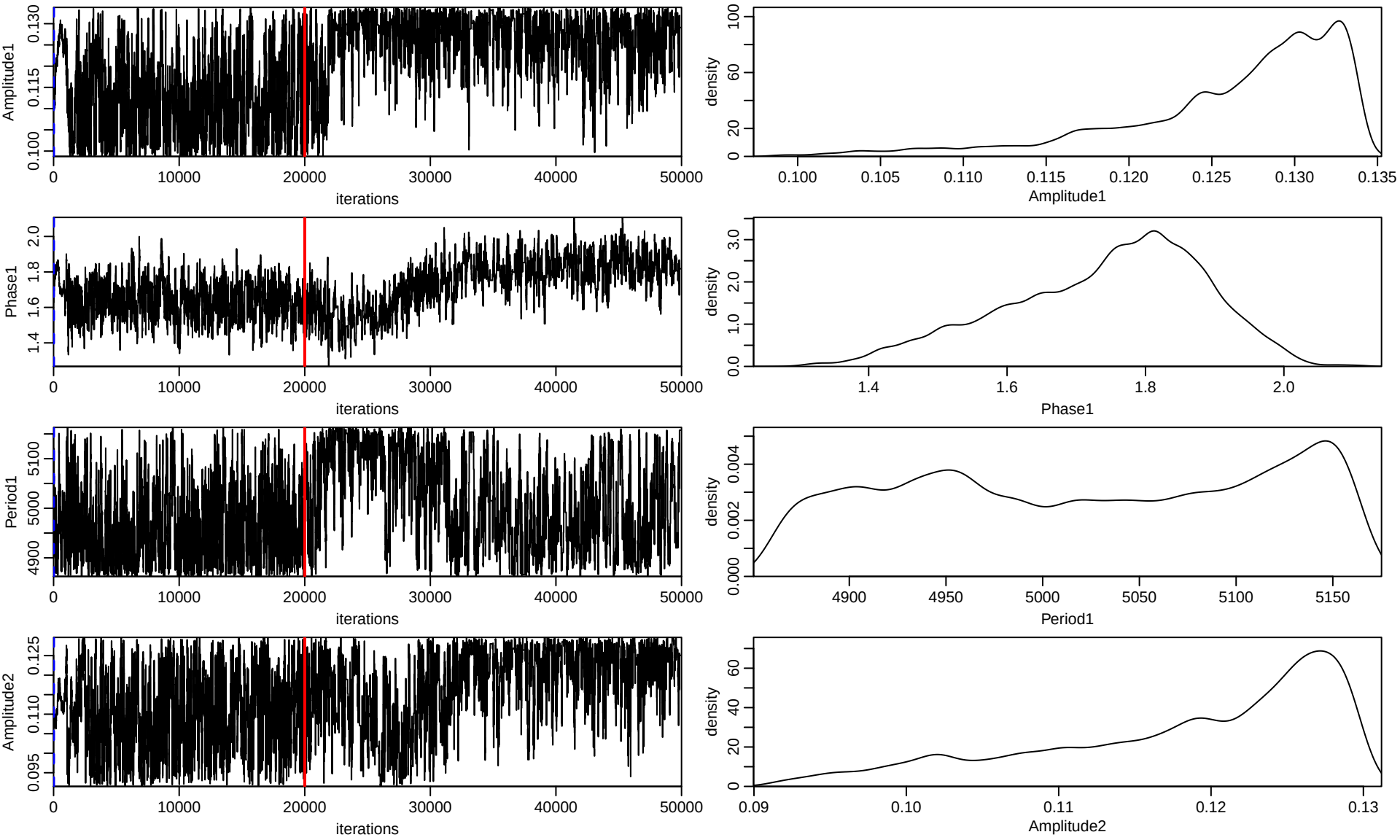
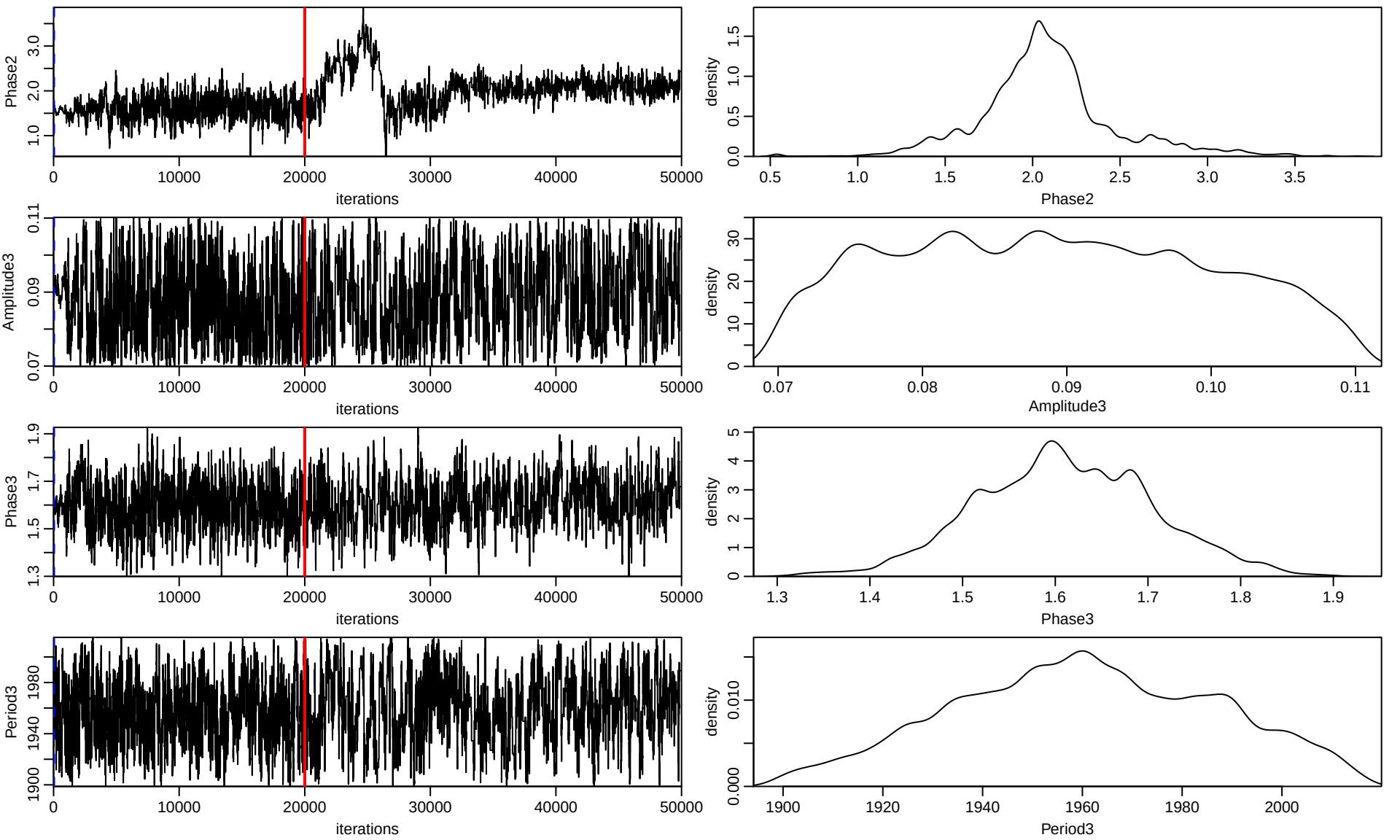
