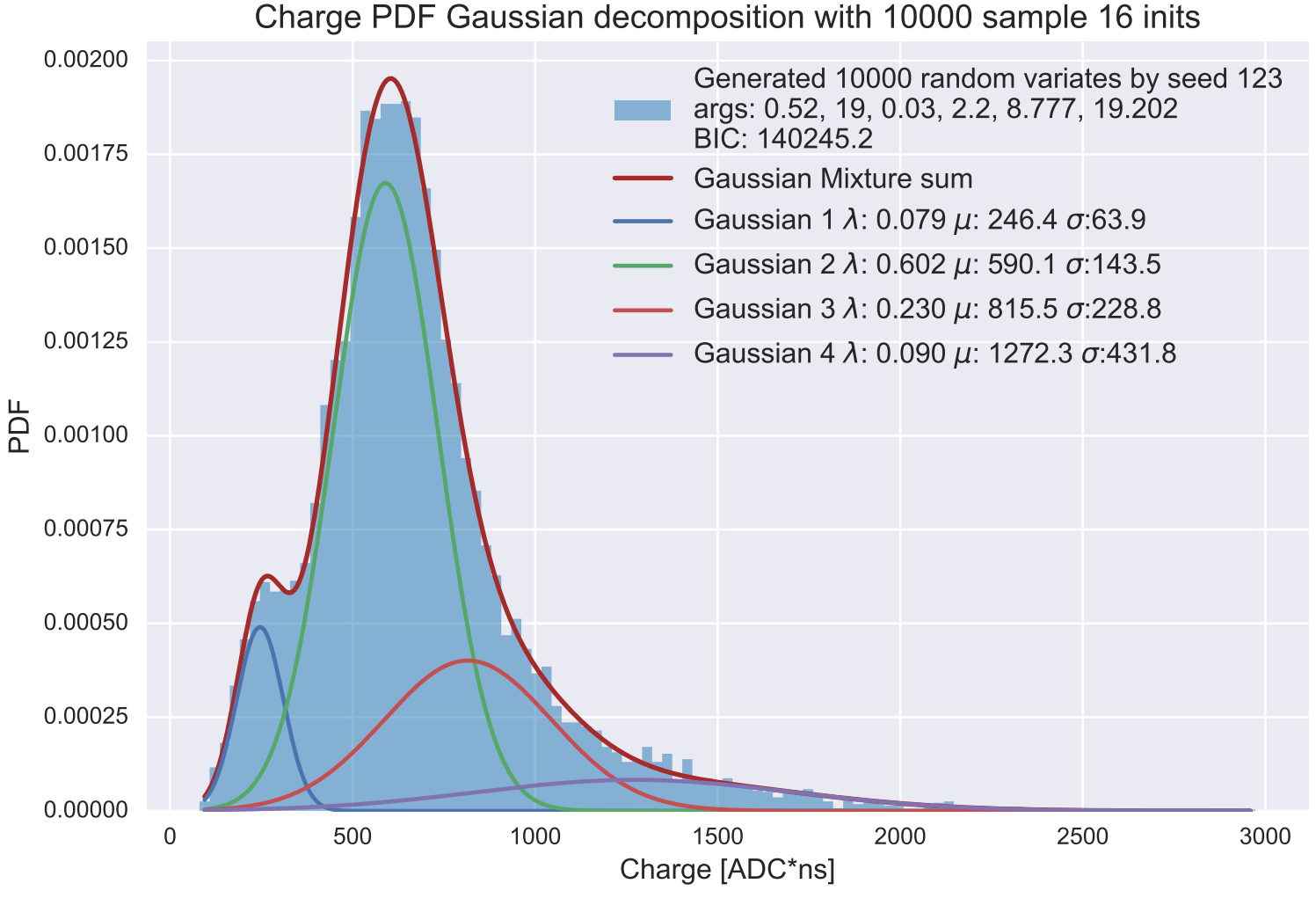

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.02, 2.2, 9.463, 20.752
BIC: 148242.4
Gaussian Mixture sum
Gaussian 1 λ: 0.081 μ: 374.3 σ:94.3
Gaussian 2 λ: 0.586 μ: 882.9 σ:211.7
Gaussian 3 λ: 0.239 μ: 1206.4 σ:333.5
Gaussian 4 λ: 0.094 μ: 1883.9 σ:638.7
PDF
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]

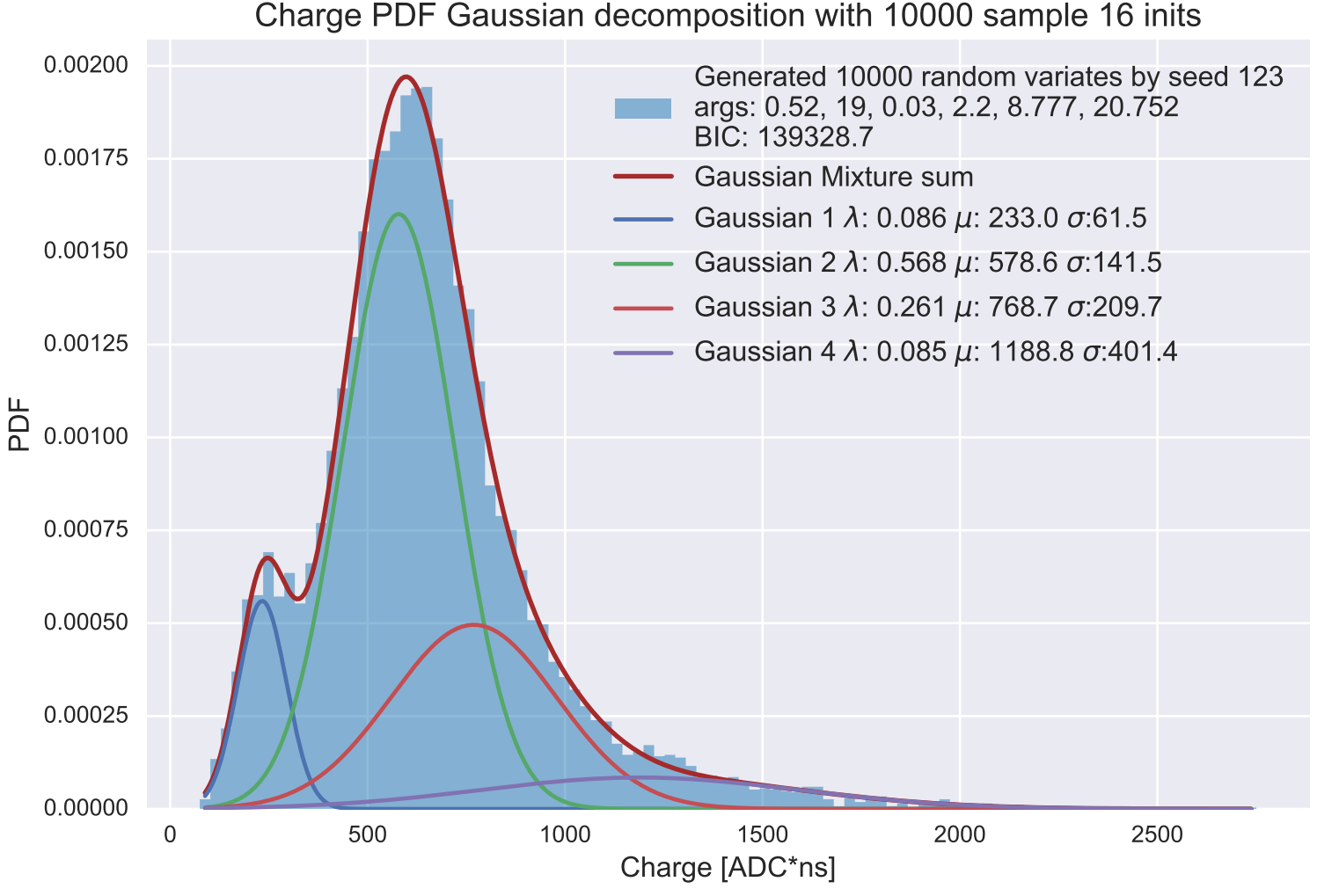

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.02, 2.8, 8.777, 19.202
BIC: 150611.1
Gaussian Mixture sum
Gaussian 1 λ: 0.390 μ: 789.9 σ:271.2
Gaussian 2 λ: 0.293 μ: 976.6 σ:182.0
Gaussian 3 λ: 0.189 μ: 1382.2 σ:361.1
Gaussian 4 λ: 0.127 μ: 2031.2 σ:731.0
PDF
0.0000
0.0002
0.0004
0.0006
0.0008
0.0010
0.0012
0
1000
2000
3000
4000
5000
Charge [ADC*ns]

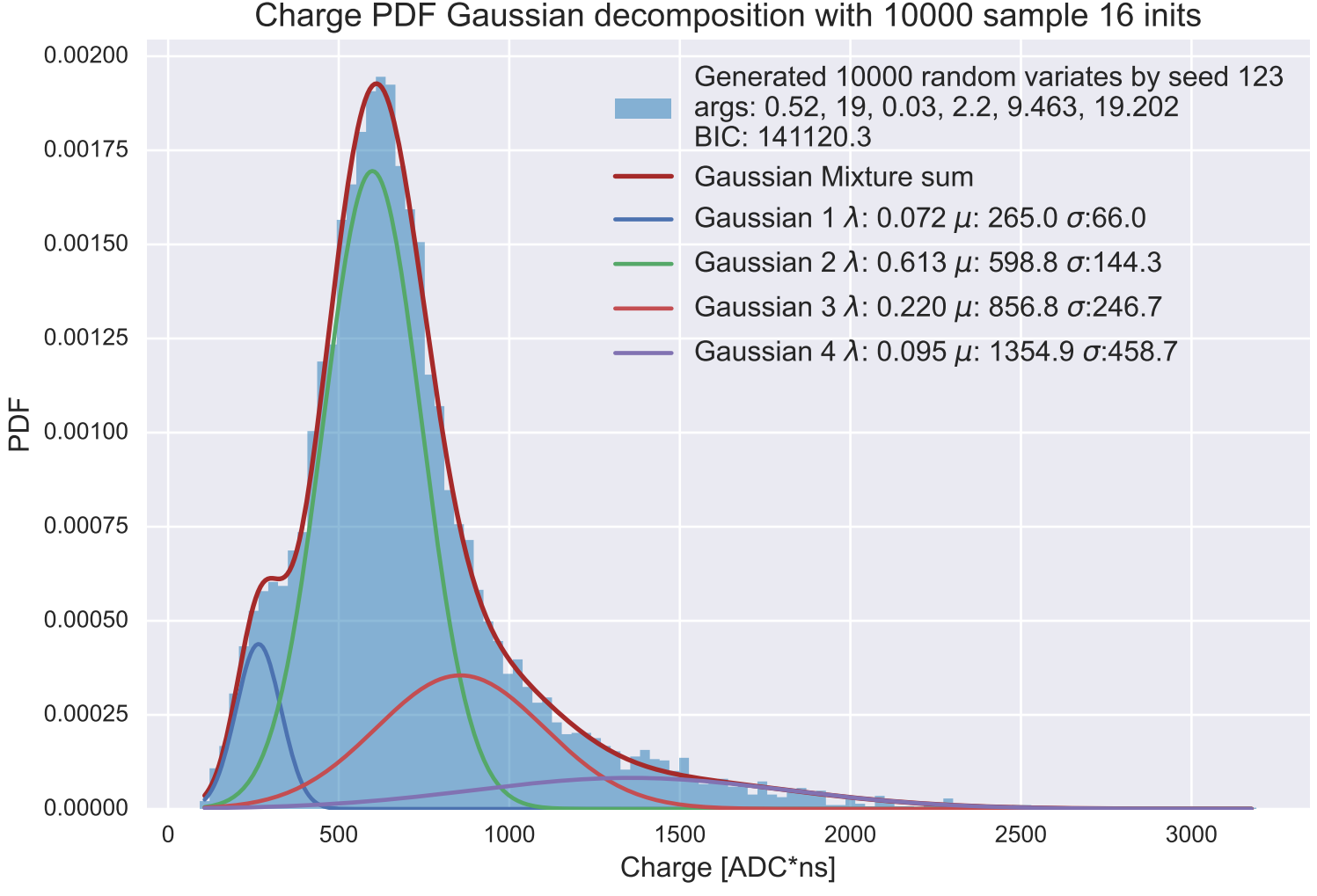

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.02, 2.8, 8.777, 20.752
BIC: 149511.4
Gaussian Mixture sum
Gaussian 1 λ: 0.296 μ: 688.1 σ:248.5
Gaussian 2 λ: 0.396 μ: 965.6 σ:179.3
Gaussian 3 λ: 0.192 μ: 1337.4 σ:303.2
Gaussian 4 λ: 0.116 μ: 1941.6 σ:661.8
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]

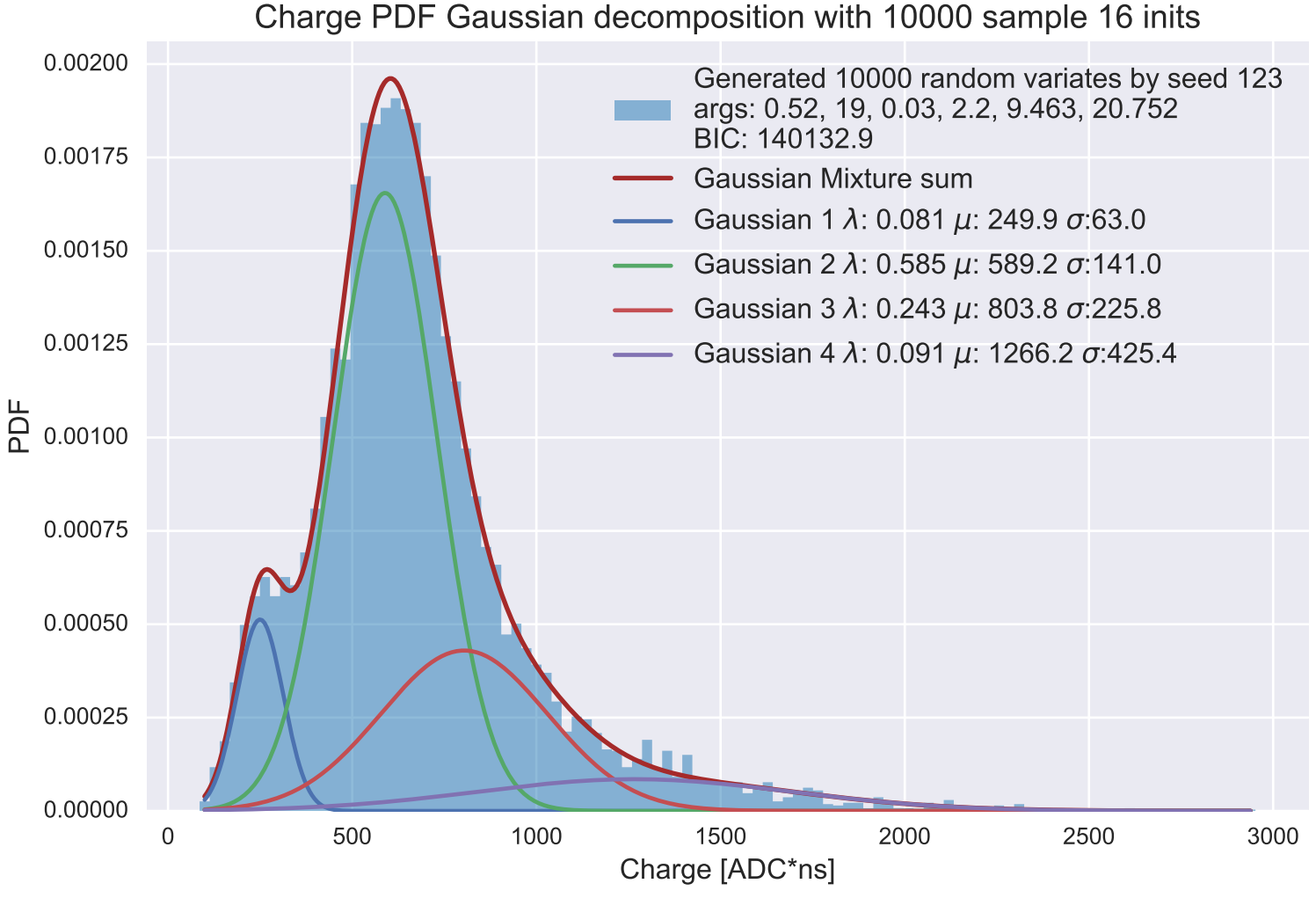

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.02, 2.8, 9.463, 19.202
BIC: 151655.4
Gaussian Mixture sum
Gaussian 1 λ: 0.388 μ: 809.5 σ:263.3
Gaussian 2 λ: 0.292 μ: 988.8 σ:192.7
Gaussian 3 λ: 0.195 μ: 1464.5 σ:404.2
Gaussian 4 λ: 0.125 μ: 2196.4 σ:781.3
PDF
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
5000
Charge [ADC*ns]

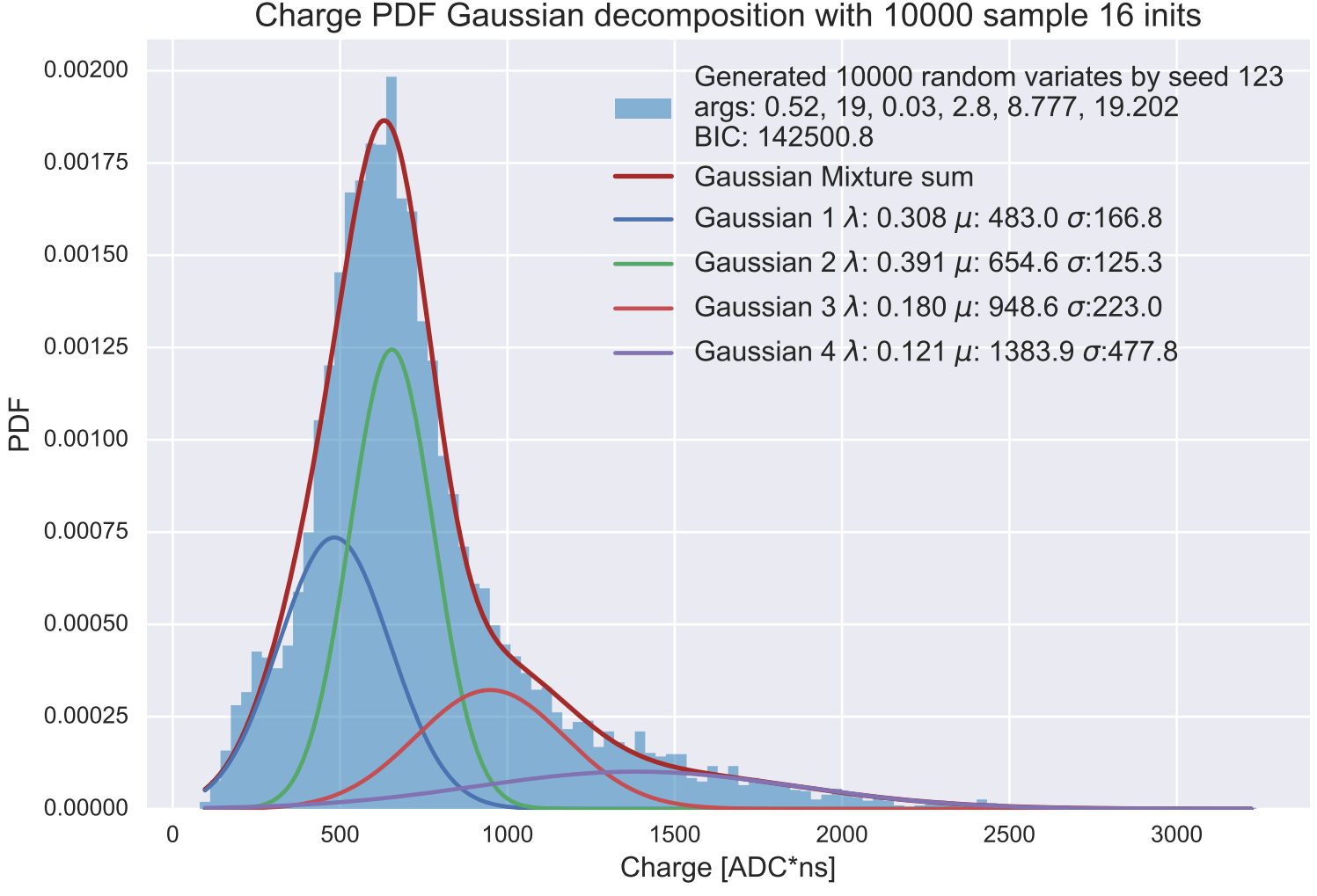

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.02, 2.8, 9.463, 20.752
BIC: 150517.2
Gaussian Mixture sum
Gaussian 1 λ: 0.315 μ: 724.7 σ:246.6
Gaussian 2 λ: 0.367 μ: 977.6 σ:177.9
Gaussian 3 λ: 0.181 μ: 1385.5 σ:305.9
Gaussian 4 λ: 0.137 μ: 2009.1 σ:707.4
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
5000
Charge [ADC*ns]

