# Aggregated sampling output

November 20, 2020

## Dataset: experimental_data_eGFP, model type: ODE

### Trajectories without pathologies

e.g. no divergent transitions, no max_treedepth exceeded, no Rhat > 1.1, no n_eff < 100

```
number of trajectories without pathologies (out of 100):
```

```
[1] 33
```

```
indices of trajectories without pathologies:
```

```
 [1]  3  8 10 11 18 20 22 23 26 28 30 31 33 35 38 40 41 46 51 52 53 54 55 60 62
[26] 63 71 74 77 88 94 97 98
```

#### no pathologies for a subset of the parameters

```
parameters considered:
```

```
[1] "t0"                    "sigma"                 "scale"
[4] "offset"                "prod_theta2_m0_scale"
```

```
number of trajectories without pathologies (out of 100):
```

```
[1] 76
```

```
indices of trajectories without pathologies:
```

```
 [1]   3   4   5   6   8   9  10  11  12  14  17  18  20  22  23  26  27  28  29
[20]  30  31  33  34  35  37  38  40  41  43  45  46  48  49  50  51  52  53  54
[39]  55  57  60  62  63  64  65  68  71  72  73  74  75  76  77  78  79  80  81
[58]  82  83  84  85  86  87  88  89  90  91  92  93  94  95  96  97  98  99 100
```

### Divergent transitions

| num..of.div..transitions | Freq |
|---|---|
| 0 | 99 |
| 1 | 1 |

```
total number of trajectories with div. transitions: 1
indices of trajectories with div. transitions:
58
```

### Maximum tree depth exceeded

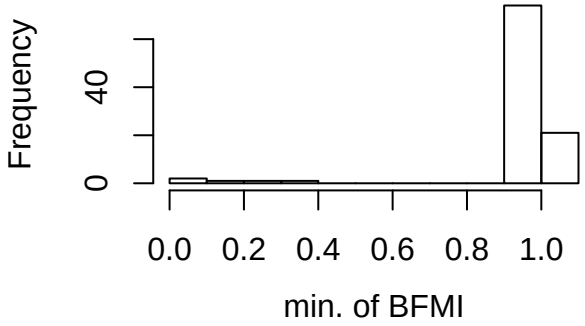
| num..of.max.t.d..exceeded | Freq |
|---|---|
| 0 | 97 |

| num..of.max.t.d..exceeded | Freq |
|---|---|
| 2500 | 3 |

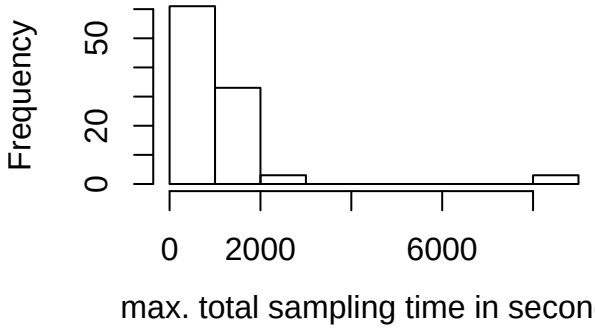
```
total number of trajectories were max. tree depth was exceeded: 3
indices of trajectories were max. tree depth was exceeded:
1 24 56
```

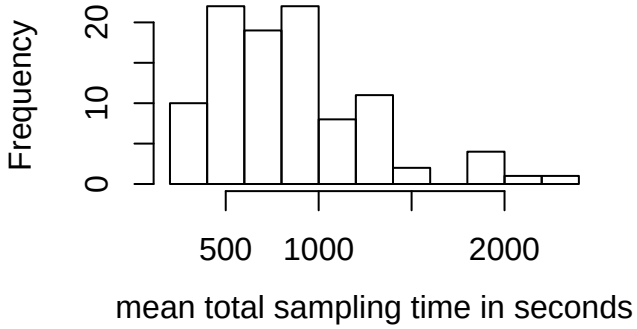
### Bayesian fraction of missing information (BFMI)

| num..of.low.BFMI | Freq |
|---|---|
| 0 | 97 |
| 1 | 3 |




### Total sampling time




### R-hat

**total number of trajectories with very high Rhat (> 1.1) (out of 100)**

```
[1] 65
```

**number of trajectories with high Rhat per parameter (out of 100)**

| | Rhat > 1.02 | Rhat > 1.1 |
|---|---|---|
| theta[1] | 58 | 54 |
| theta[2] | 3 | 1 |
| theta[3] | 58 | 53 |
| m0 | 1 | 0 |
| sigma | 19 | 14 |
| scale | 3 | 2 |
| offset | 23 | 20 |

| | Rhat > 1.02 | Rhat > 1.1 |
|---|---|---|
| t0 | 23 | 23 |
| prod_theta2_m0 | 0 | 0 |
| prod_theta2_scale | 1 | 1 |
| prod_m0_scale | 2 | 1 |
| prod_theta2_m0_scale | 23 | 22 |
| x2_sim[180] | 0 | 0 |