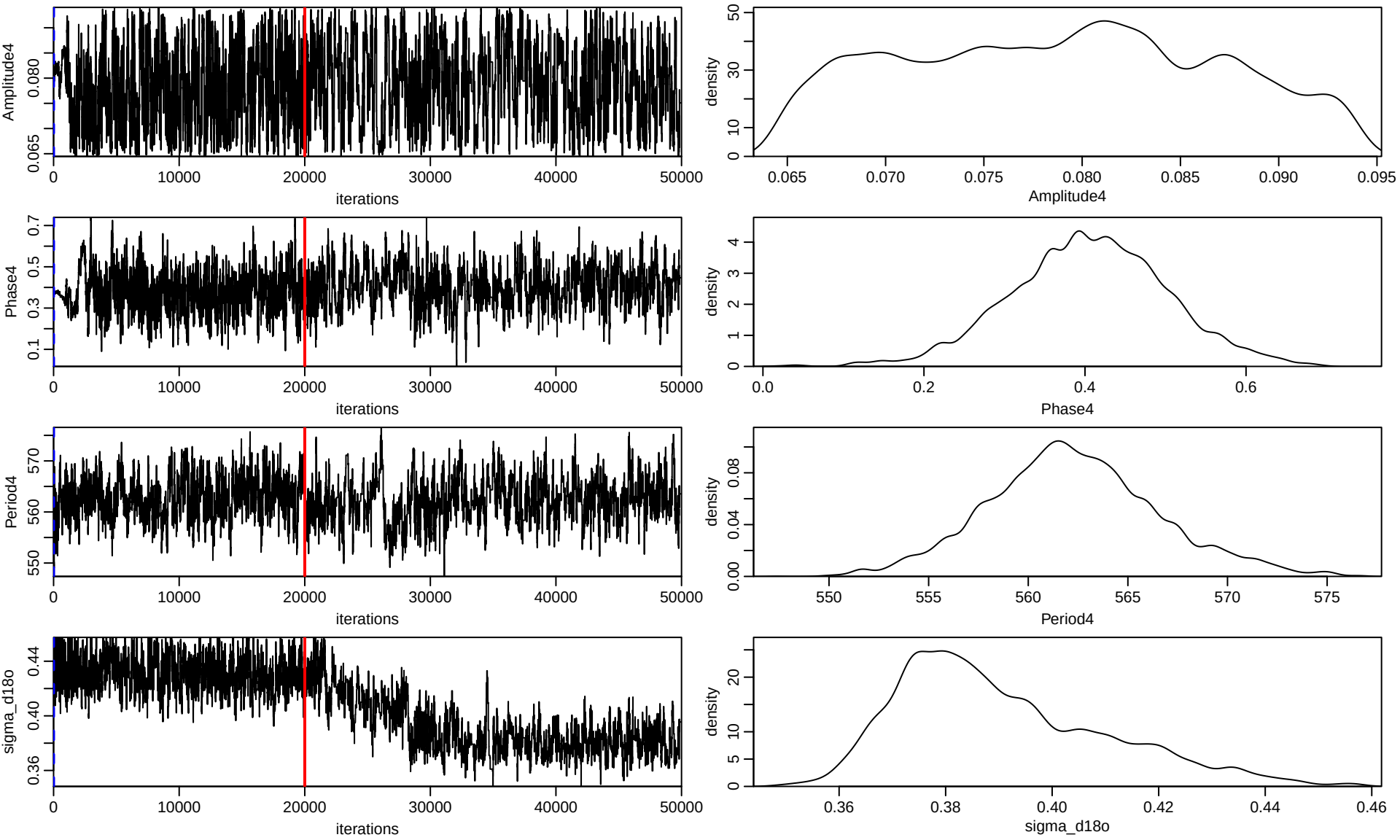
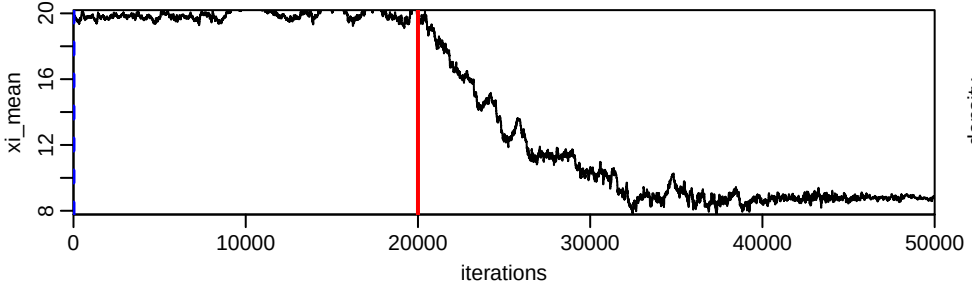