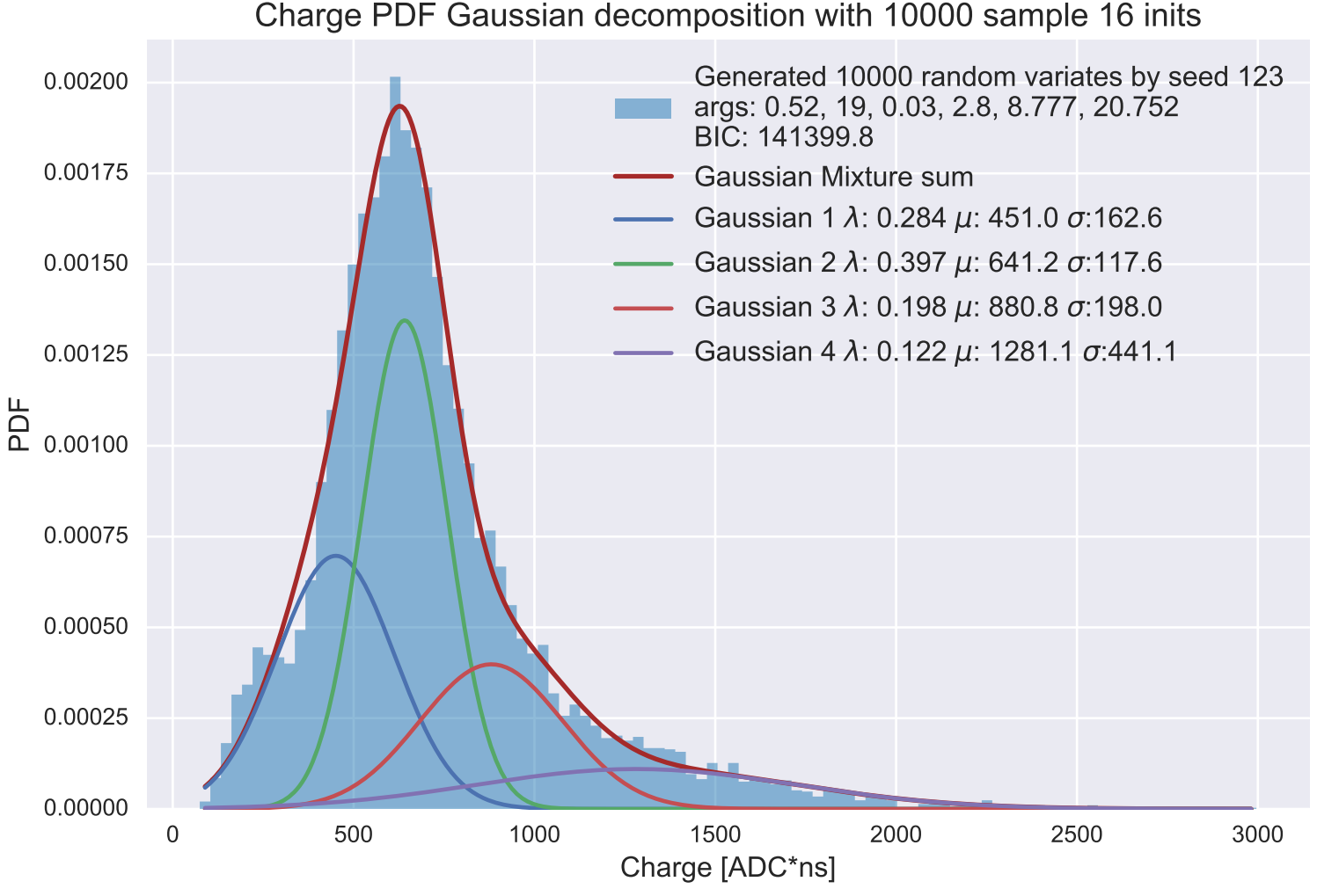

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.03, 2.2, 8.777, 19.202
BIC: 140245.2
Gaussian Mixture sum
Gaussian 1 λ: 0.079 μ: 246.4 σ:63.9
Gaussian 2 λ: 0.602 μ: 590.1 σ:143.5
Gaussian 3 λ: 0.230 μ: 815.5 σ:228.8
Gaussian 4 λ: 0.090 μ: 1272.3 σ:431.8
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]

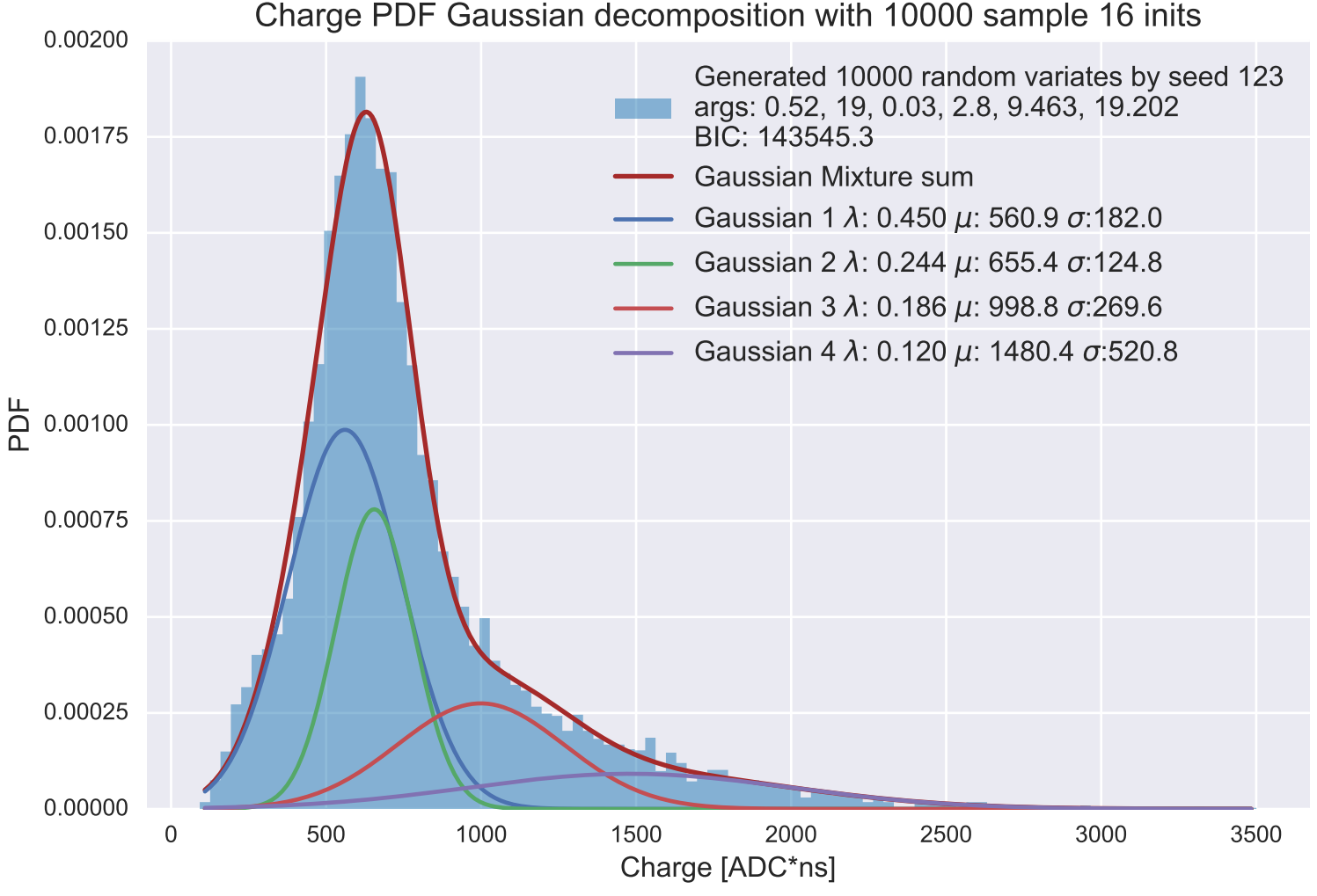

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.03, 2.2, 8.777, 20.752
BIC: 139328.7
Gaussian Mixture sum
Gaussian 1 λ: 0.086 μ: 233.0 σ:61.5
Gaussian 2 λ: 0.568 μ: 578.6 σ:141.5
Gaussian 3 λ: 0.261 μ: 768.7 σ:209.7
Gaussian 4 λ: 0.085 μ: 1188.8 σ:401.4
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
Charge [ADC*ns]

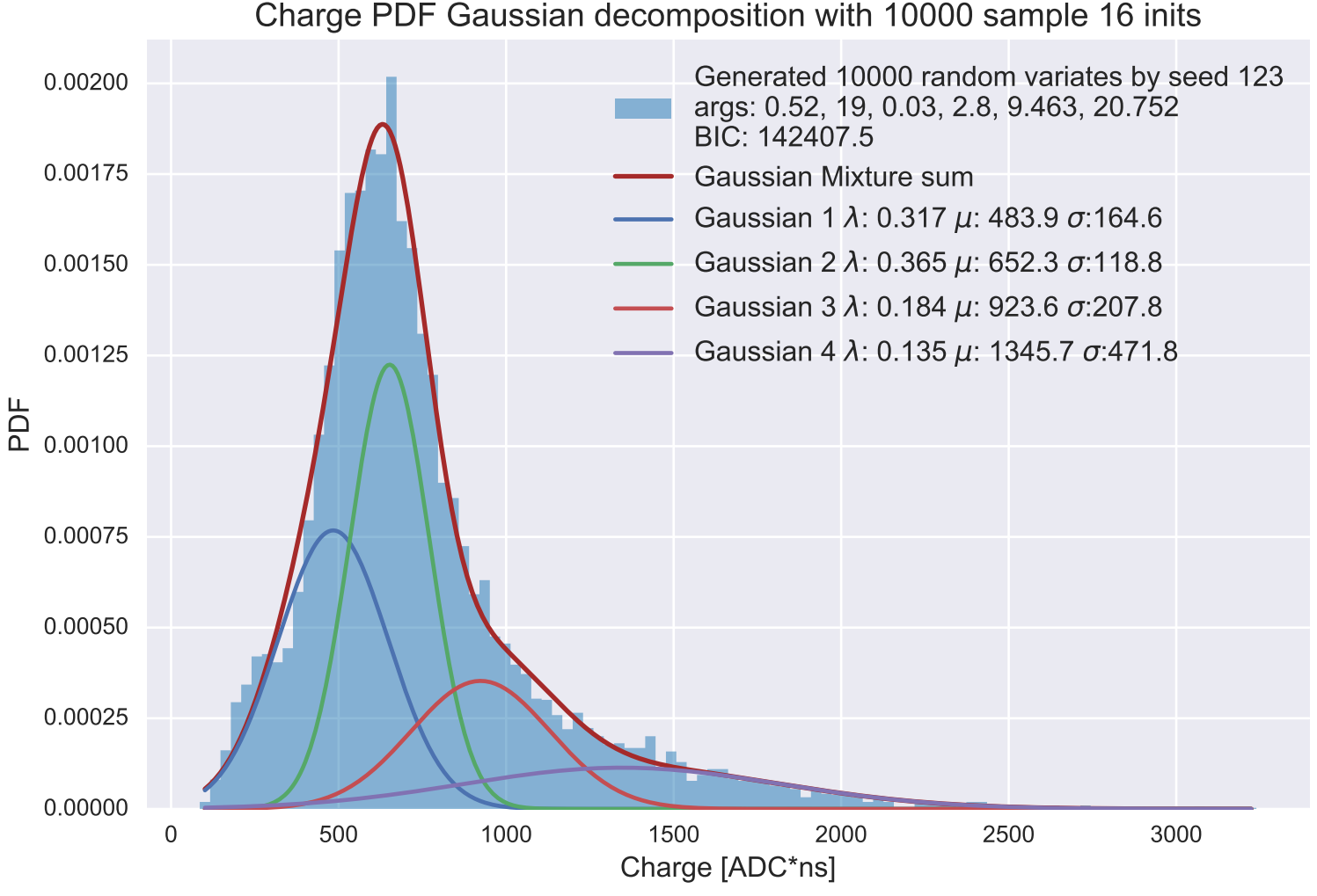

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.03, 2.2, 9.463, 19.202
BIC: 141120.3
Gaussian Mixture sum
Gaussian 1 λ: 0.072 μ: 265.0 σ:66.0
Gaussian 2 λ: 0.613 μ: 598.8 σ:144.3
Gaussian 3 λ: 0.220 μ: 856.8 σ:246.7
Gaussian 4 λ: 0.095 μ: 1354.9 σ:458.7
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]