**number of parameters with high Rhat per trajectory (out of 13)**

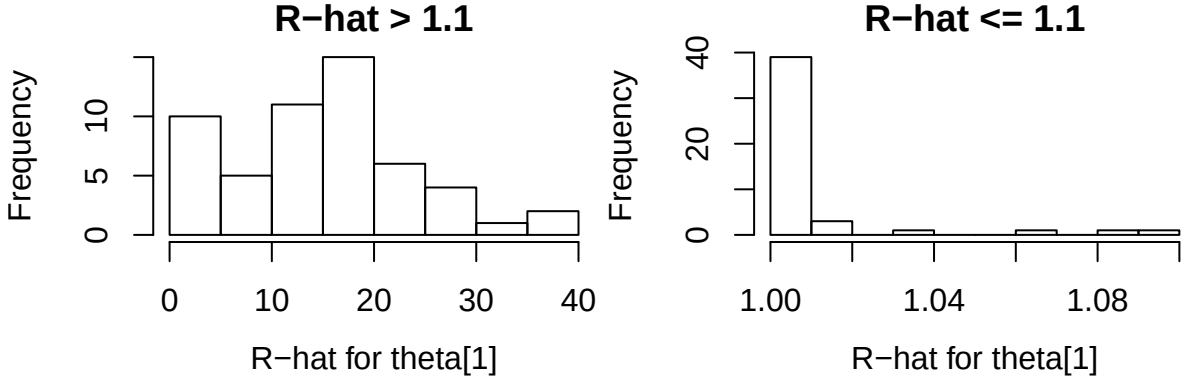
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 | 12 | 13 | 14 | 15 | 16 | 17 | 19 | 21 | 24 | 25 | 27 | 29 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rhat > 1.02 | 9 | 6 | 2 | 2 | 2 | 2 | 6 | 2 | 2 | 6 | 2 | 6 | 3 | 2 | 5 | 4 | 10 | 4 | 2 | 2 |
| Rhat > 1.1 | 8 | 6 | 0 | 2 | 2 | 2 | 6 | 2 | 2 | 4 | 2 | 6 | 3 | 2 | 5 | 2 | 8 | 4 | 2 | 2 |

| | 32 | 34 | 36 | 37 | 39 | 42 | 43 | 44 | 45 | 47 | 48 | 49 | 50 | 56 | 57 | 59 | 61 | 64 | 65 | 66 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rhat > 1.02 | 4 | 2 | 5 | 2 | 4 | 6 | 2 | 6 | 2 | 4 | 2 | 2 | 2 | 9 | 2 | 4 | 3 | 2 | 2 | 4 |
| Rhat > 1.1 | 3 | 2 | 4 | 2 | 3 | 4 | 2 | 6 | 2 | 4 | 2 | 0 | 2 | 7 | 2 | 3 | 1 | 2 | 2 | 4 |

| | 67 | 68 | 69 | 70 | 72 | 73 | 75 | 76 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 89 | 90 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rhat > 1.02 | 6 | 2 | 6 | 6 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Rhat > 1.1 | 4 | 2 | 6 | 6 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