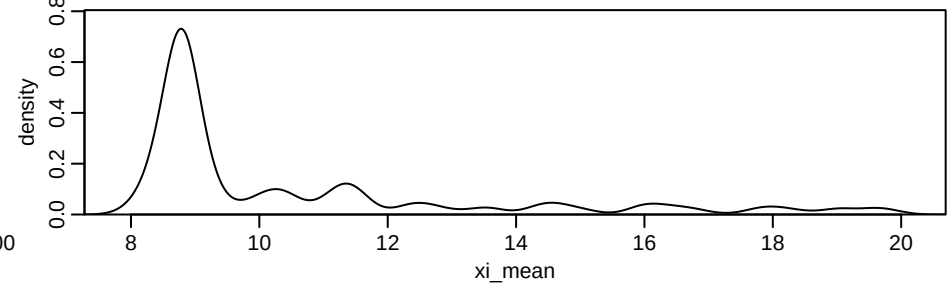
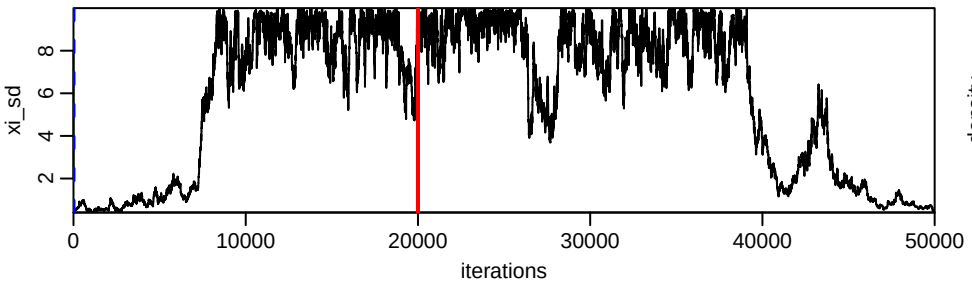