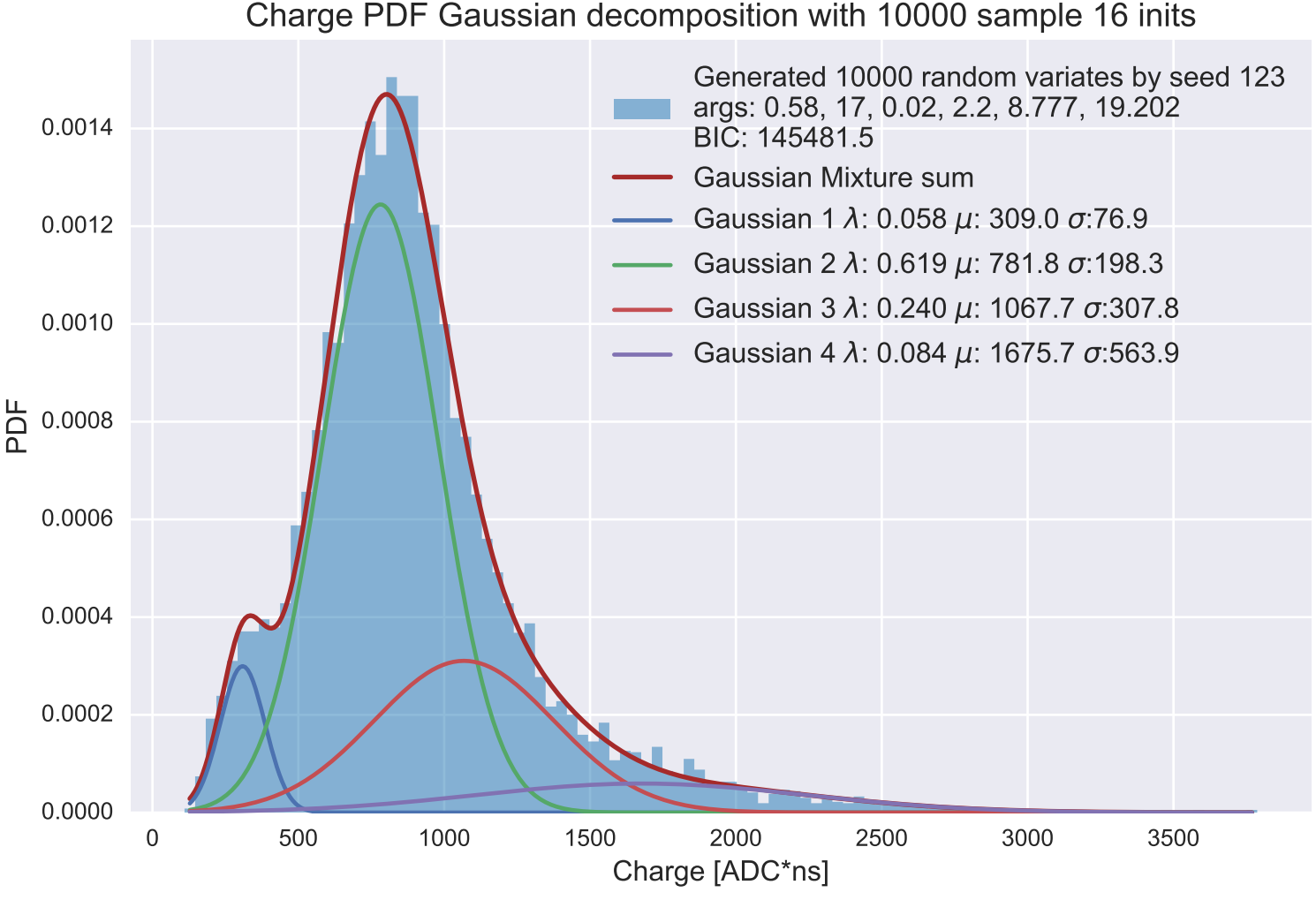

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.03, 2.2, 9.463, 20.752
BIC: 140132.9
Gaussian Mixture sum
Gaussian 1 λ: 0.081 μ: 249.9 σ:63.0
Gaussian 2 λ: 0.585 μ: 589.2 σ:141.0
Gaussian 3 λ: 0.243 μ: 803.8 σ:225.8
Gaussian 4 λ: 0.091 μ: 1266.2 σ:425.4
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.03, 2.8, 8.777, 19.202
BIC: 142500.8
Gaussian Mixture sum
Gaussian 1 λ: 0.308 μ: 483.0 σ:166.8
Gaussian 2 λ: 0.391 μ: 654.6 σ:125.3
Gaussian 3 λ: 0.180 μ: 948.6 σ:223.0
Gaussian 4 λ: 0.121 μ: 1383.9 σ:477.8
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.03, 2.8, 8.777, 20.752
BIC: 141399.8
Gaussian Mixture sum
Gaussian 1 λ: 0.284 μ: 451.0 σ:162.6
Gaussian 2 λ: 0.397 μ: 641.2 σ:117.6
Gaussian 3 λ: 0.198 μ: 880.8 σ:198.0
Gaussian 4 λ: 0.122 μ: 1281.1 σ:441.1
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.03, 2.8, 9.463, 19.202
BIC: 143545.3
Gaussian Mixture sum
Gaussian 1 λ: 0.450 μ: 560.9 σ:182.0
Gaussian 2 λ: 0.244 μ: 655.4 σ:124.8
Gaussian 3 λ: 0.186 μ: 998.8 σ:269.6
Gaussian 4 λ: 0.120 μ: 1480.4 σ:520.8
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
3500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.52, 19, 0.03, 2.8, 9.463, 20.752
BIC: 142407.5
Gaussian Mixture sum
Gaussian 1 λ: 0.317 μ: 483.9 σ:164.6
Gaussian 2 λ: 0.365 μ: 652.3 σ:118.8
Gaussian 3 λ: 0.184 μ: 923.6 σ:207.8
Gaussian 4 λ: 0.135 μ: 1345.7 σ:471.8
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.02, 2.2, 8.777, 19.202
BIC: 145481.5
Gaussian Mixture sum
Gaussian 1 λ: 0.058 μ: 309.0 σ:76.9
Gaussian 2 λ: 0.619 μ: 781.8 σ:198.3
Gaussian 3 λ: 0.240 μ: 1067.7 σ:307.8
Gaussian 4 λ: 0.084 μ: 1675.7 σ:563.9
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
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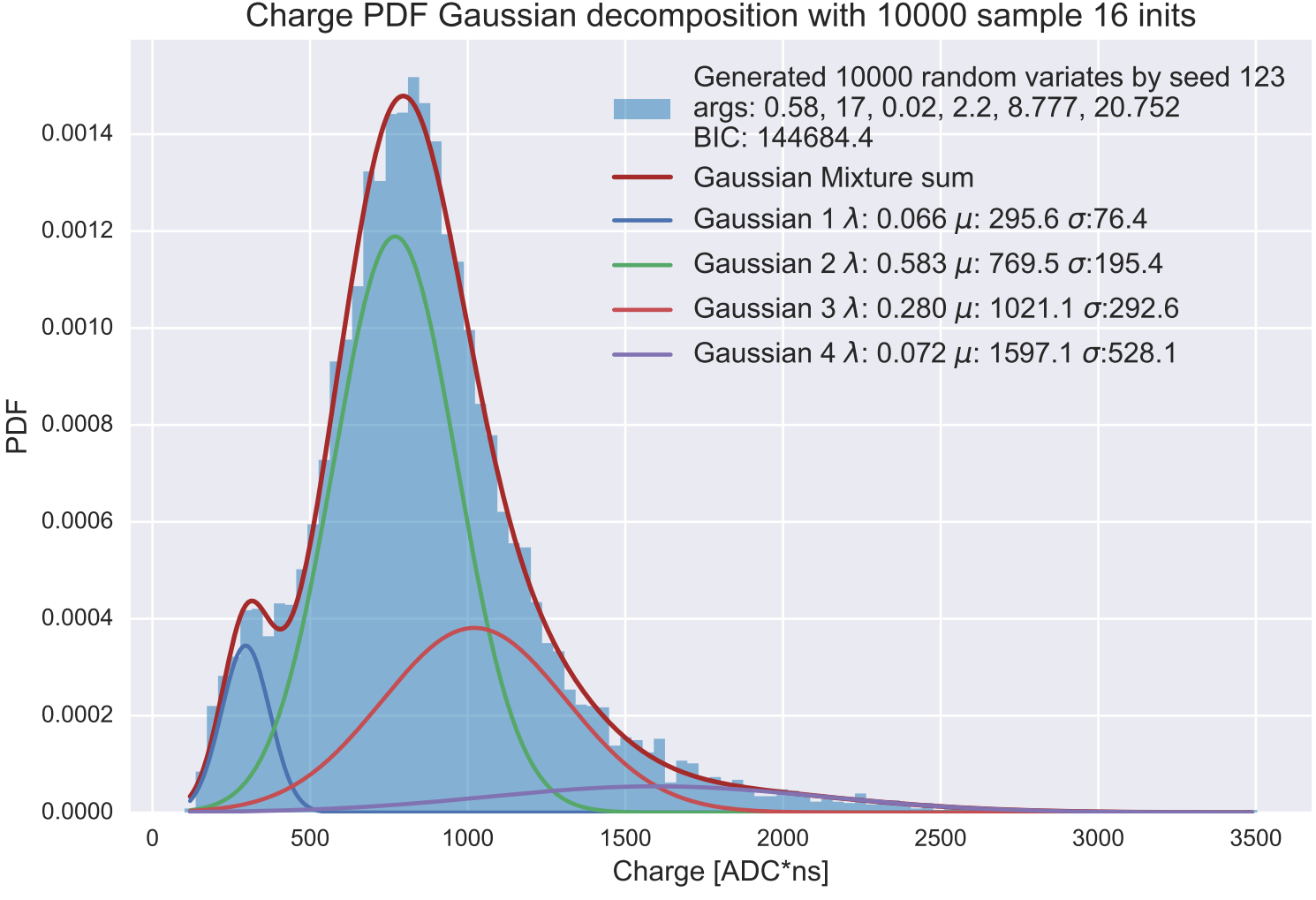
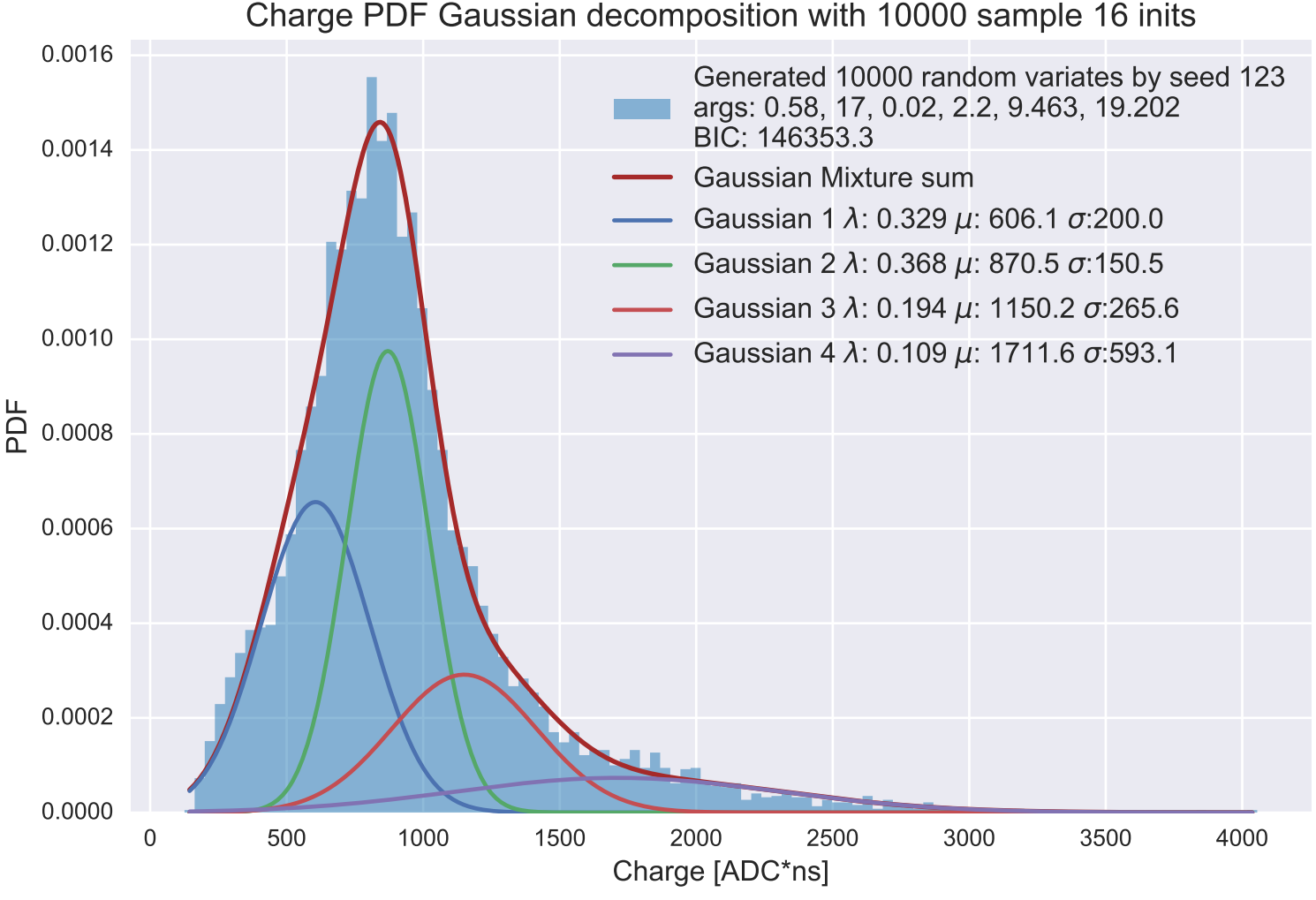
2500
3000
3500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.02, 2.2, 8.777, 20.752
BIC: 144684.4
Gaussian Mixture sum
Gaussian 1 λ: 0.066 μ: 295.6 σ:76.4
Gaussian 2 λ: 0.583 μ: 769.5 σ:195.4
Gaussian 3 λ: 0.280 μ: 1021.1 σ:292.6
Gaussian 4 λ: 0.072 μ: 1597.1 σ:528.1
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
1500
2000
2500
3000
3500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.02, 2.2, 9.463, 19.202
BIC: 146353.3
Gaussian Mixture sum
Gaussian 1 λ: 0.329 μ: 606.1 σ:200.0
Gaussian 2 λ: 0.368 μ: 870.5 σ:150.5
Gaussian 3 λ: 0.194 μ: 1150.2 σ:265.6
Gaussian 4 λ: 0.109 μ: 1711.6 σ:593.1
PDF
0.0016
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