**theta[1]**

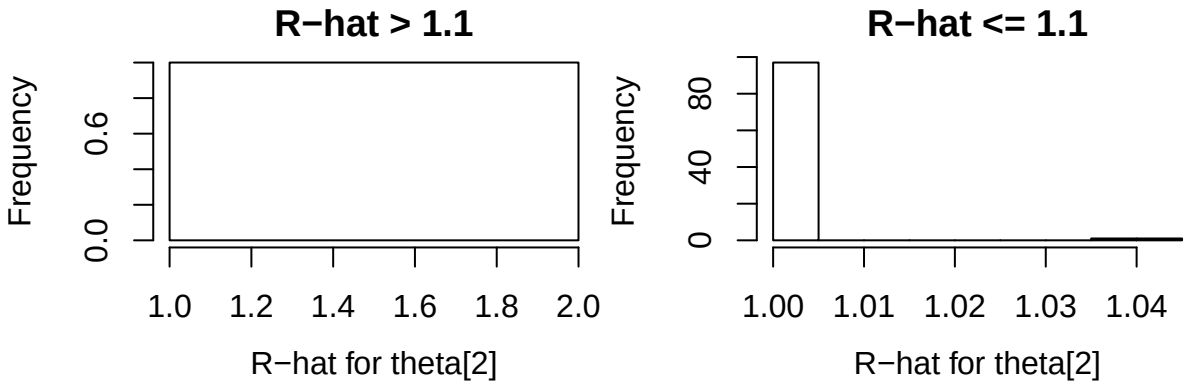
```
number of trajectories with Rhat > 1.02:    58

indizes of trajectories with Rhat > 1.02:
1 2 3 4 5 6 7 9 12 13 14 15 17 19 24 27 29 34 36 37 42 43 44 45 48 49 50 56 57 64 65 67 68 69 70 72 73 7

number of trajectories with Rhat > 1.1: 54

indices of trajectories with Rhat > 1.1:
1 2 4 5 6 7 9 12 14 15 17 19 24 27 29 34 36 37 43 44 45 48 50 56 57 64 65 67 68 69 70 72 73 75 76 78 79
```




**theta[2]**

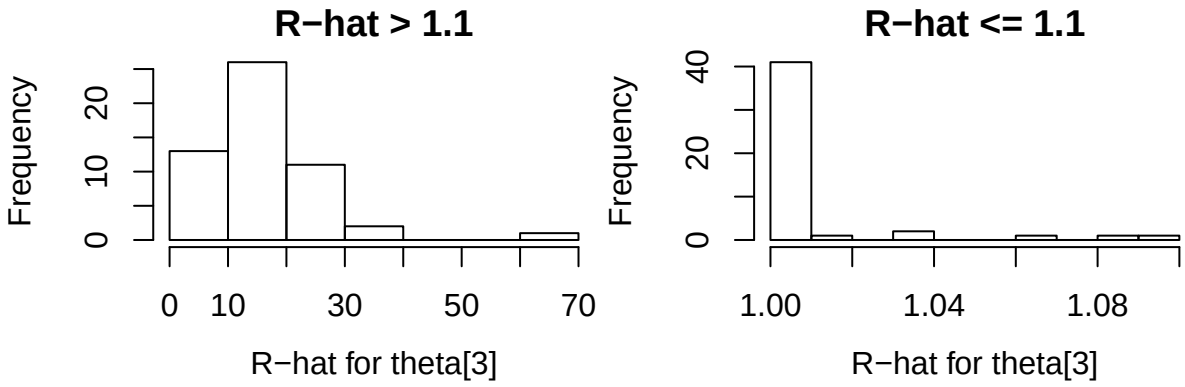
```
number of trajectories with Rhat > 1.02:    3
```

```
indizes of trajectories with Rhat > 1.02:
1 24 56

number of trajectories with Rhat > 1.1: 1

indices of trajectories with Rhat > 1.1:
24
```



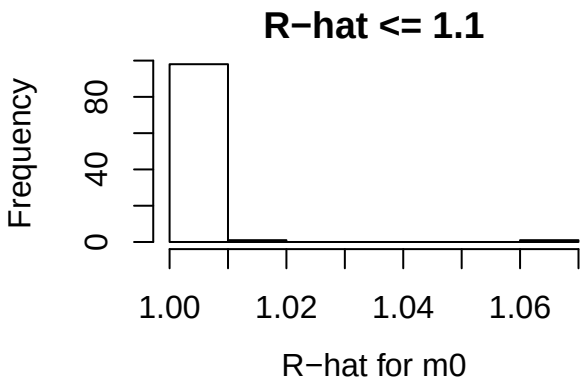

**theta[3]**

```
number of trajectories with Rhat > 1.02:    58

indizes of trajectories with Rhat > 1.02:
1 2 3 4 5 6 7 9 12 13 14 15 17 19 24 27 29 34 36 37 42 43 44 45 48 49 50 56 57 64 65 67 68 69 70 72 73 7

number of trajectories with Rhat > 1.1: 53

indices of trajectories with Rhat > 1.1:
1 2 4 5 6 7 9 12 14 15 17 19 24 27 29 34 36 37 43 44 45 48 50 56 57 64 65 68 69 70 72 73 75 76 78 79 80
```