Amplitude1
0.100
0.115
0.130
0
10000
20000
30000
40000
50000
iterations
density
0
20
60
100
0.100
0.105
0.110
0.115
0.120
0.125
0.130
0.135
Amplitude1
Phase1
1.4
1.6
1.8
2.0
iterations
density
0.0
1.0
2.0
3.0
1.4
1.6
1.8
2.0
Phase1
Period1
4900
5000
5100
iterations
density
0.000
0.002
0.004
4900
4950
5000
5050
5100
5150
Period1
Amplitude2
0.095
0.110
0.125
iterations
density
0
20
40
60
0.09
0.10
0.11
0.12
0.13
Amplitude2

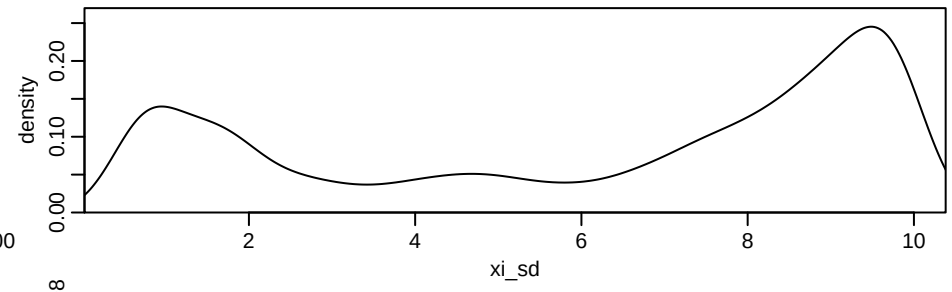

Phase2
iterations
density
Phase2
Amplitude3
iterations
density
Amplitude3
Phase3
iterations
density
Phase3
Period3
iterations
density
Period3

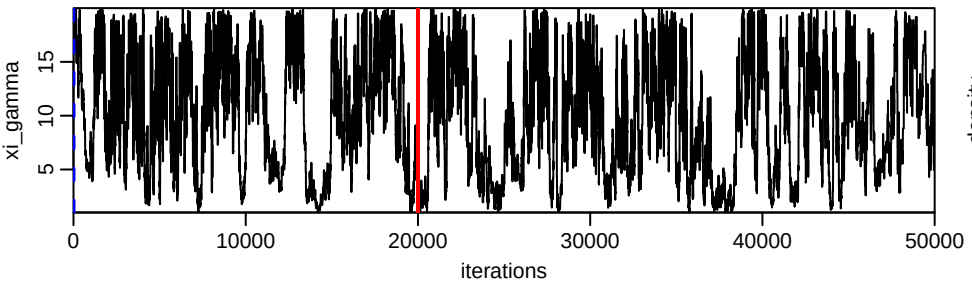

Amplitude4
0.065
0.080
0
10000
20000
30000
40000
50000
iterations
density
0
10
30
50
0.065
0.070
0.075
0.080
0.085
0.090
0.095
Amplitude4
Phase4
0.1
0.3
0.5
0.7
iterations
density
0
1
2
3
4
0.0
0.2
0.4
0.6
Phase4
Period4
550
560
570
iterations
density
0.00
0.04
0.08
550
555
560
565
570
575
Period4
sigma_d18o
0.36
0.40
0.44
iterations
density
0
5
10
20
0.36
0.38
0.40
0.42
0.44
0.46
sigma_d18o