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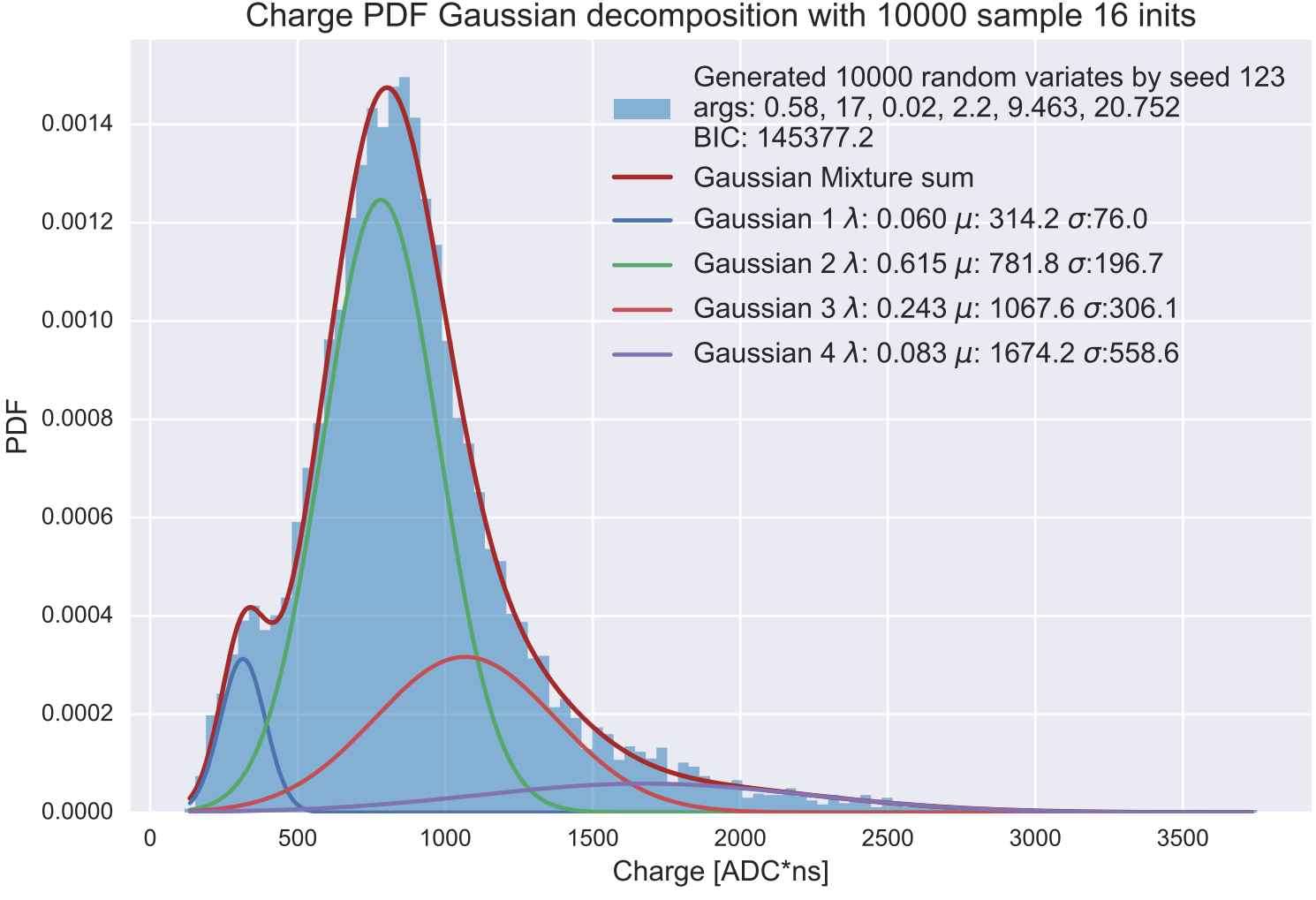
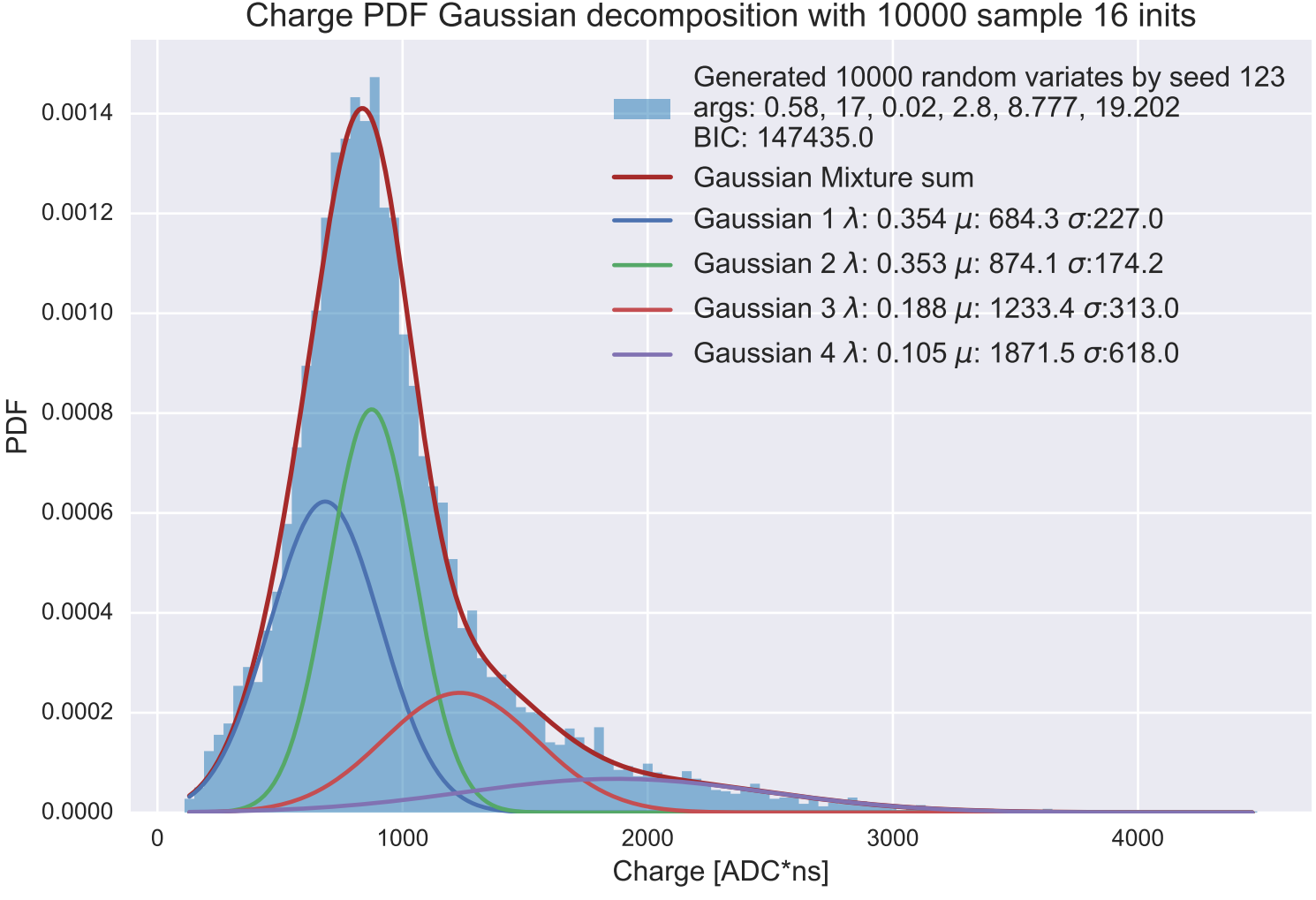
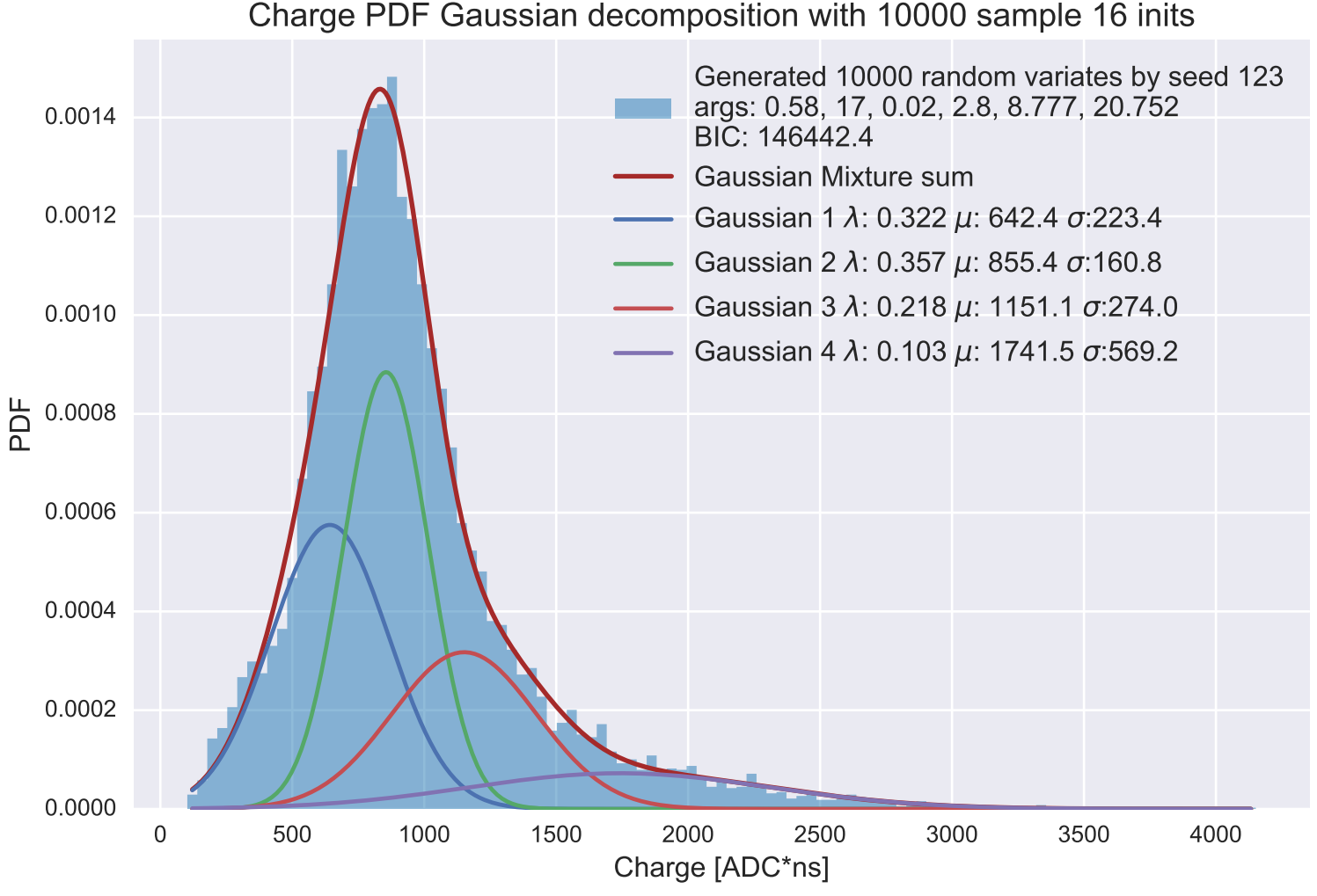
2000
2500
3000
3500
4000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.02, 2.2, 9.463, 20.752
BIC: 145377.2
Gaussian Mixture sum
Gaussian 1 λ: 0.060 μ: 314.2 σ:76.0
Gaussian 2 λ: 0.615 μ: 781.8 σ:196.7
Gaussian 3 λ: 0.243 μ: 1067.6 σ:306.1
Gaussian 4 λ: 0.083 μ: 1674.2 σ:558.6
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
1500
2000
2500
3000
3500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.02, 2.8, 8.777, 19.202
BIC: 147435.0
Gaussian Mixture sum
Gaussian 1 λ: 0.354 μ: 684.3 σ:227.0
Gaussian 2 λ: 0.353 μ: 874.1 σ:174.2
Gaussian 3 λ: 0.188 μ: 1233.4 σ:313.0
Gaussian 4 λ: 0.105 μ: 1871.5 σ:618.0
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.02, 2.8, 8.777, 20.752
BIC: 146442.4
Gaussian Mixture sum
Gaussian 1 λ: 0.322 μ: 642.4 σ:223.4
Gaussian 2 λ: 0.357 μ: 855.4 σ:160.8
Gaussian 3 λ: 0.218 μ: 1151.1 σ:274.0
Gaussian 4 λ: 0.103 μ: 1741.5 σ:569.2
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
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500
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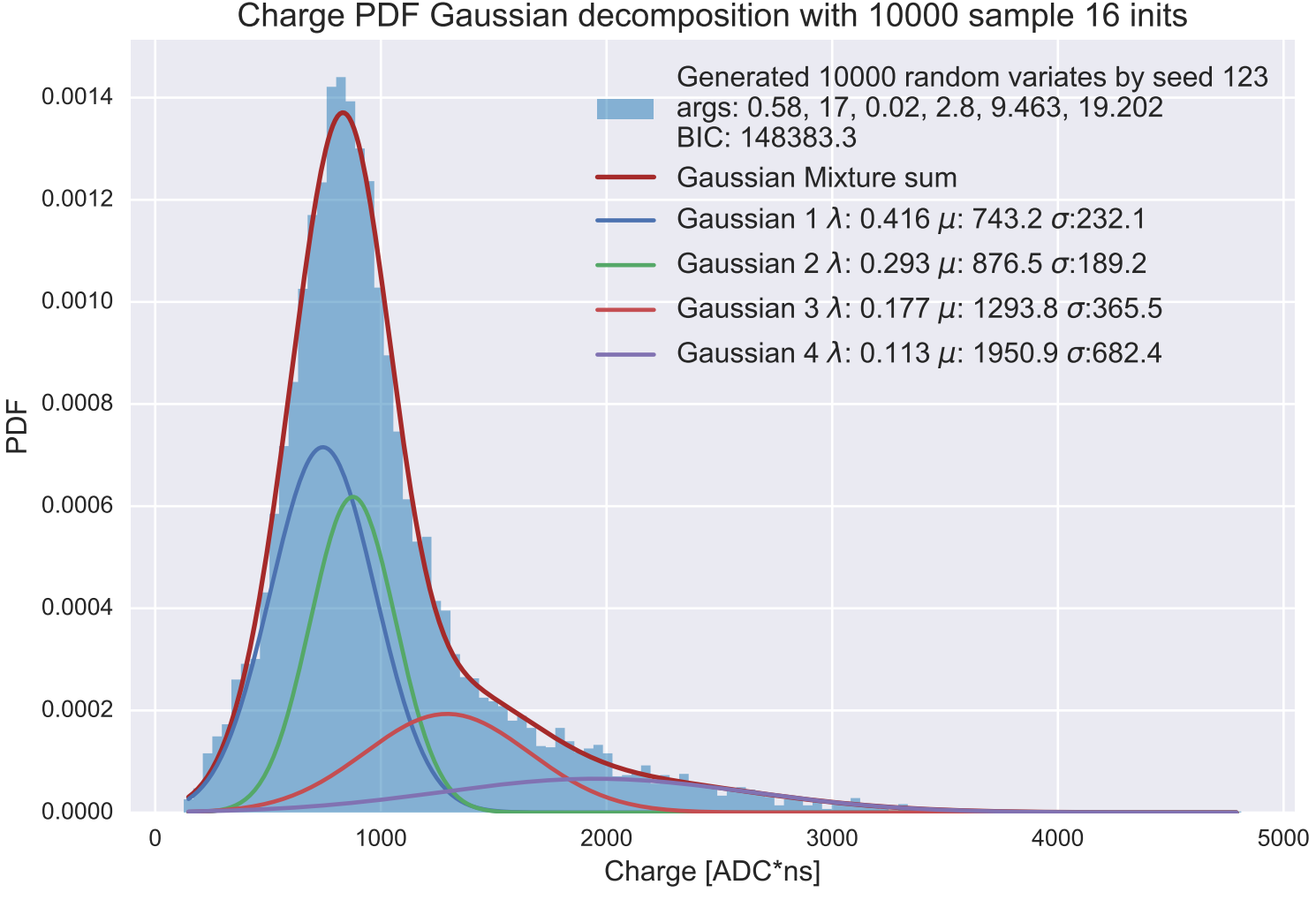
2500
3000
3500
4000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.02, 2.8, 9.463, 19.202
BIC: 148383.3
Gaussian Mixture sum
Gaussian 1 λ: 0.416 μ: 743.2 σ:232.1
Gaussian 2 λ: 0.293 μ: 876.5 σ:189.2
Gaussian 3 λ: 0.177 μ: 1293.8 σ:365.5
Gaussian 4 λ: 0.113 μ: 1950.9 σ:682.4
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
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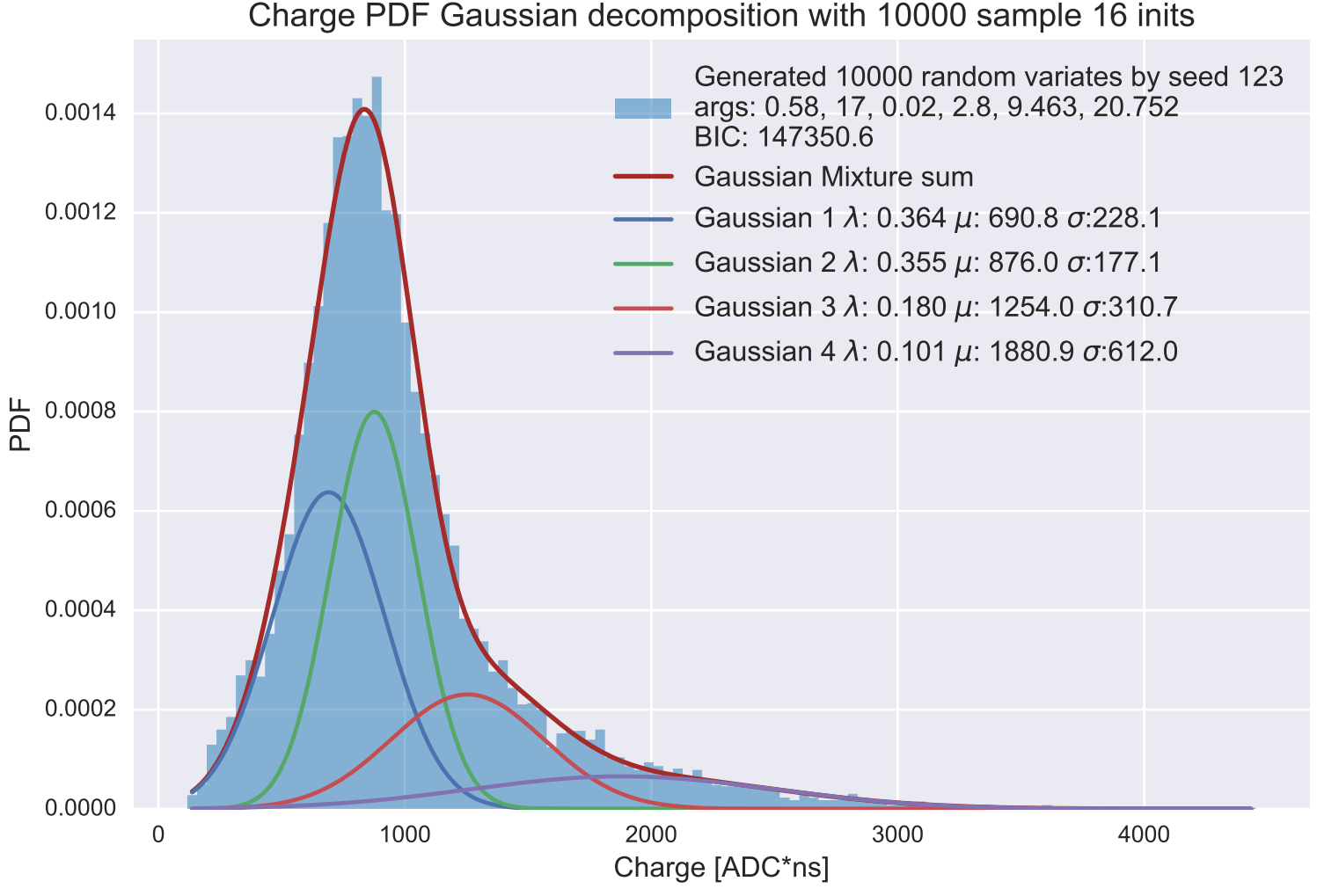
1000
2000
3000
4000
5000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.02, 2.8, 9.463, 20.752
BIC: 147350.6
Gaussian Mixture sum
Gaussian 1 λ: 0.364 μ: 690.8 σ:228.1
Gaussian 2 λ: 0.355 μ: 876.0 σ:177.1
Gaussian 3 λ: 0.180 μ: 1254.0 σ:310.7
Gaussian 4 λ: 0.101 μ: 1880.9 σ:612.0
PDF
0.0014
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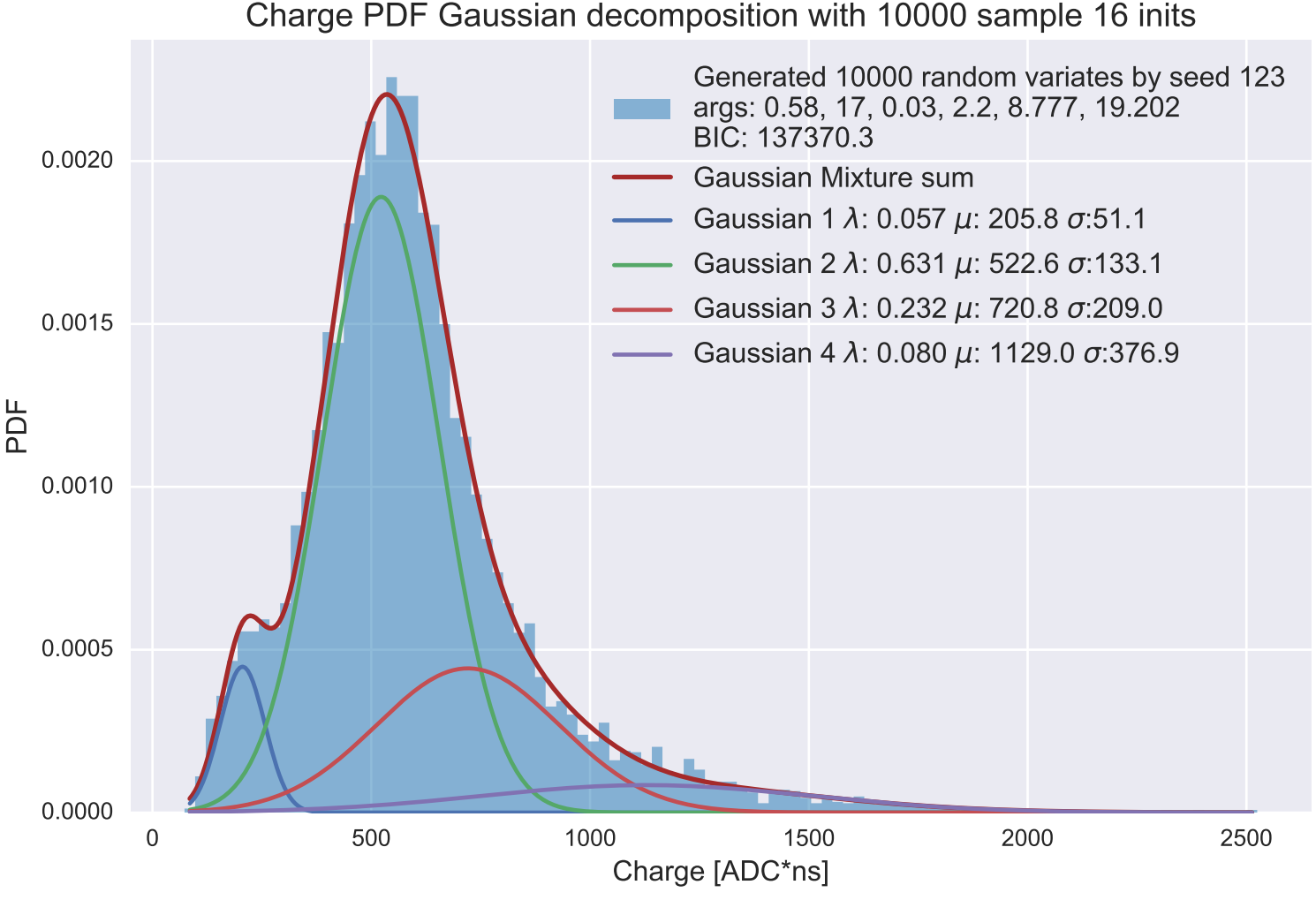
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.03, 2.2, 8.777, 19.202
BIC: 137370.3
Gaussian Mixture sum
Gaussian 1 λ: 0.057 μ: 205.8 σ:51.1
Gaussian 2 λ: 0.631 μ: 522.6 σ:133.1
Gaussian 3 λ: 0.232 μ: 720.8 σ:209.0
Gaussian 4 λ: 0.080 μ: 1129.0 σ:376.9
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
0
500
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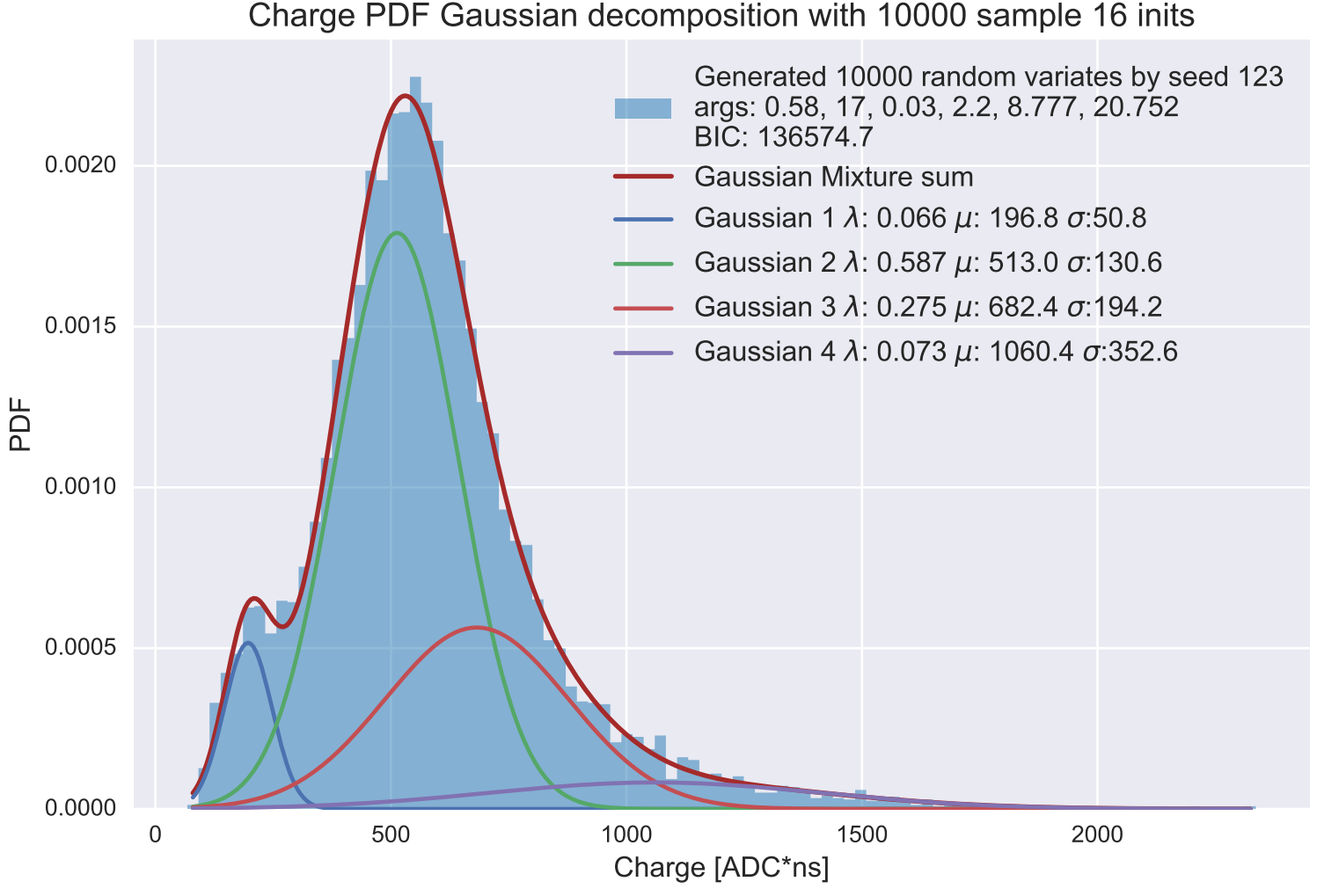