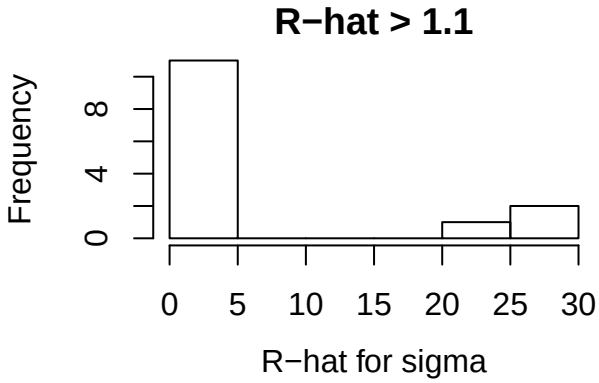

**m0**

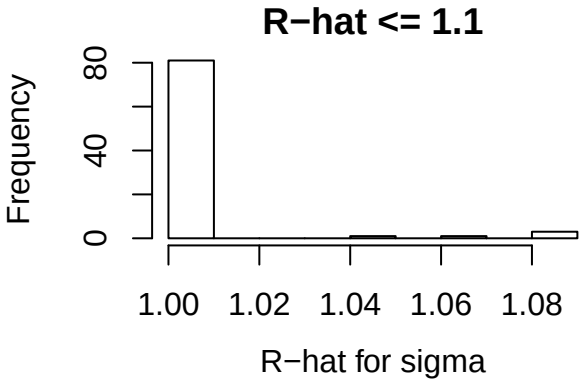
```
number of trajectories with Rhat > 1.02:    1

indizes of trajectories with Rhat > 1.02:
24
```




**sigma**

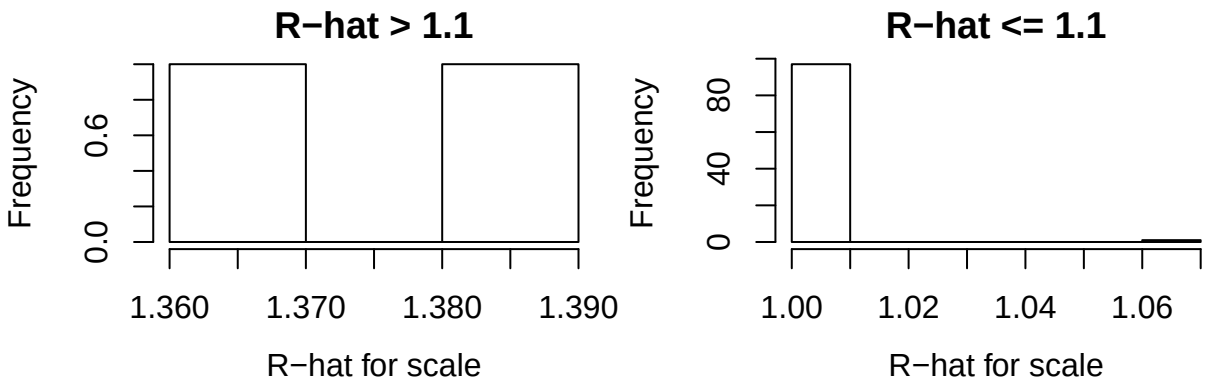
```
number of trajectories with Rhat > 1.02:    19

indizes of trajectories with Rhat > 1.02:
1 2 7 13 15 21 24 25 32 39 42 44 47 56 59 66 67 69 70

number of trajectories with Rhat > 1.1: 14

indices of trajectories with Rhat > 1.1:
1 2 7 13 15 24 25 42 44 47 56 66 69 70
```