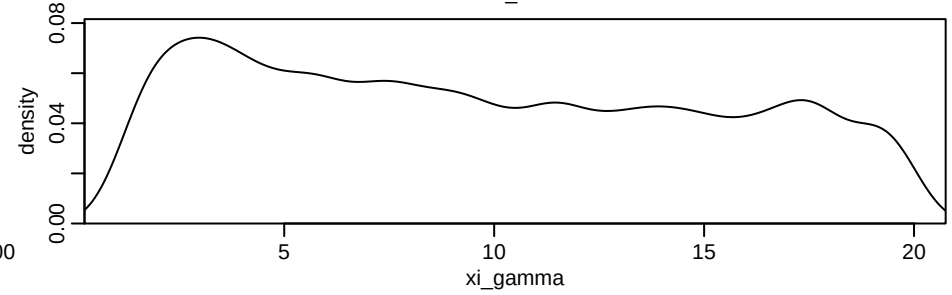

xi_mean
8
12
16
20
0
10000
20000
30000
40000
50000
iterations

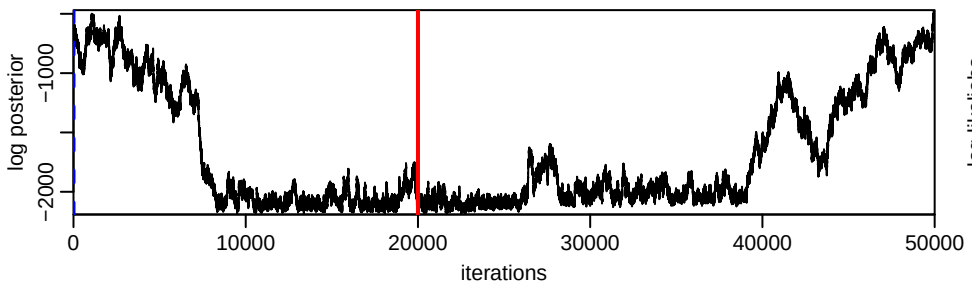

density
0.0
0.2
0.4
0.6
0.8
8
10
12
14
16
18
20
xi_mean

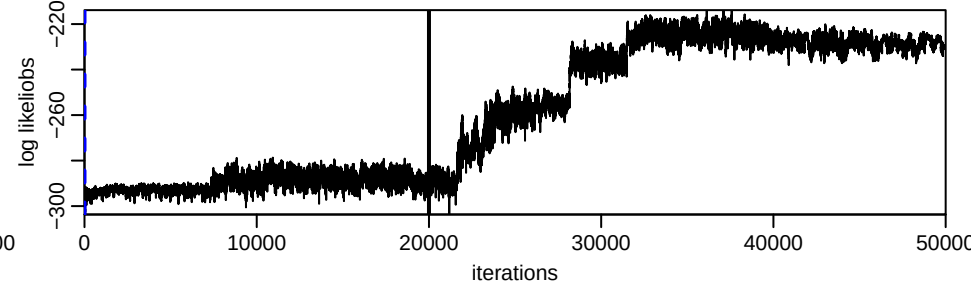

xi_sd
2
4
6
8
0
10000
20000
30000
40000
50000
iterations

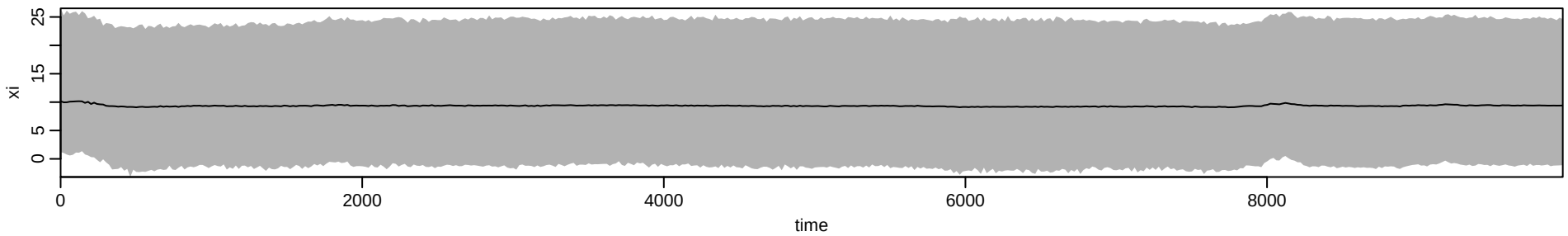