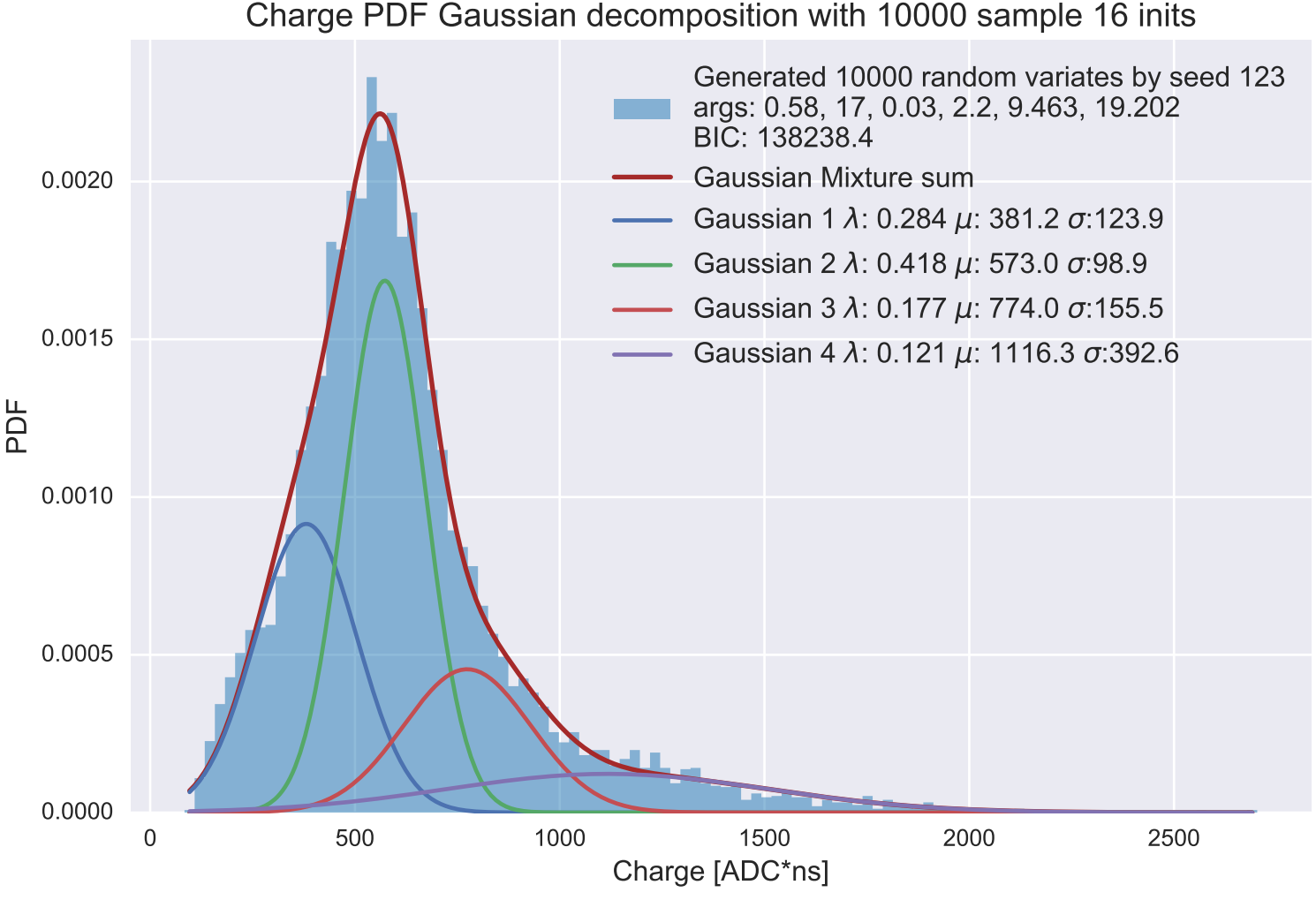
2000
2500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.03, 2.2, 8.777, 20.752
BIC: 136574.7
Gaussian Mixture sum
Gaussian 1 λ: 0.066 μ: 196.8 σ:50.8
Gaussian 2 λ: 0.587 μ: 513.0 σ:130.6
Gaussian 3 λ: 0.275 μ: 682.4 σ:194.2
Gaussian 4 λ: 0.073 μ: 1060.4 σ:352.6
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
0
500
1000
1500
2000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.03, 2.2, 9.463, 19.202
BIC: 138238.4
Gaussian Mixture sum
Gaussian 1 λ: 0.284 μ: 381.2 σ:123.9
Gaussian 2 λ: 0.418 μ: 573.0 σ:98.9
Gaussian 3 λ: 0.177 μ: 774.0 σ:155.5
Gaussian 4 λ: 0.121 μ: 1116.3 σ:392.6
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
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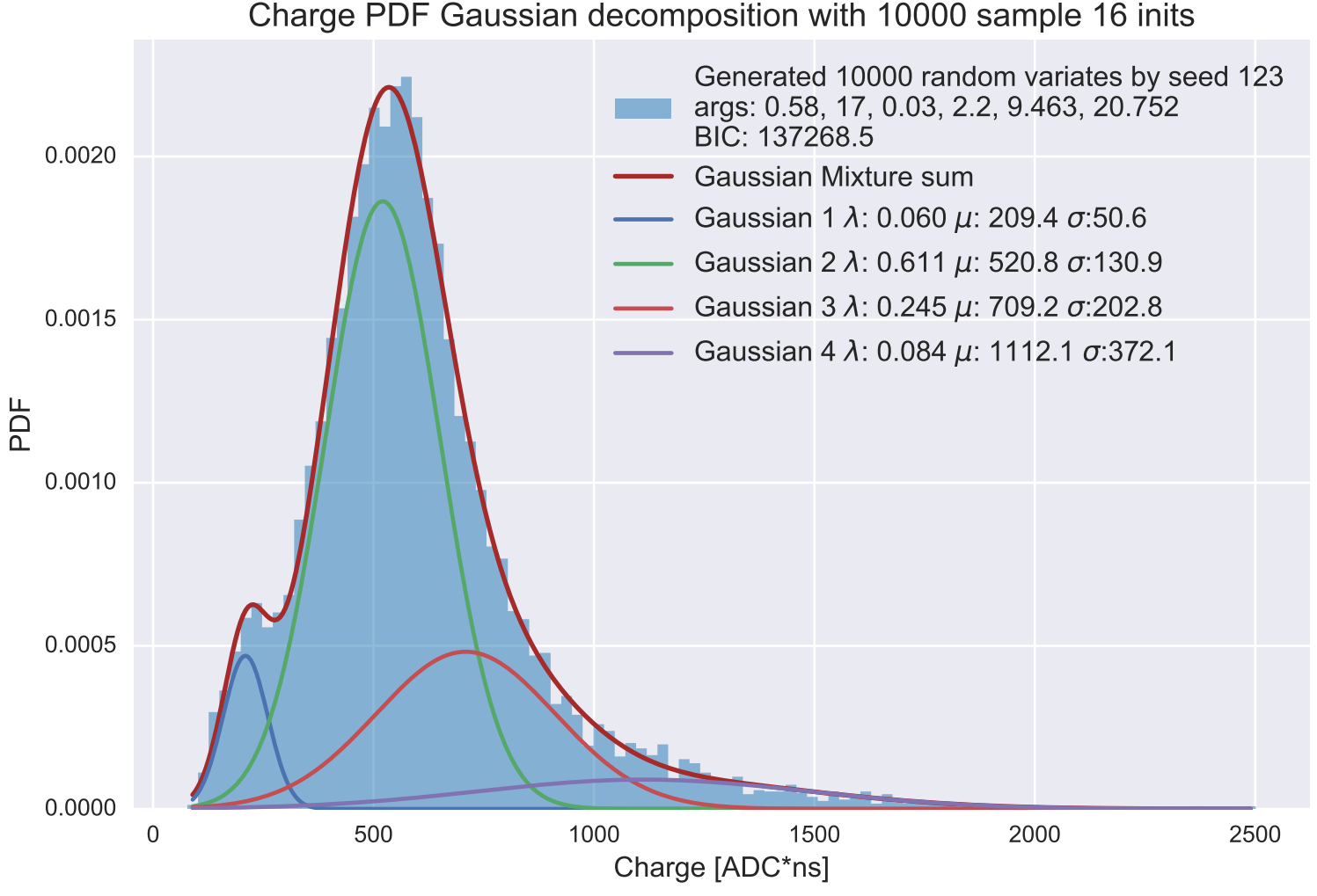
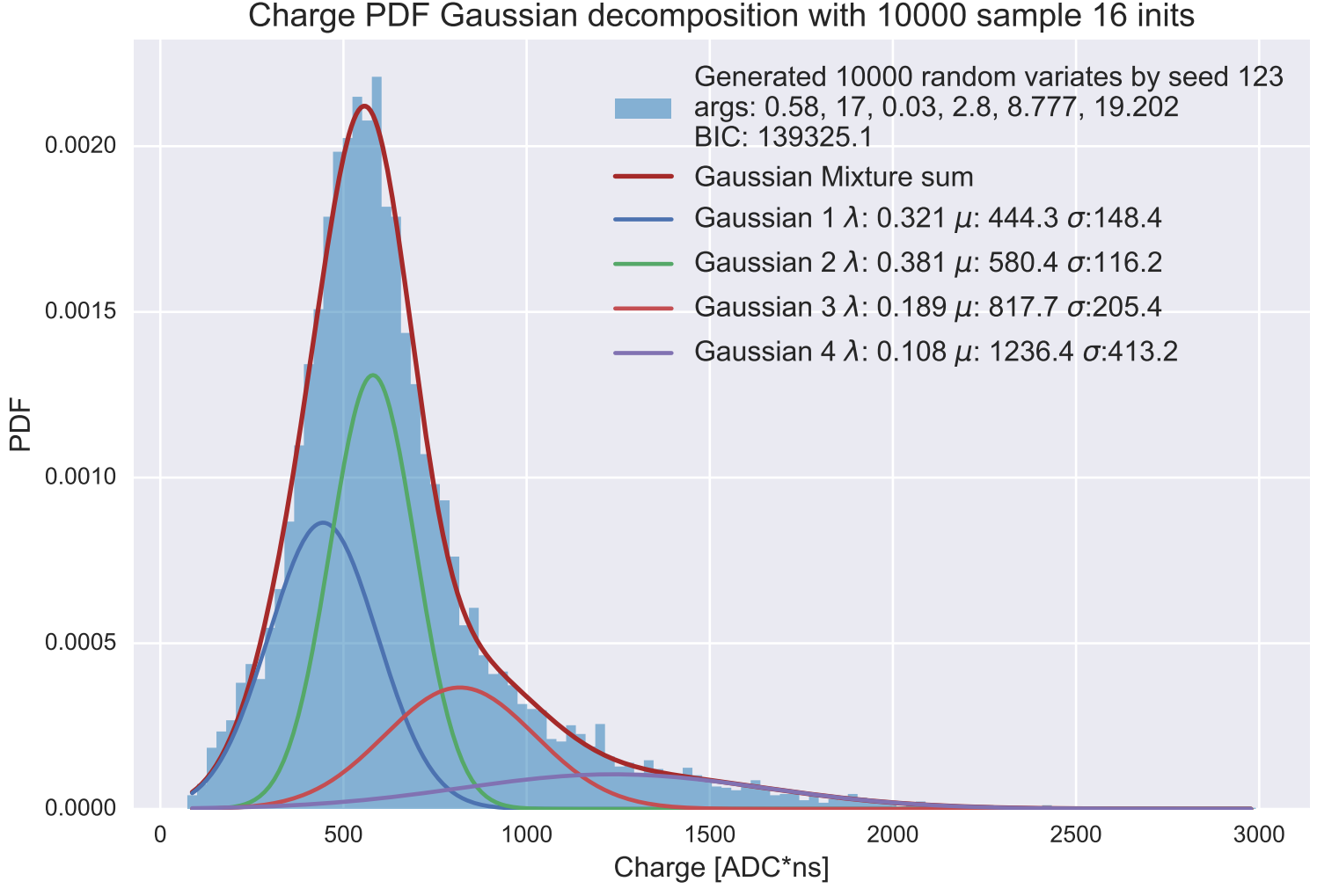
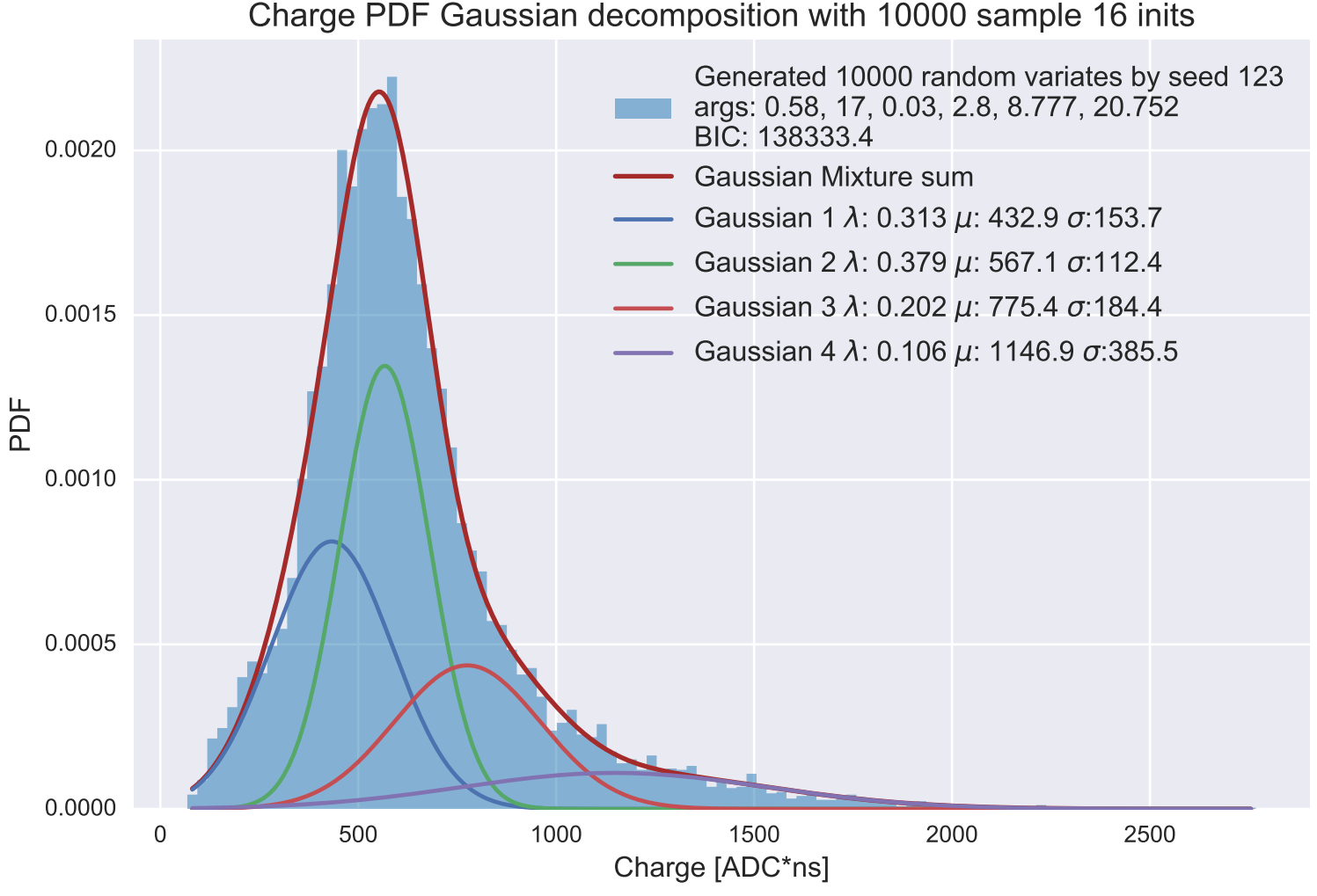
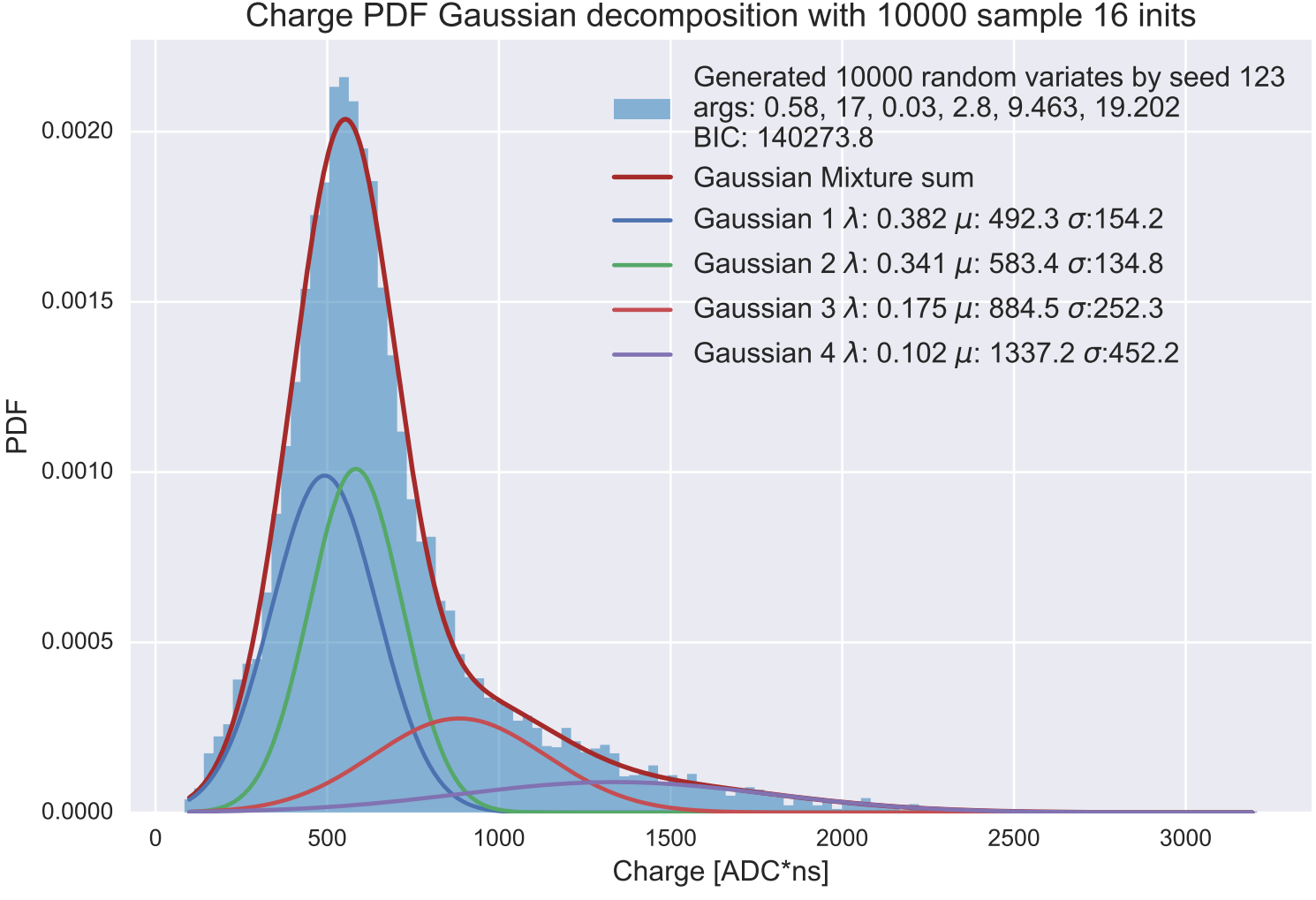
2500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.03, 2.2, 9.463, 20.752
BIC: 137268.5
Gaussian Mixture sum
Gaussian 1 λ: 0.060 μ: 209.4 σ:50.6
Gaussian 2 λ: 0.611 μ: 520.8 σ:130.9
Gaussian 3 λ: 0.245 μ: 709.2 σ:202.8
Gaussian 4 λ: 0.084 μ: 1112.1 σ:372.1
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
0
500
1000
1500
2000
2500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.03, 2.8, 8.777, 19.202
BIC: 139325.1
Gaussian Mixture sum
Gaussian 1 λ: 0.321 μ: 444.3 σ:148.4
Gaussian 2 λ: 0.381 μ: 580.4 σ:116.2
Gaussian 3 λ: 0.189 μ: 817.7 σ:205.4
Gaussian 4 λ: 0.108 μ: 1236.4 σ:413.2
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.03, 2.8, 8.777, 20.752
BIC: 138333.4
Gaussian Mixture sum
Gaussian 1 λ: 0.313 μ: 432.9 σ:153.7
Gaussian 2 λ: 0.379 μ: 567.1 σ:112.4
Gaussian 3 λ: 0.202 μ: 775.4 σ:184.4
Gaussian 4 λ: 0.106 μ: 1146.9 σ:385.5
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
0
500
1000
1500
2000
2500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.03, 2.8, 9.463, 19.202
BIC: 140273.8
Gaussian Mixture sum
Gaussian 1 λ: 0.382 μ: 492.3 σ:154.2
Gaussian 2 λ: 0.341 μ: 583.4 σ:134.8
Gaussian 3 λ: 0.175 μ: 884.5 σ:252.3
Gaussian 4 λ: 0.102 μ: 1337.2 σ:452.2
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
0
500
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1500
2000
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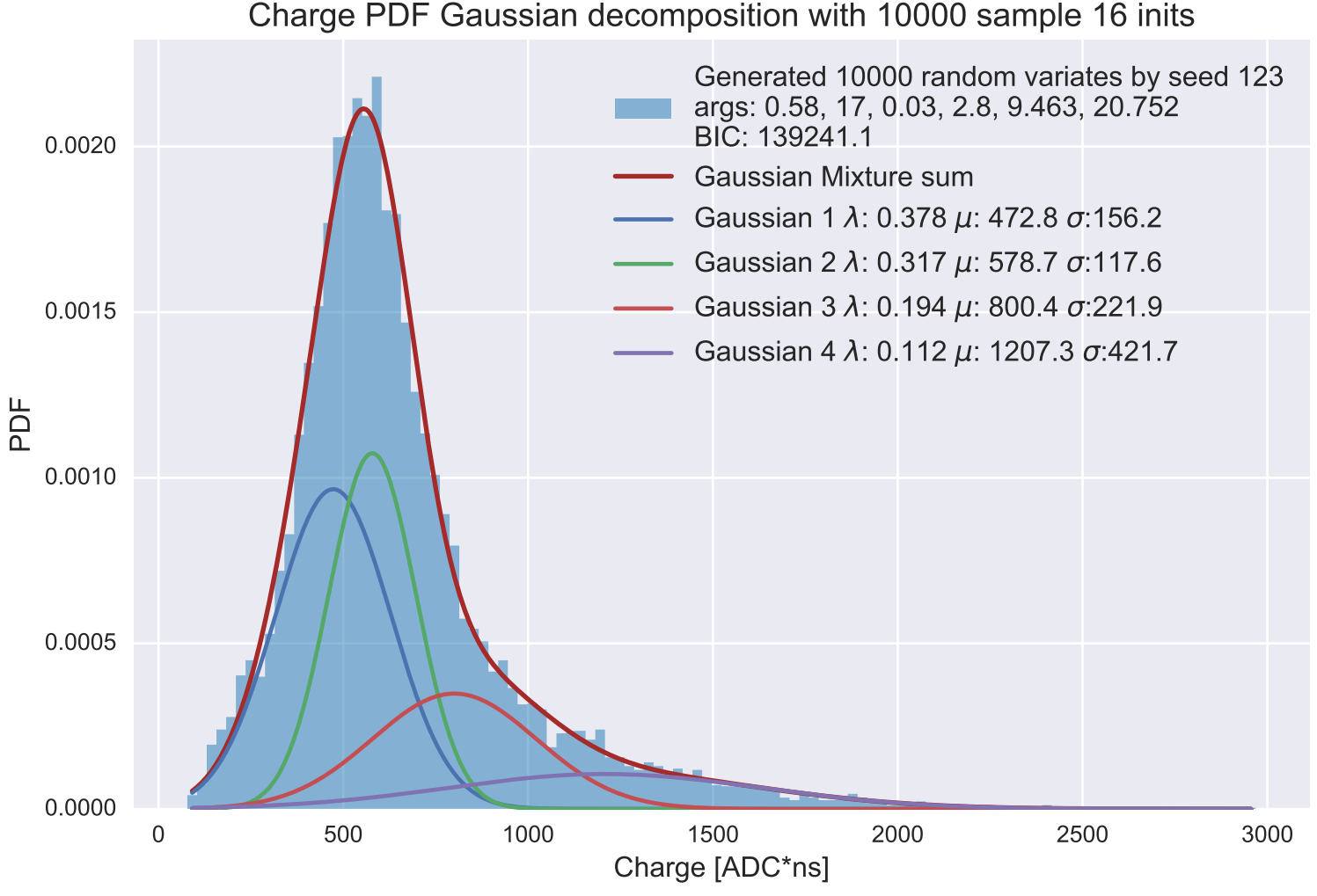
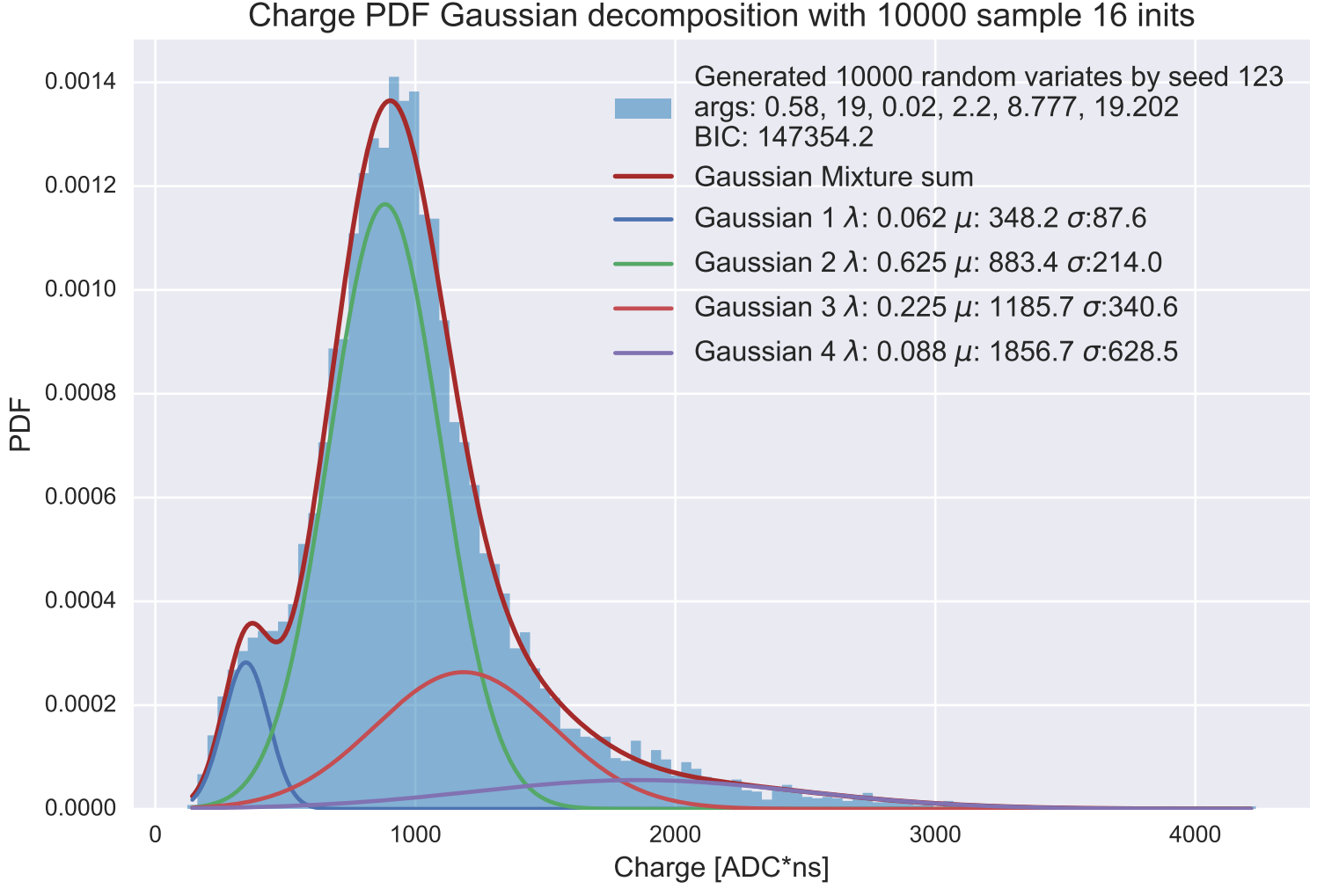
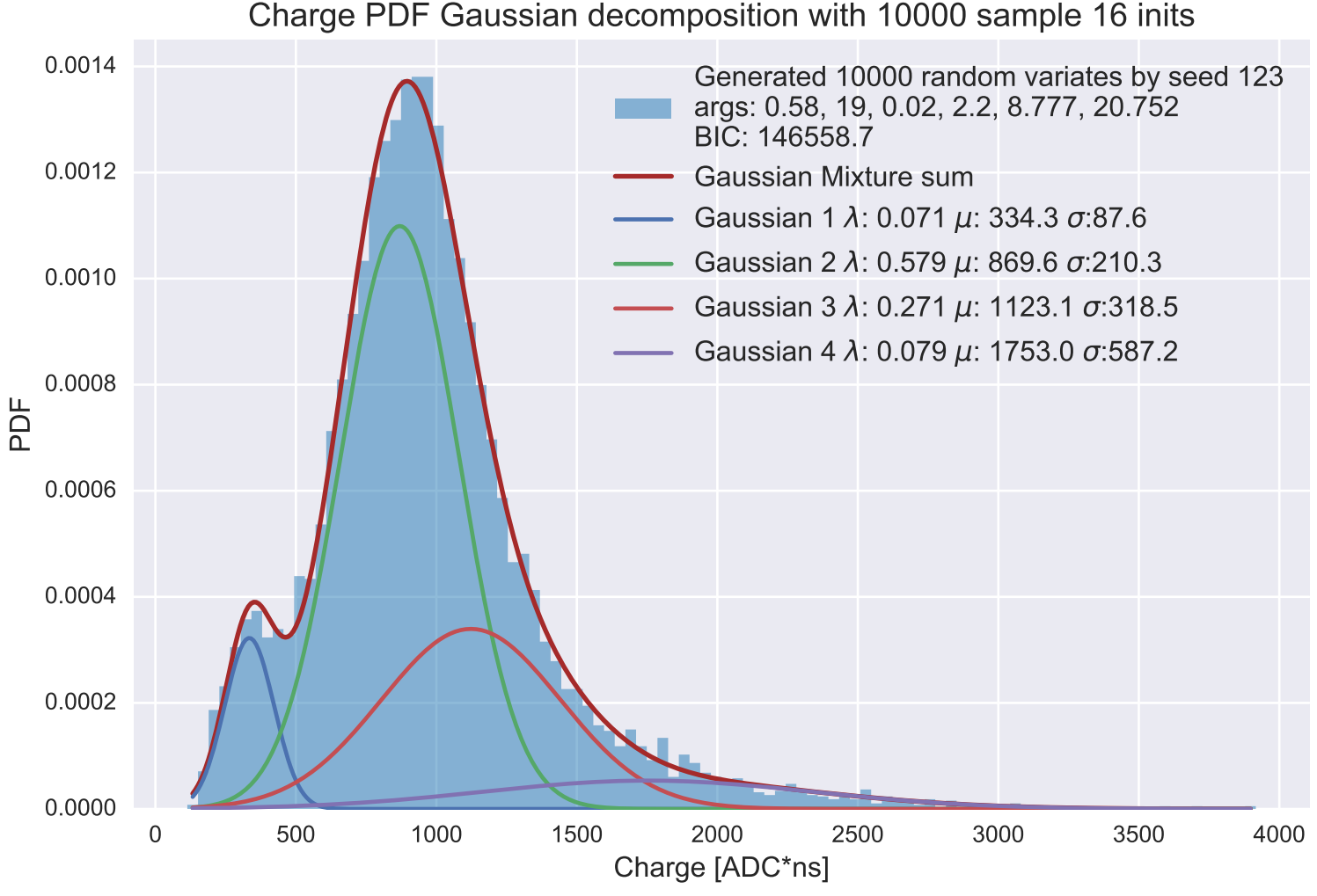
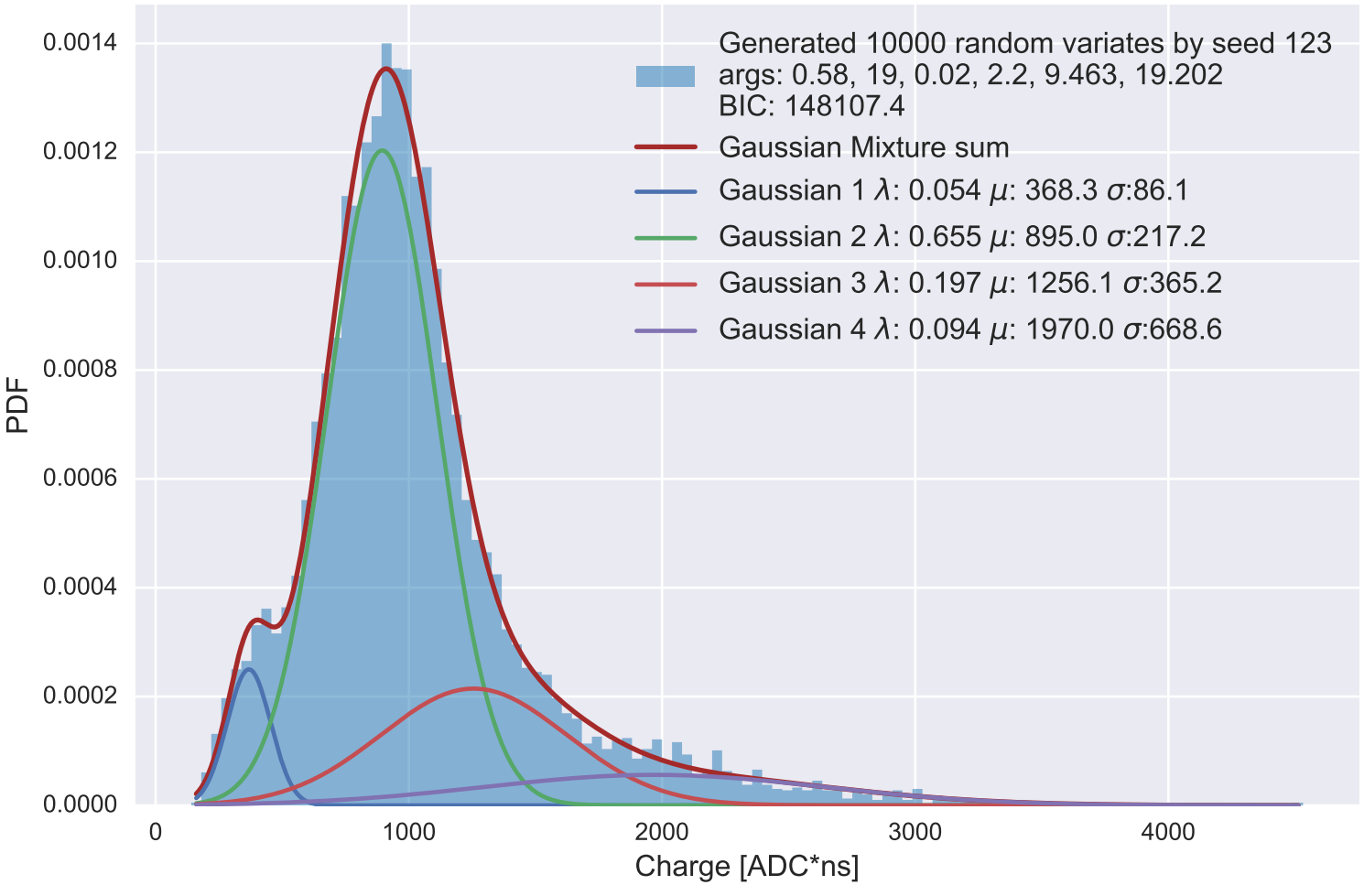
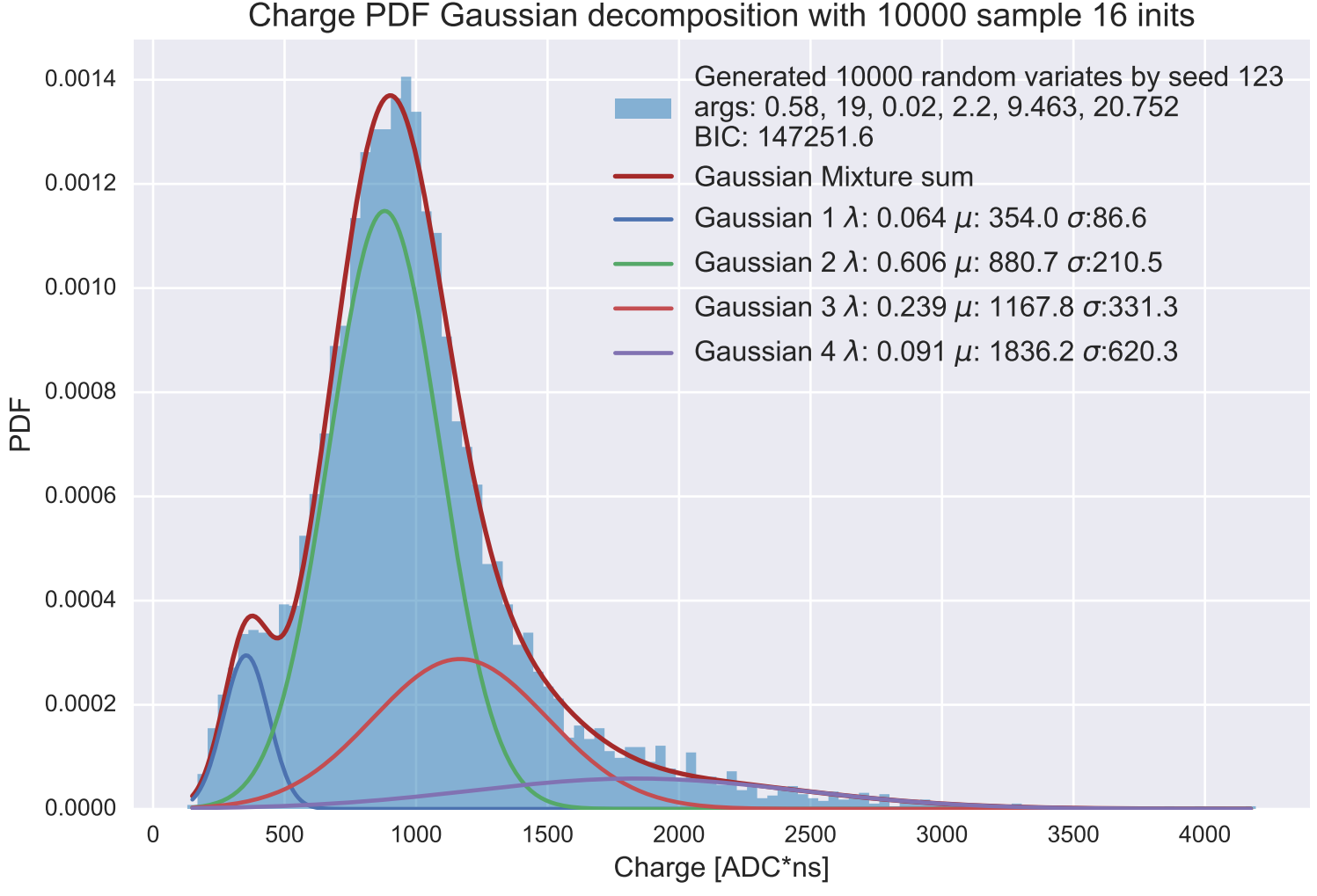
3000
Charge [ADC*ns]

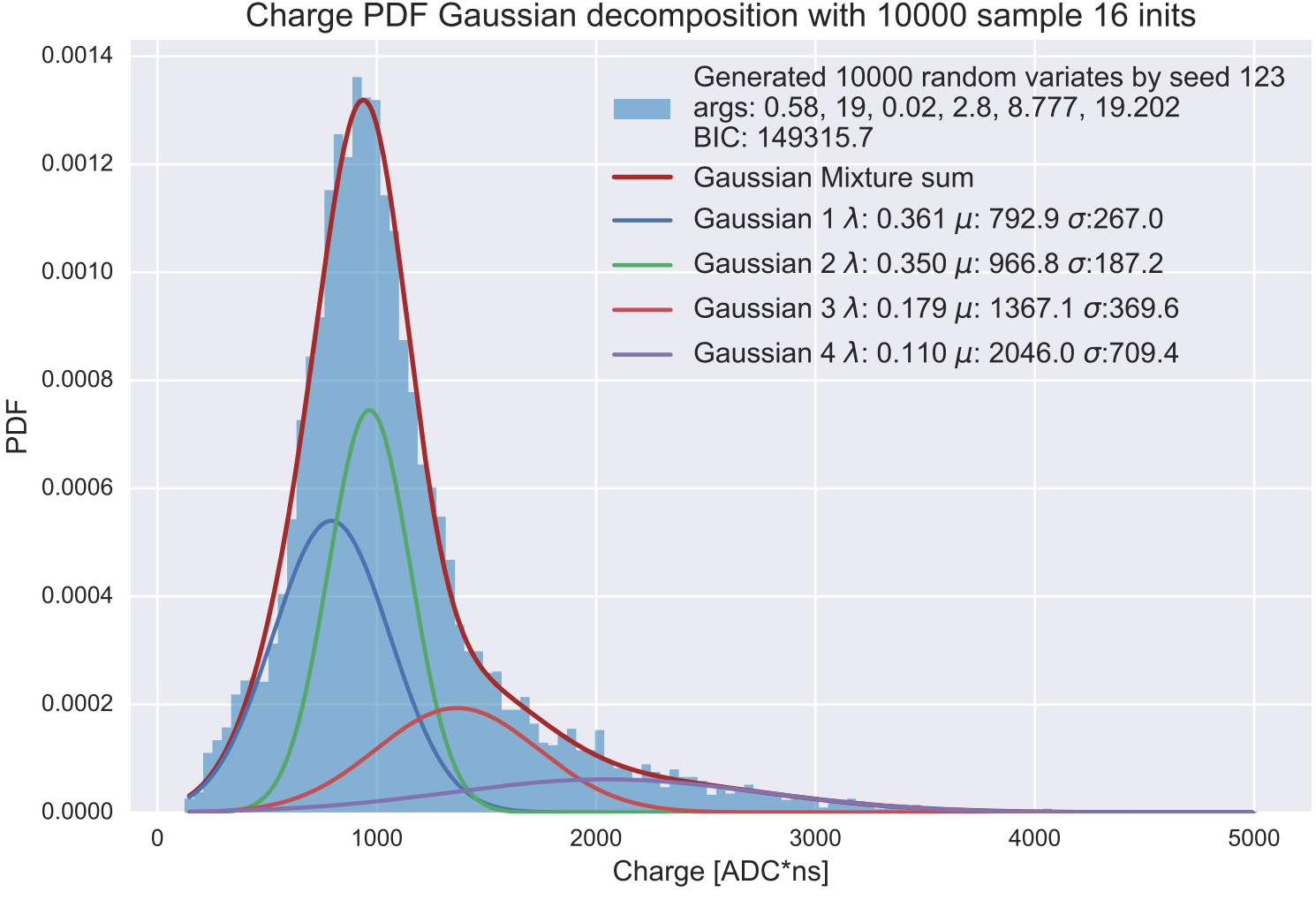

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 17, 0.03, 2.8, 9.463, 20.752
BIC: 139241.1
Gaussian Mixture sum
Gaussian 1 λ: 0.378 μ: 472.8 σ:156.2
Gaussian 2 λ: 0.317 μ: 578.7 σ:117.6
Gaussian 3 λ: 0.194 μ: 800.4 σ:221.9
Gaussian 4 λ: 0.112 μ: 1207.3 σ:421.7
PDF
0.0020
0.0015
0.0010
0.0005
0.0000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]

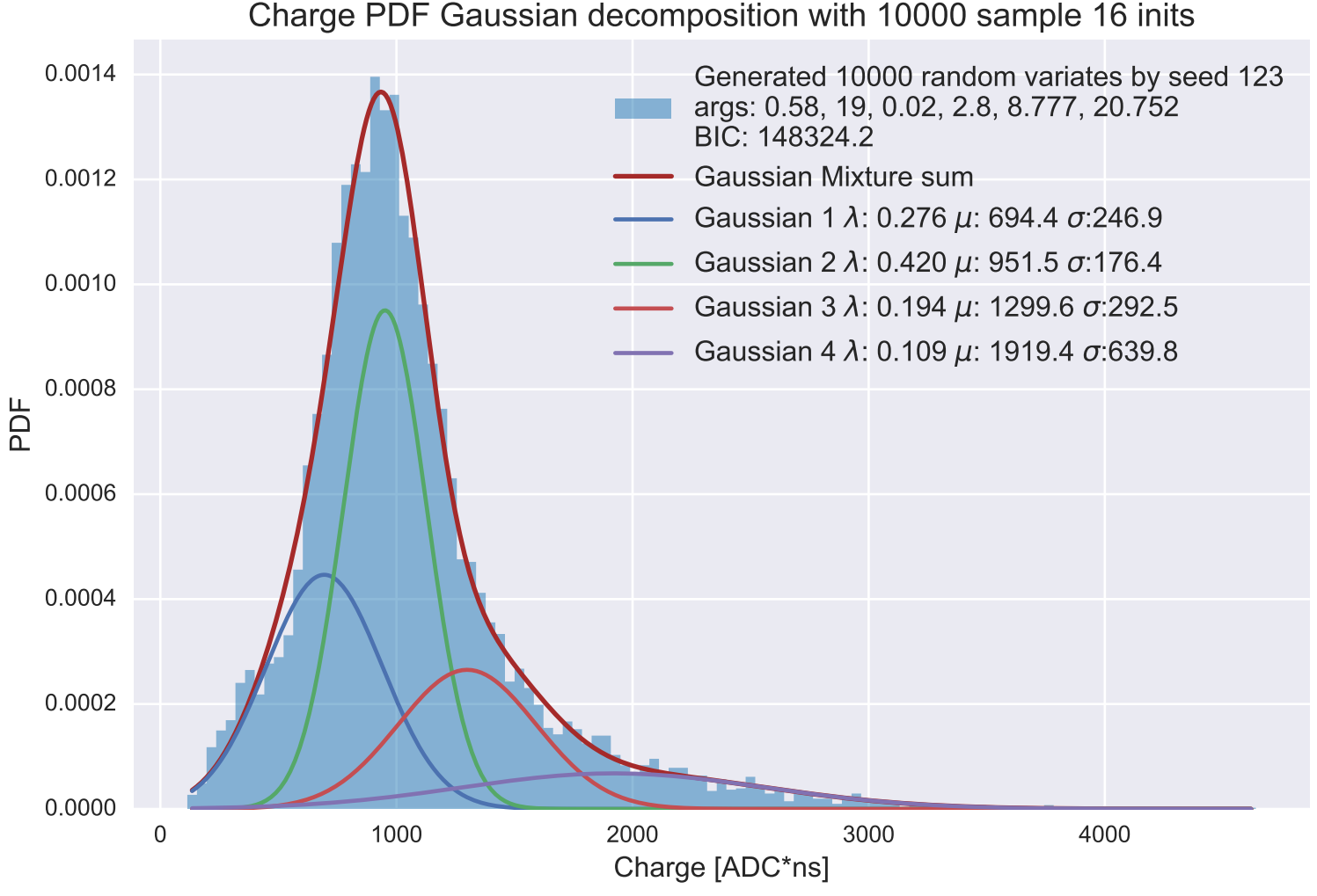

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.02, 2.2, 8.777, 19.202
BIC: 147354.2
Gaussian Mixture sum
Gaussian 1 λ: 0.062 μ: 348.2 σ:87.6
Gaussian 2 λ: 0.625 μ: 883.4 σ:214.0
Gaussian 3 λ: 0.225 μ: 1185.7 σ:340.6
Gaussian 4 λ: 0.088 μ: 1856.7 σ:628.5
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]