density
0.00
0.10
0.20
2
4
6
8
10
xi_sd


xi_gamma
5
10
15
0
10000
20000
30000
40000
50000
iterations


density
0.00
0.04
0.08
5
10
15
20
xi_gamma


log posterior
−1000
−2000
0
10000
20000
30000
40000
50000
iterations


log likeliobs
−220
−260
−300
0
10000
20000
30000
40000
50000
iterations

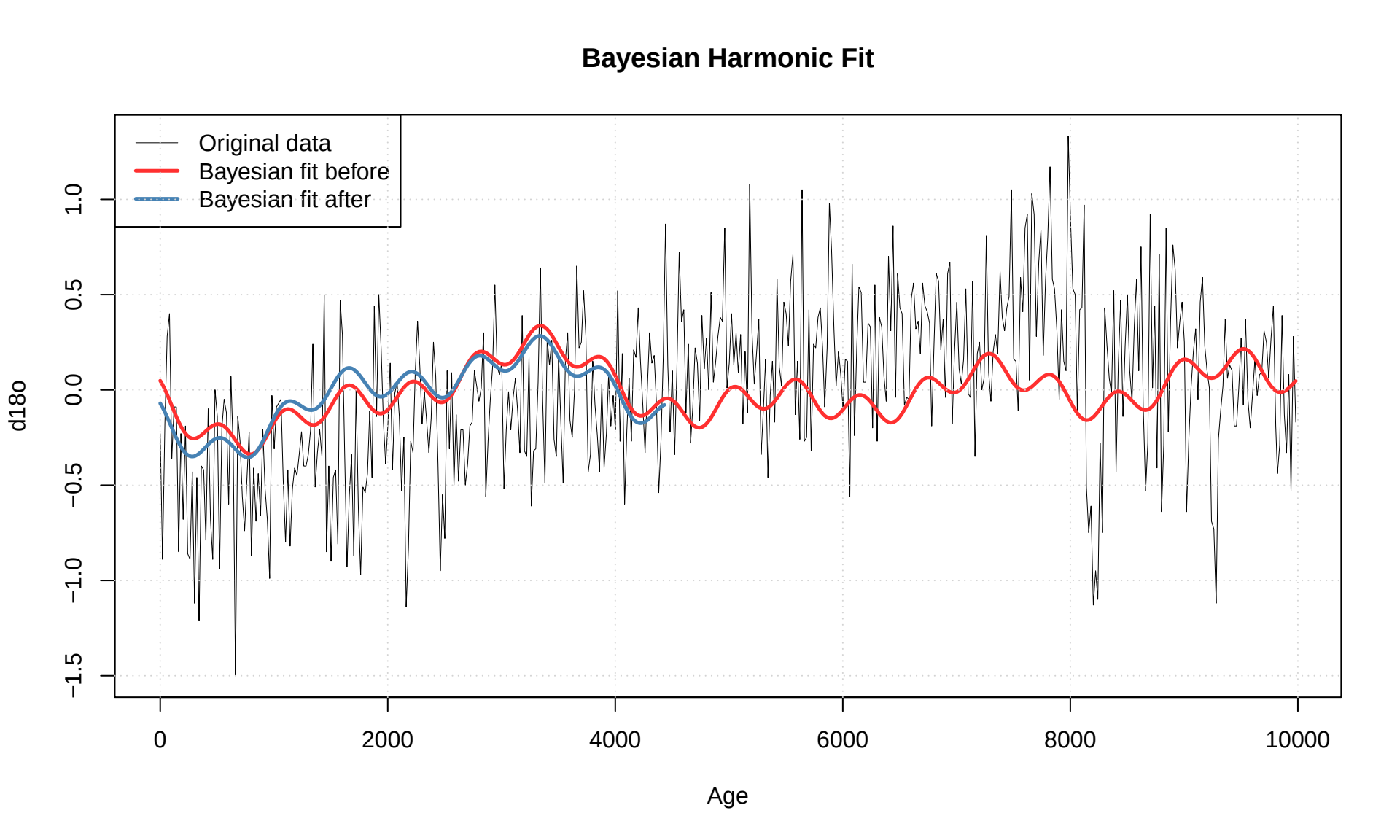

xi
0
5