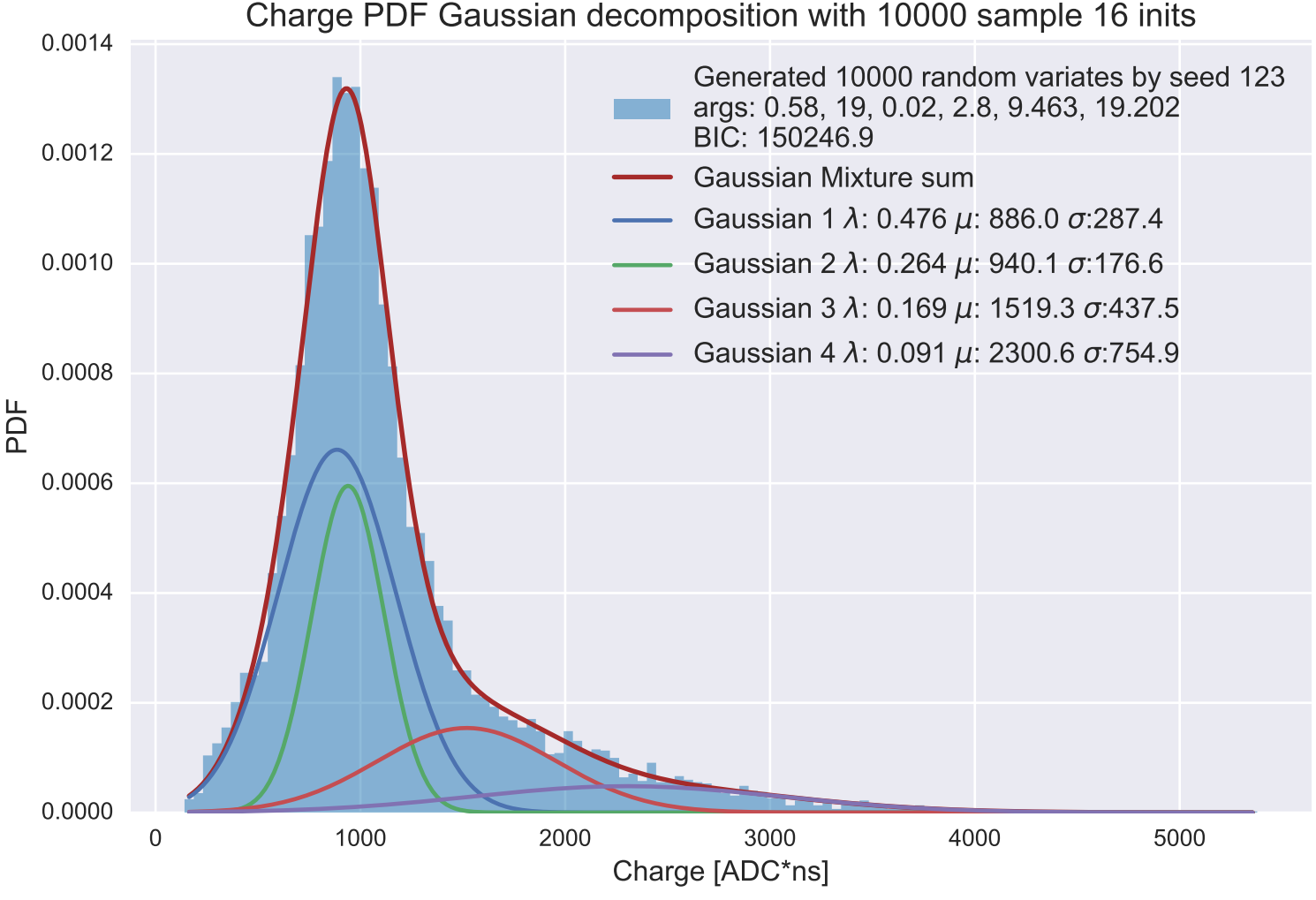

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.02, 2.2, 8.777, 20.752
BIC: 146558.7
Gaussian Mixture sum
Gaussian 1 λ: 0.071 μ: 334.3 σ:87.6
Gaussian 2 λ: 0.579 μ: 869.6 σ:210.3
Gaussian 3 λ: 0.271 μ: 1123.1 σ:318.5
Gaussian 4 λ: 0.079 μ: 1753.0 σ:587.2
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
1500
2000
2500
3000
3500
4000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.02, 2.2, 9.463, 19.202
BIC: 148107.4
Gaussian Mixture sum
Gaussian 1 λ: 0.054 μ: 368.3 σ:86.1
Gaussian 2 λ: 0.655 μ: 895.0 σ:217.2
Gaussian 3 λ: 0.197 μ: 1256.1 σ:365.2
Gaussian 4 λ: 0.094 μ: 1970.0 σ:668.6
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.02, 2.2, 9.463, 20.752
BIC: 147251.6
Gaussian Mixture sum
Gaussian 1 λ: 0.064 μ: 354.0 σ:86.6
Gaussian 2 λ: 0.606 μ: 880.7 σ:210.5
Gaussian 3 λ: 0.239 μ: 1167.8 σ:331.3
Gaussian 4 λ: 0.091 μ: 1836.2 σ:620.3
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
500
1000
1500
2000
2500
3000
3500
4000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.02, 2.8, 8.777, 19.202
BIC: 149315.7
Gaussian Mixture sum
Gaussian 1 λ: 0.361 μ: 792.9 σ:267.0
Gaussian 2 λ: 0.350 μ: 966.8 σ:187.2
Gaussian 3 λ: 0.179 μ: 1367.1 σ:369.6
Gaussian 4 λ: 0.110 μ: 2046.0 σ:709.4
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
5000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.02, 2.8, 8.777, 20.752
BIC: 148324.2
Gaussian Mixture sum
Gaussian 1 λ: 0.276 μ: 694.4 σ:246.9
Gaussian 2 λ: 0.420 μ: 951.5 σ:176.4
Gaussian 3 λ: 0.194 μ: 1299.6 σ:292.5
Gaussian 4 λ: 0.109 μ: 1919.4 σ:639.8
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.02, 2.8, 9.463, 19.202
BIC: 150246.9
Gaussian Mixture sum
Gaussian 1 λ: 0.476 μ: 886.0 σ:287.4
Gaussian 2 λ: 0.264 μ: 940.1 σ:176.6
Gaussian 3 λ: 0.169 μ: 1519.3 σ:437.5
Gaussian 4 λ: 0.091 μ: 2300.6 σ:754.9
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
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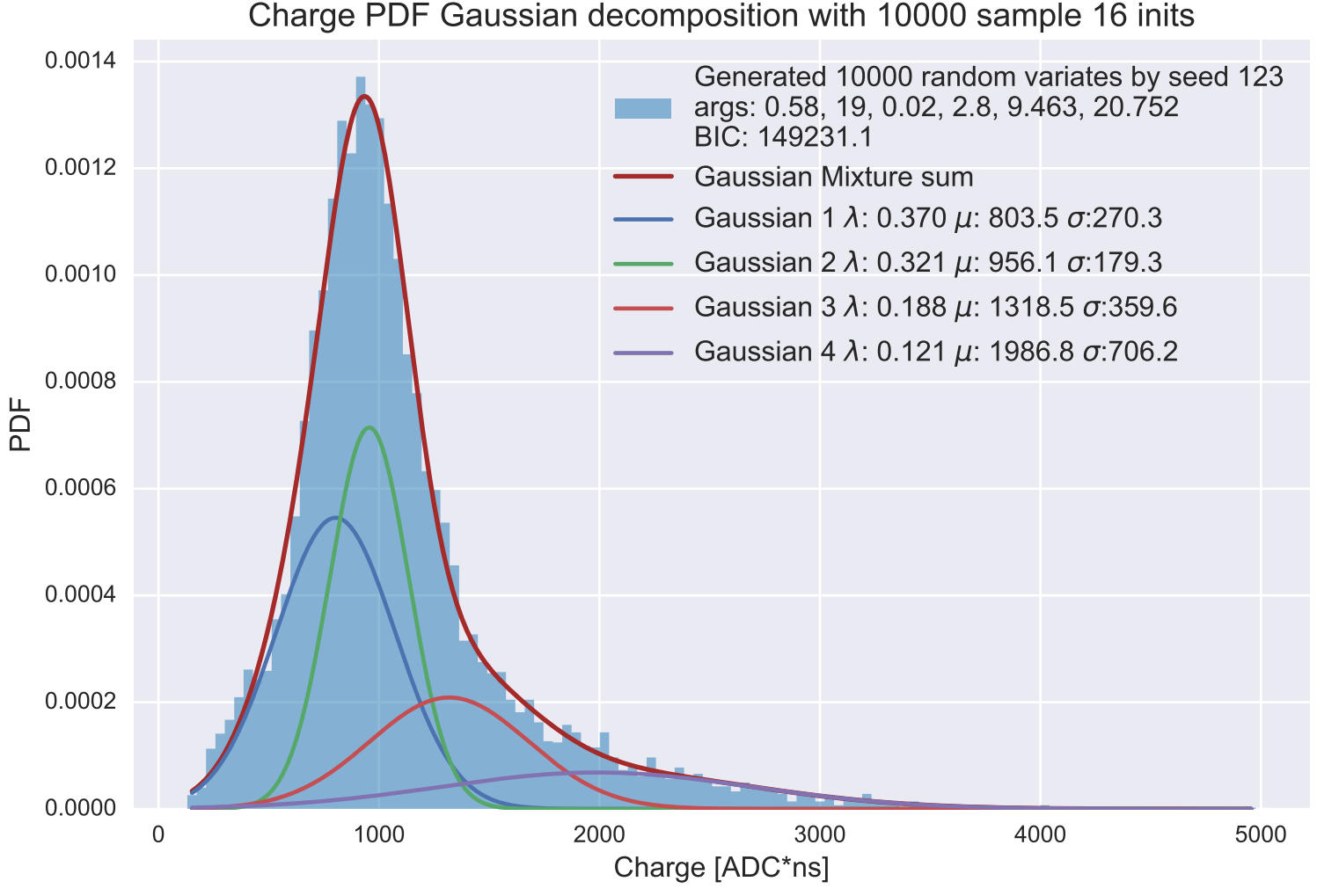
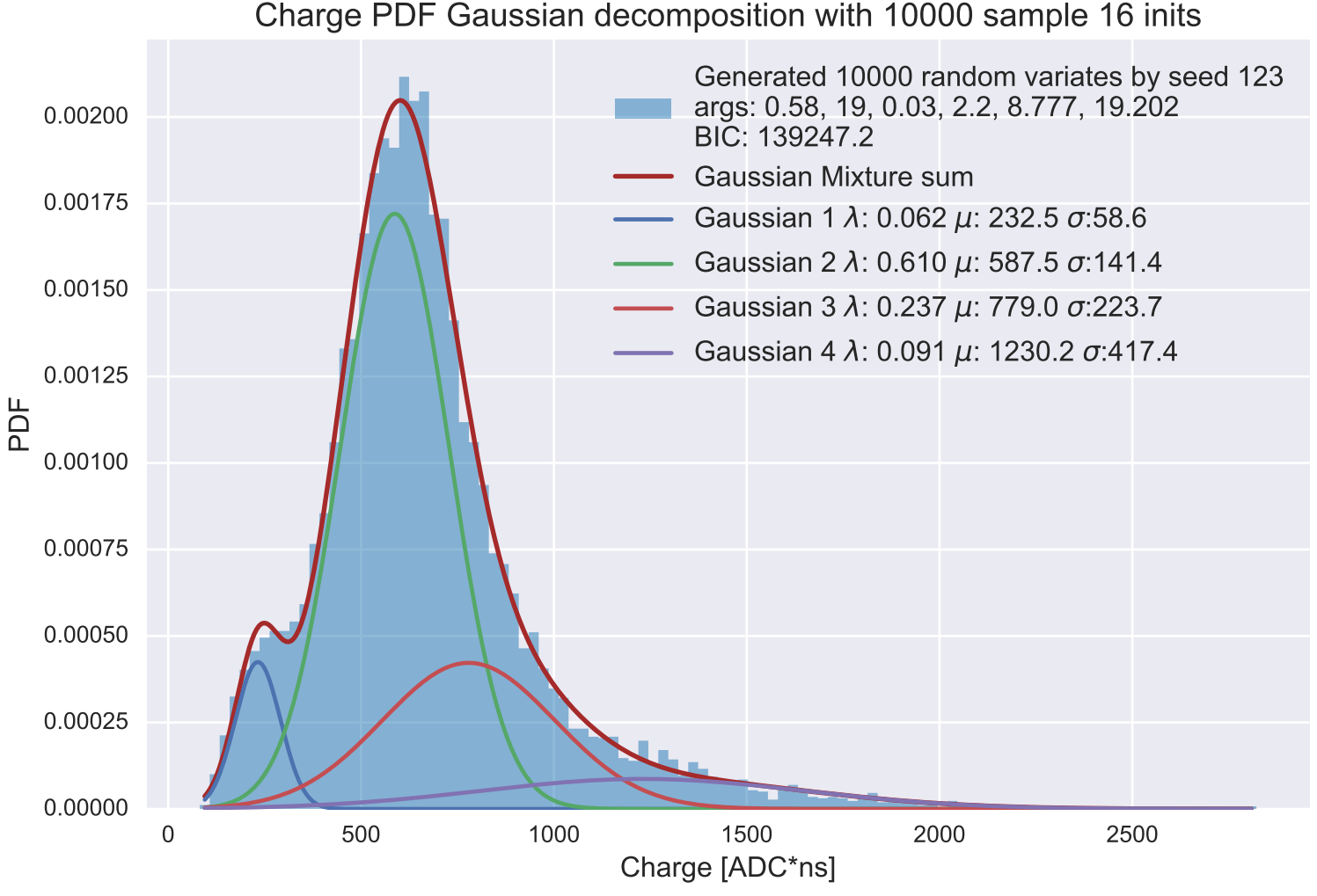
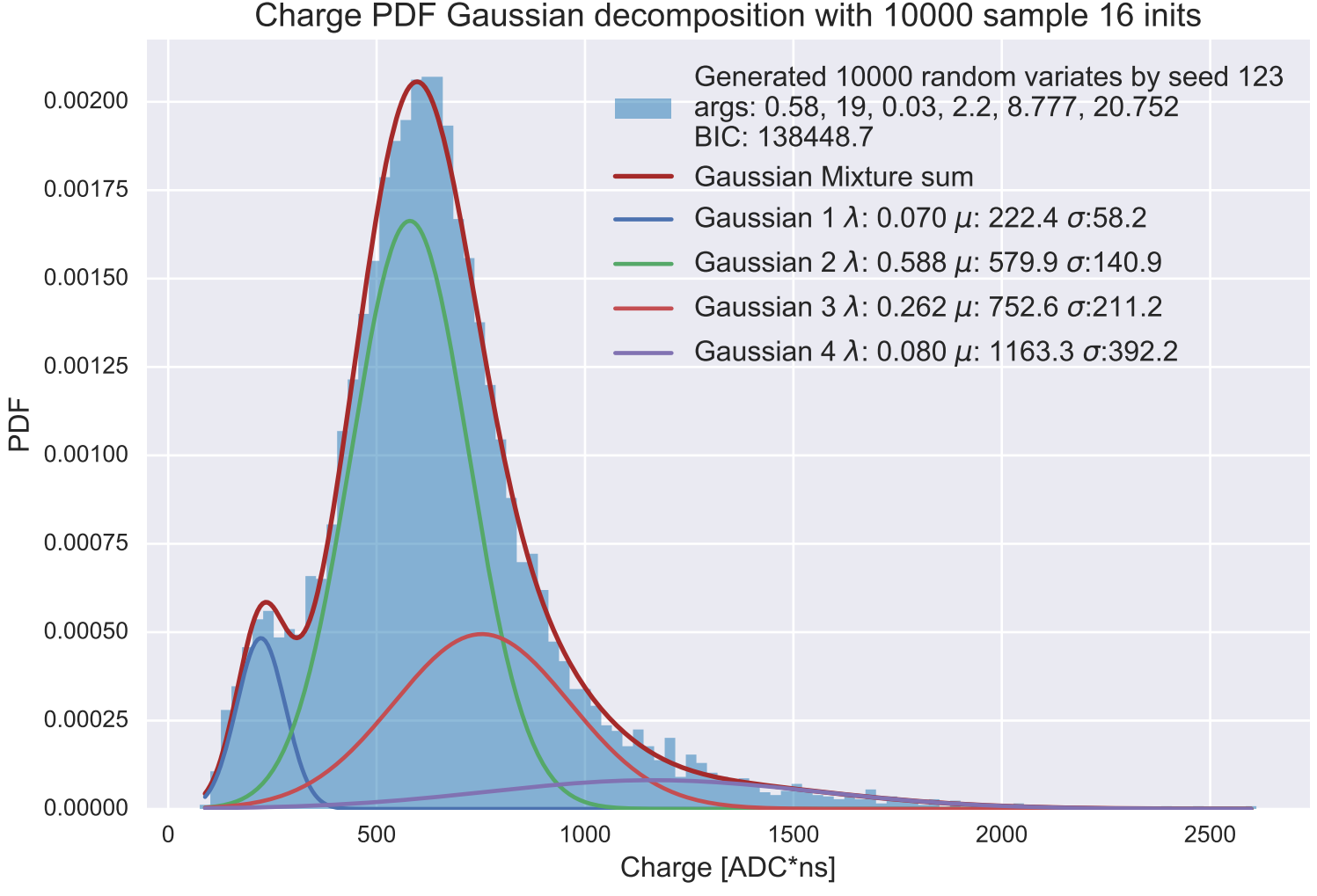
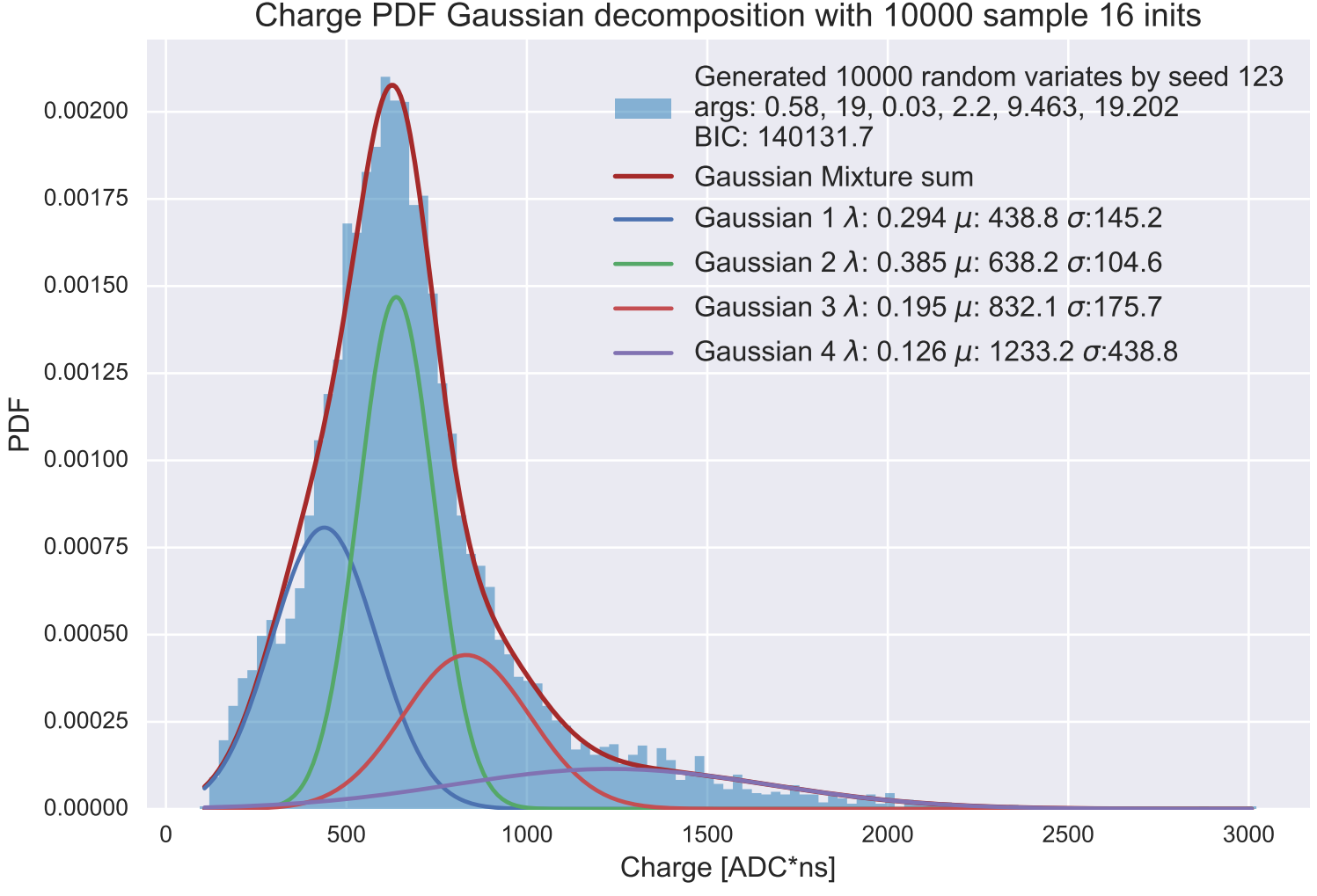
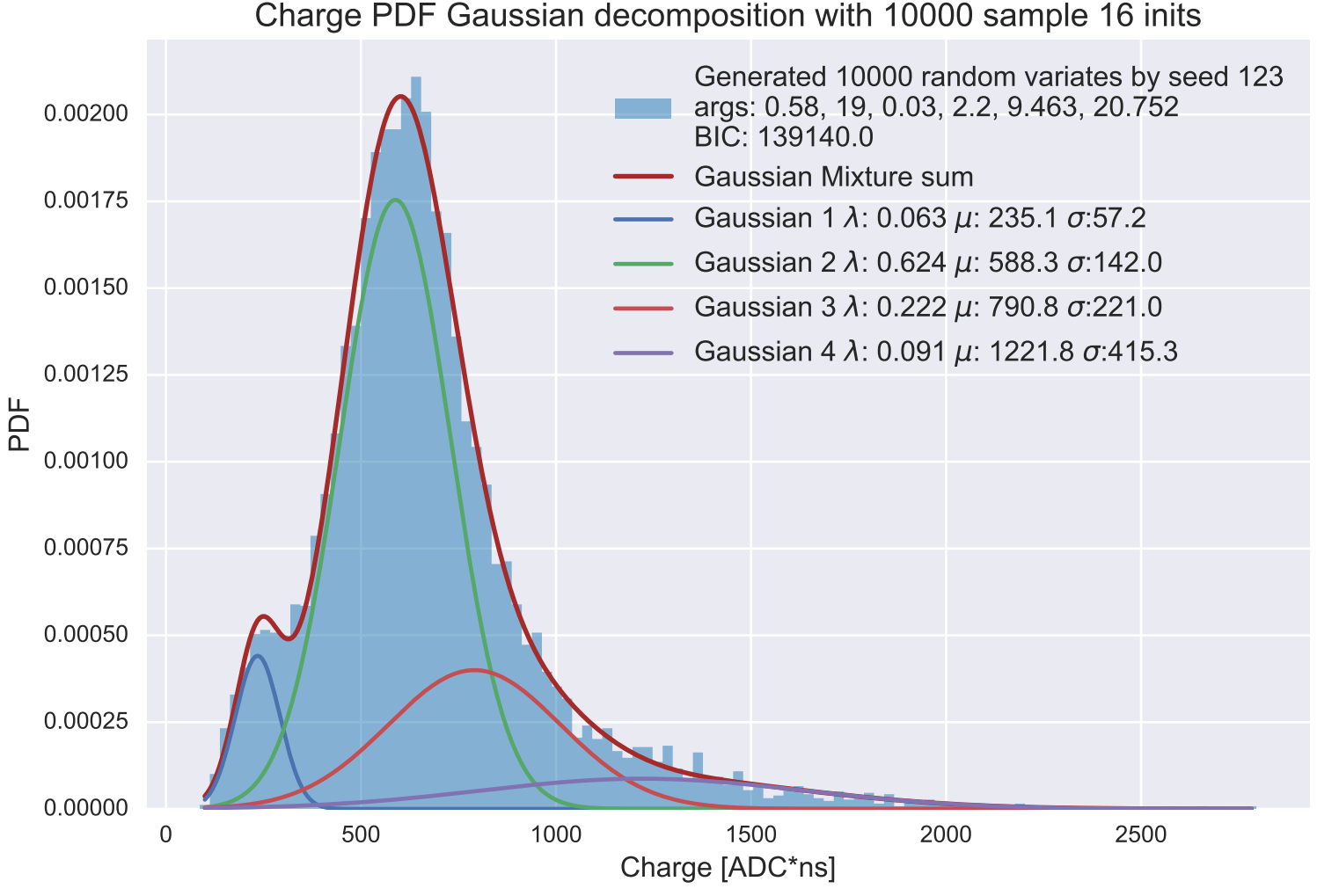
3000
4000
5000
Charge [ADC*ns]

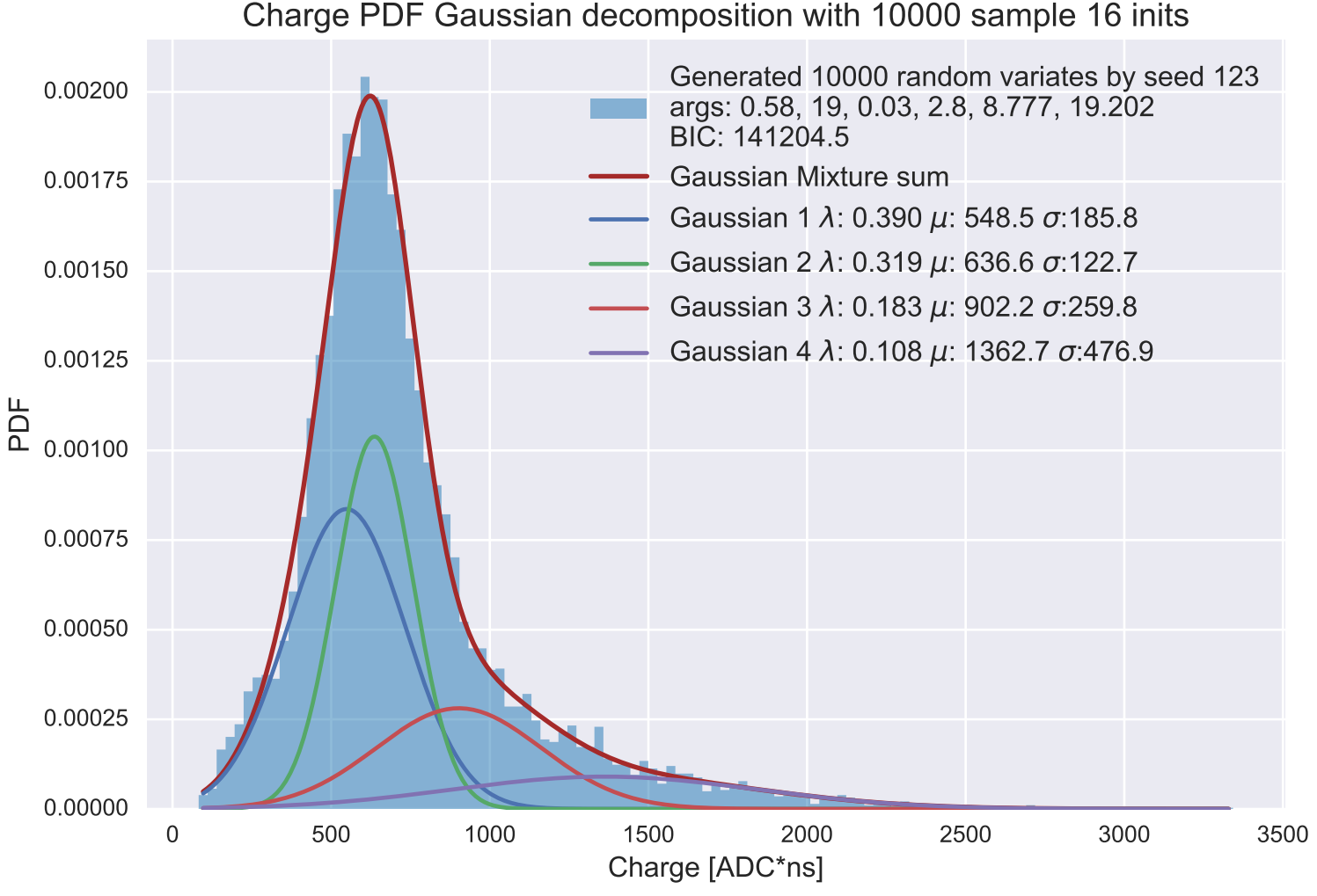

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.02, 2.8, 9.463, 20.752
BIC: 149231.1
Gaussian Mixture sum
Gaussian 1 λ: 0.370 μ: 803.5 σ:270.3
Gaussian 2 λ: 0.321 μ: 956.1 σ:179.3
Gaussian 3 λ: 0.188 μ: 1318.5 σ:359.6
Gaussian 4 λ: 0.121 μ: 1986.8 σ:706.2
PDF
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
0
1000
2000
3000
4000
5000
Charge [ADC*ns]

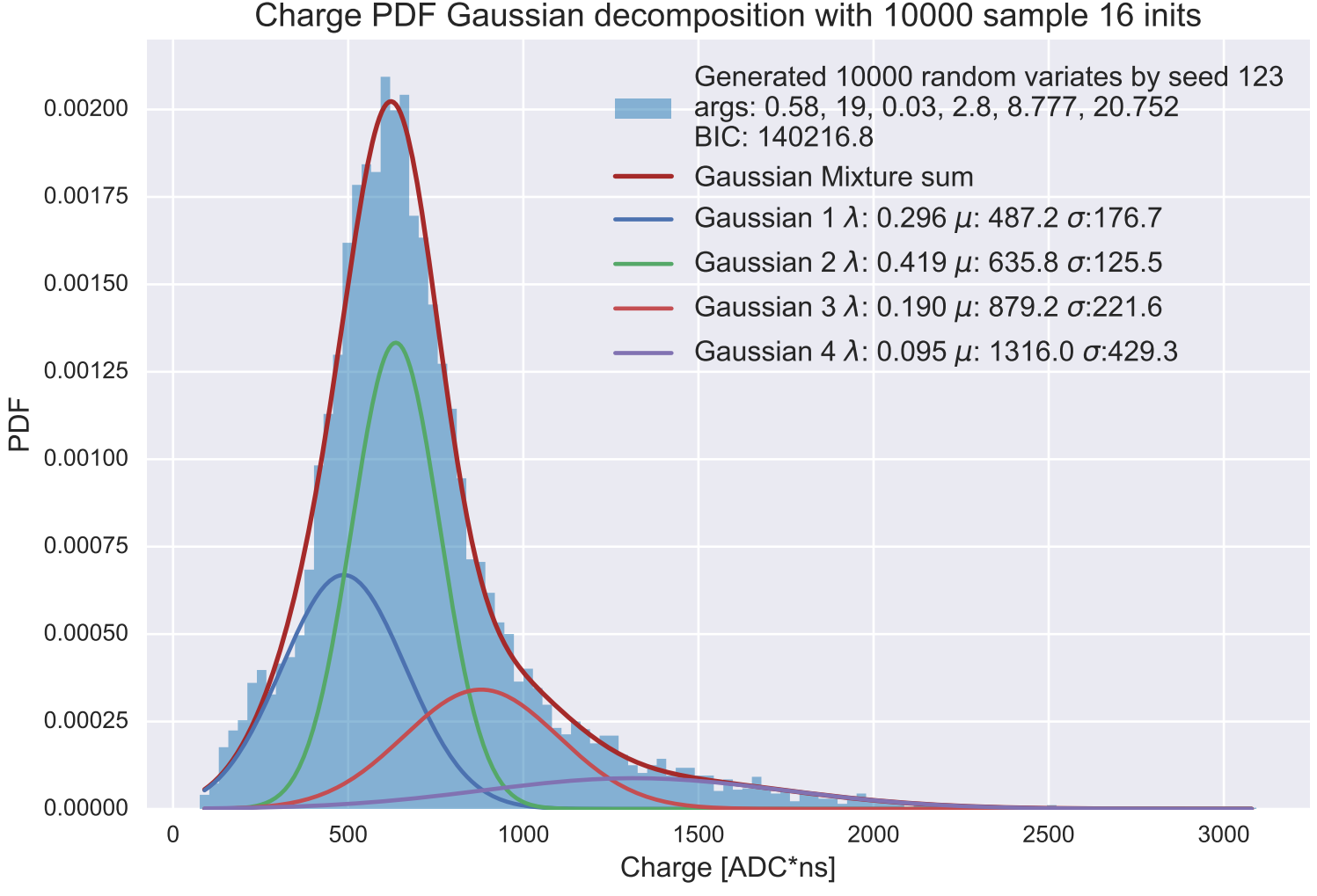

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.03, 2.2, 8.777, 19.202
BIC: 139247.2
Gaussian Mixture sum
Gaussian 1 λ: 0.062 μ: 232.5 σ:58.6
Gaussian 2 λ: 0.610 μ: 587.5 σ:141.4
Gaussian 3 λ: 0.237 μ: 779.0 σ:223.7
Gaussian 4 λ: 0.091 μ: 1230.2 σ:417.4
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
Charge [ADC*ns]

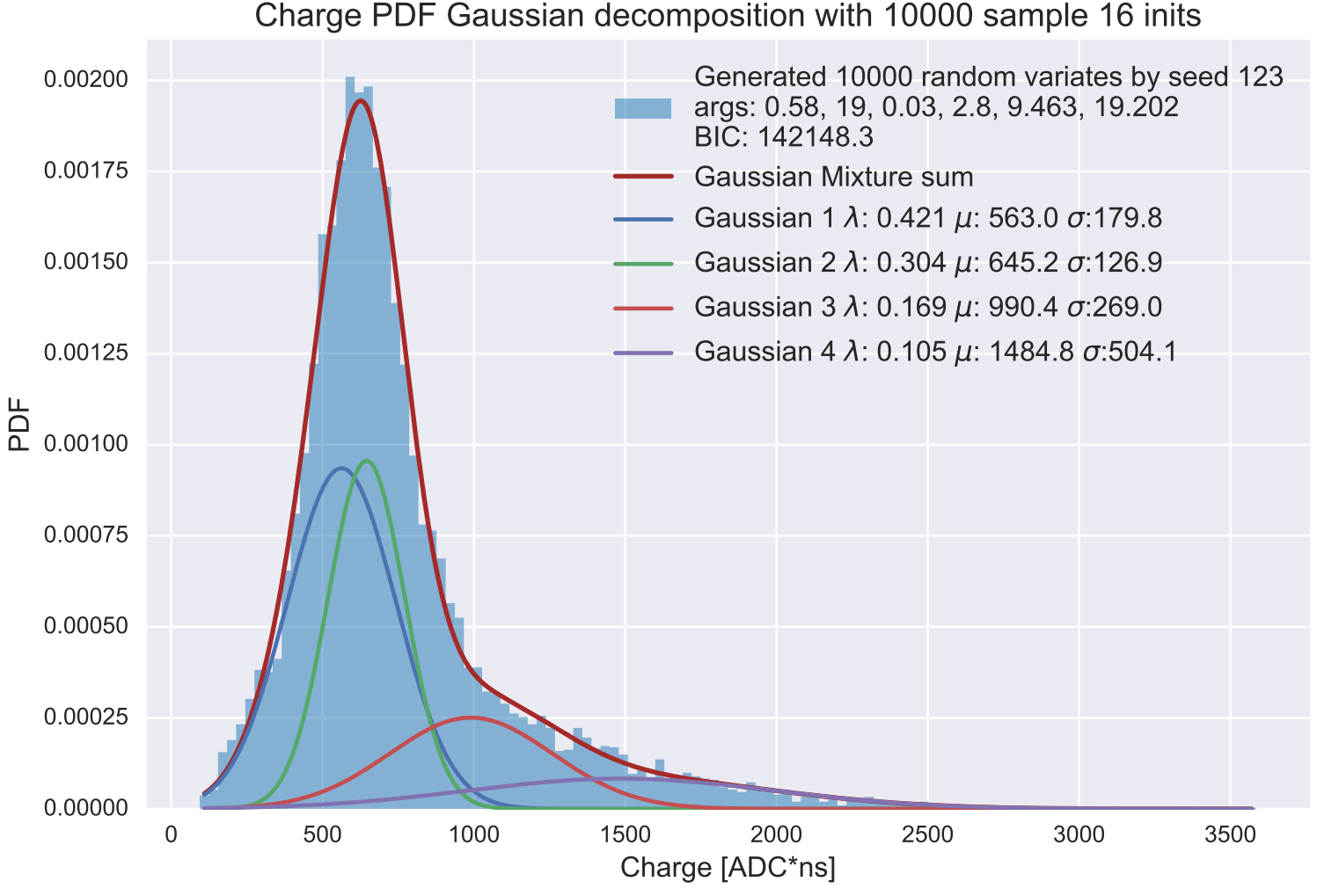

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.03, 2.2, 8.777, 20.752
BIC: 138448.7
Gaussian Mixture sum
Gaussian 1 λ: 0.070 μ: 222.4 σ:58.2
Gaussian 2 λ: 0.588 μ: 579.9 σ:140.9
Gaussian 3 λ: 0.262 μ: 752.6 σ:211.2
Gaussian 4 λ: 0.080 μ: 1163.3 σ:392.2
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
Charge [ADC*ns]

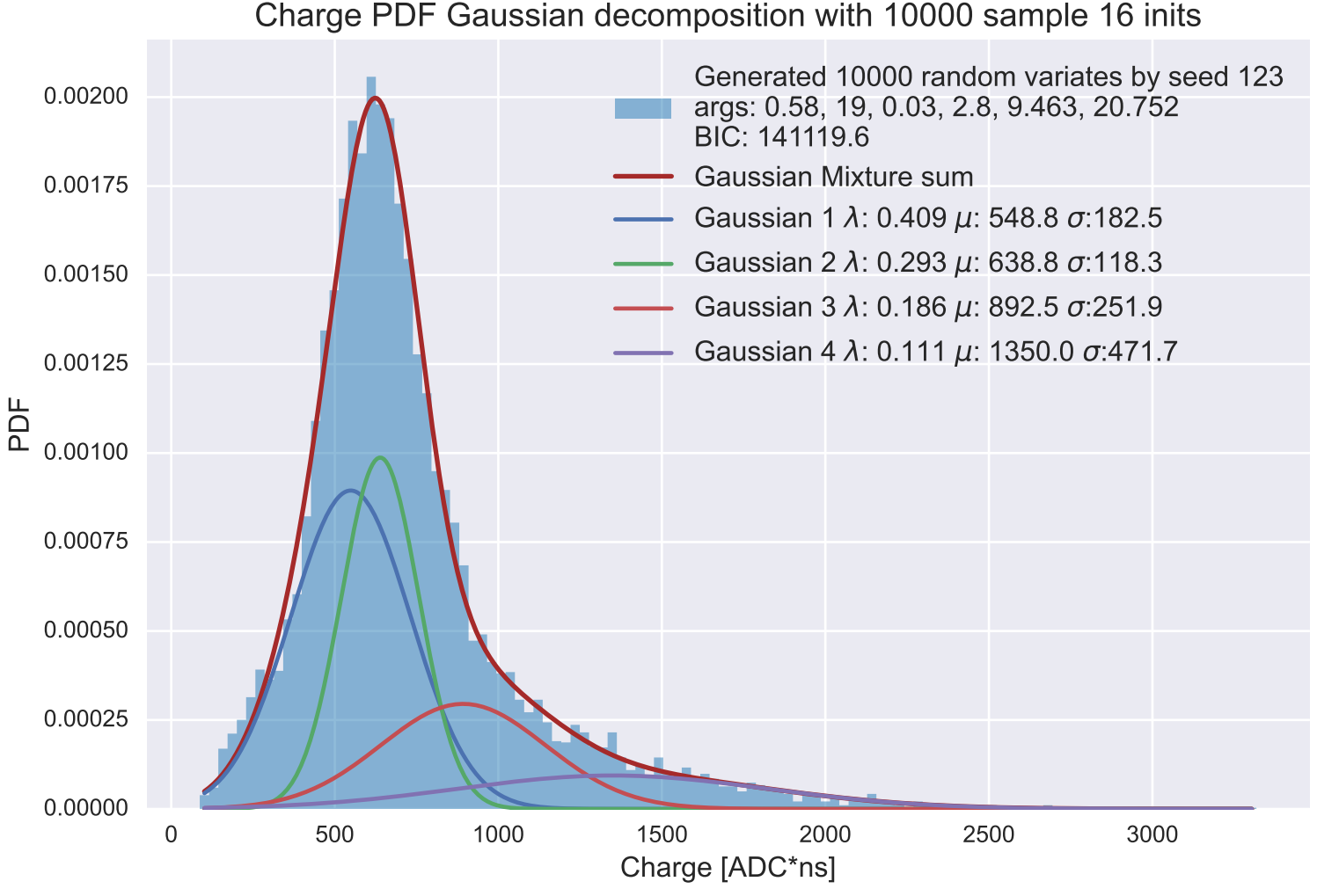

Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.03, 2.2, 9.463, 19.202
BIC: 140131.7
Gaussian Mixture sum
Gaussian 1 λ: 0.294 μ: 438.8 σ:145.2
Gaussian 2 λ: 0.385 μ: 638.2 σ:104.6
Gaussian 3 λ: 0.195 μ: 832.1 σ:175.7
Gaussian 4 λ: 0.126 μ: 1233.2 σ:438.8
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.03, 2.2, 9.463, 20.752
BIC: 139140.0
Gaussian Mixture sum
Gaussian 1 λ: 0.063 μ: 235.1 σ:57.2
Gaussian 2 λ: 0.624 μ: 588.3 σ:142.0
Gaussian 3 λ: 0.222 μ: 790.8 σ:221.0
Gaussian 4 λ: 0.091 μ: 1221.8 σ:415.3
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.03, 2.8, 8.777, 19.202
BIC: 141204.5
Gaussian Mixture sum
Gaussian 1 λ: 0.390 μ: 548.5 σ:185.8
Gaussian 2 λ: 0.319 μ: 636.6 σ:122.7
Gaussian 3 λ: 0.183 μ: 902.2 σ:259.8
Gaussian 4 λ: 0.108 μ: 1362.7 σ:476.9
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
3500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.03, 2.8, 8.777, 20.752
BIC: 140216.8
Gaussian Mixture sum
Gaussian 1 λ: 0.296 μ: 487.2 σ:176.7
Gaussian 2 λ: 0.419 μ: 635.8 σ:125.5
Gaussian 3 λ: 0.190 μ: 879.2 σ:221.6
Gaussian 4 λ: 0.095 μ: 1316.0 σ:429.3
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.03, 2.8, 9.463, 19.202
BIC: 142148.3
Gaussian Mixture sum
Gaussian 1 λ: 0.421 μ: 563.0 σ:179.8
Gaussian 2 λ: 0.304 μ: 645.2 σ:126.9
Gaussian 3 λ: 0.169 μ: 990.4 σ:269.0
Gaussian 4 λ: 0.105 μ: 1484.8 σ:504.1
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
3500
Charge [ADC*ns]


Charge PDF Gaussian decomposition with 10000 sample 16 inits
Generated 10000 random variates by seed 123
args: 0.58, 19, 0.03, 2.8, 9.463, 20.752
BIC: 141119.6
Gaussian Mixture sum
Gaussian 1 λ: 0.409 μ: 548.8 σ:182.5
Gaussian 2 λ: 0.293 μ: 638.8 σ:118.3
Gaussian 3 λ: 0.186 μ: 892.5 σ:251.9
Gaussian 4 λ: 0.111 μ: 1350.0 σ:471.7
PDF
0.00200
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
0
500
1000
1500
2000
2500
3000
Charge [ADC*ns]