15
25
0
2000
4000
6000
8000
time

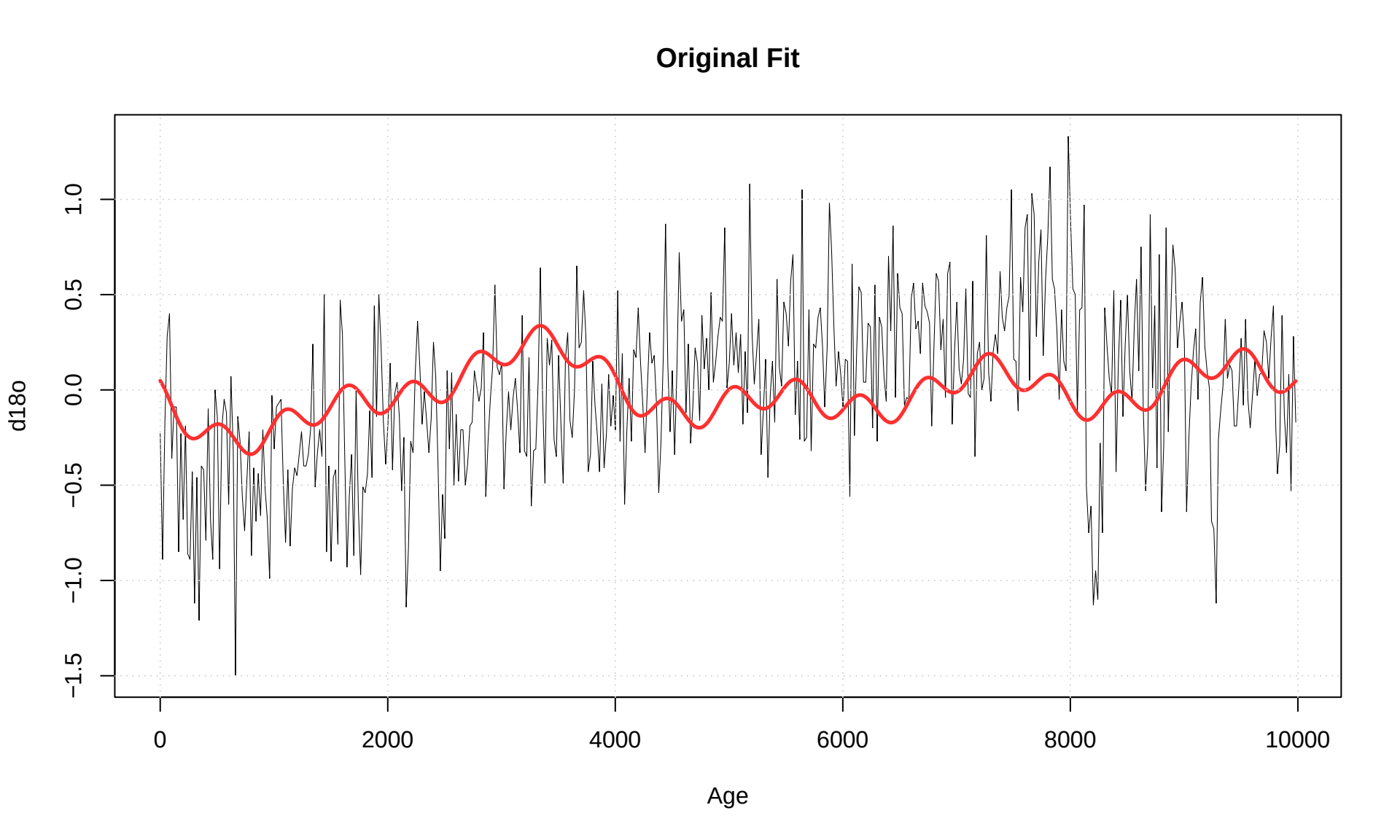
Harmonics before

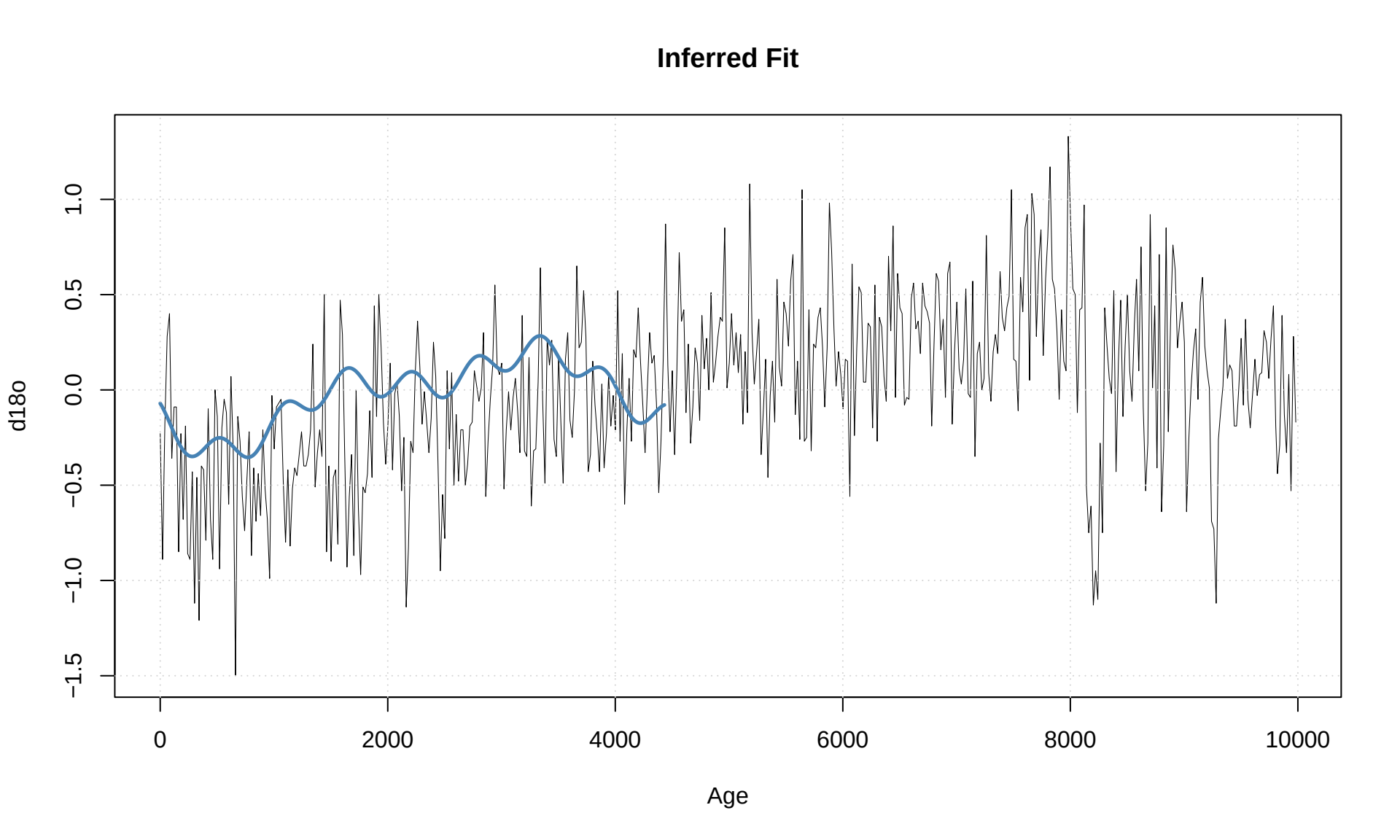
	Period	dPeriod	Amplitude	dAmplitude	Phase	dPhase	FixedPeriod
1	5012.81	240.81	0.12	0.02	1.64	0.21	0
2	3822.3	121.59	0.11	0.02	1.71	0.2	1
3	1957.14	28.01	0.09	0.02	1.59	0.23	0
4	563	4.12	0.08	0.01	0.39	0.41	0

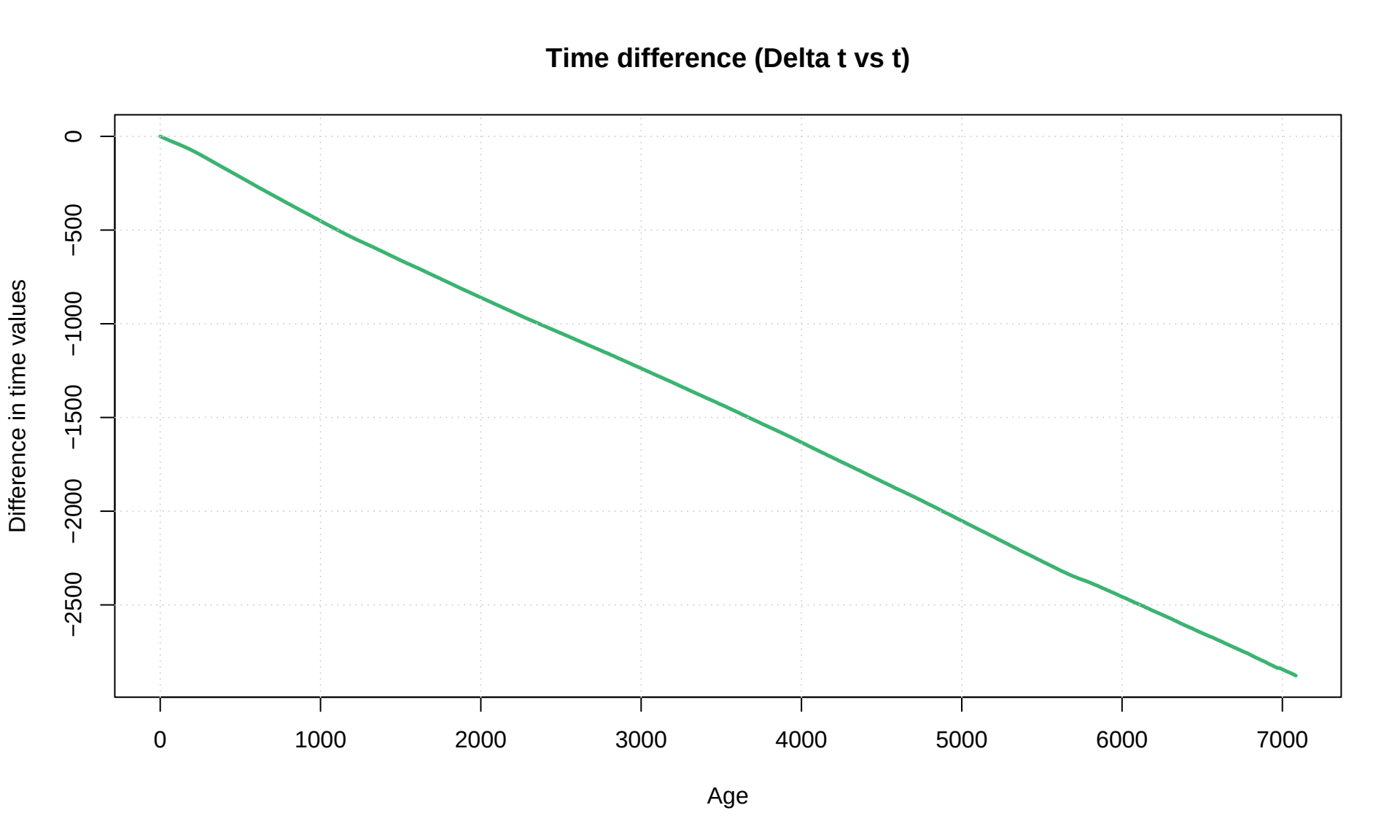
Harmonics inferred

	Period	Amplitude	Phase
1	5157.58	0.13	1.82
2	3822.3	0.13	2.44
3	1989.34	0.1	1.68
4	563.55	0.08	0.45


Bayesian Harmonic Fit
Original data
Bayesian fit before
Bayesian fit after
d18o
1.0
0.5
0.0
−0.5
−1.0
−1.5
0
2000
4000
6000
8000
10000
Age


Original Fit
d18o
1.0
0.5
0.0
−0.5
−1.0
−1.5
0
2000
4000
6000
8000
10000
Age


Inferred Fit
d18o
1.0
0.5
0.0
−0.5
−1.0
−1.5
0
2000
4000
6000
8000
10000
Age


Time difference (Delta t vs t)
Difference in time values
0
−500
−1000
−1500
−2000
−2500
0
1000
2000
3000
4000
5000
6000
7000
Age