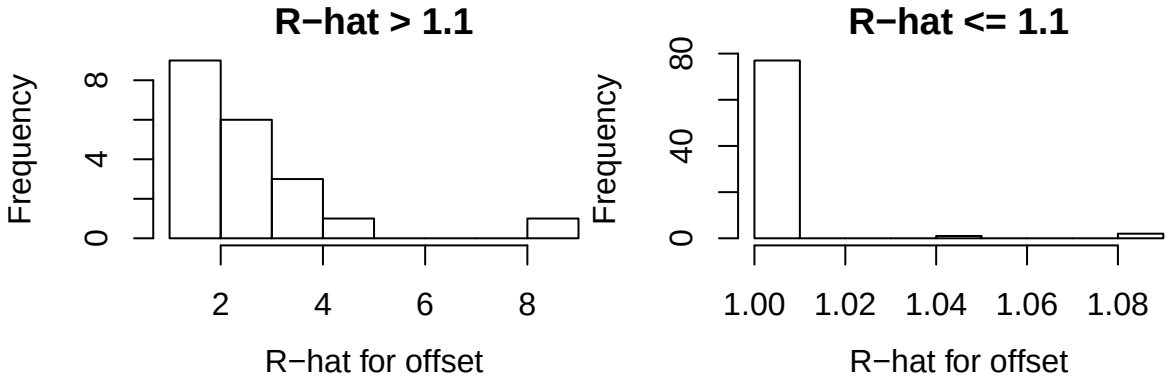

**scale**

```
number of trajectories with Rhat > 1.02:    3

indizes of trajectories with Rhat > 1.02:
1 24 56

number of trajectories with Rhat > 1.1: 2

indices of trajectories with Rhat > 1.1:
1 56
```



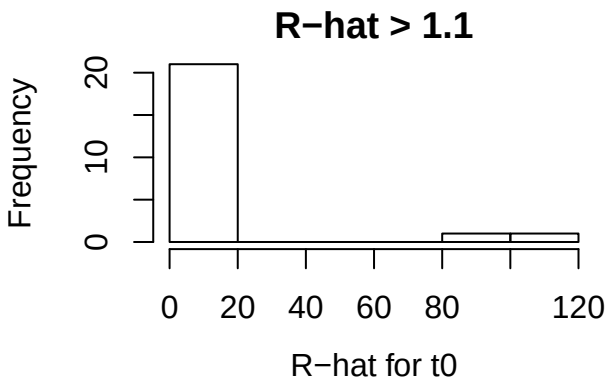

**offset**

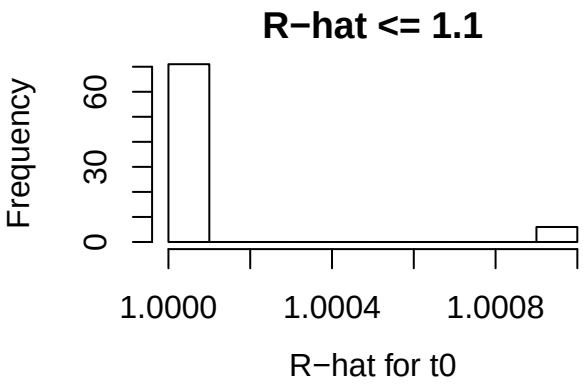
```
number of trajectories with Rhat > 1.02:    23

indizes of trajectories with Rhat > 1.02:
1 2 7 13 15 16 19 21 24 25 32 36 39 42 44 47 56 59 61 66 67 69 70

number of trajectories with Rhat > 1.1: 20

indices of trajectories with Rhat > 1.1:
1 2 7 13 15 16 19 24 25 32 39 42 44 47 56 59 66 67 69 70
```




**t0**

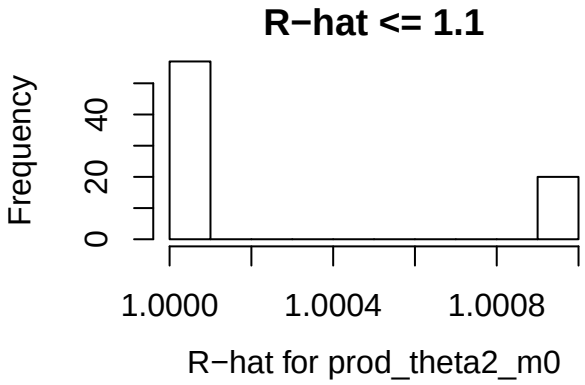
```
number of trajectories with Rhat > 1.02:    23

indizes of trajectories with Rhat > 1.02:
1 2 7 13 15 16 19 21 24 25 32 36 39 42 44 47 56 59 61 66 67 69 70

number of trajectories with Rhat > 1.1: 23

indices of trajectories with Rhat > 1.1:
1 2 7 13 15 16 19 21 24 25 32 36 39 42 44 47 56 59 61 66 67 69 70
```



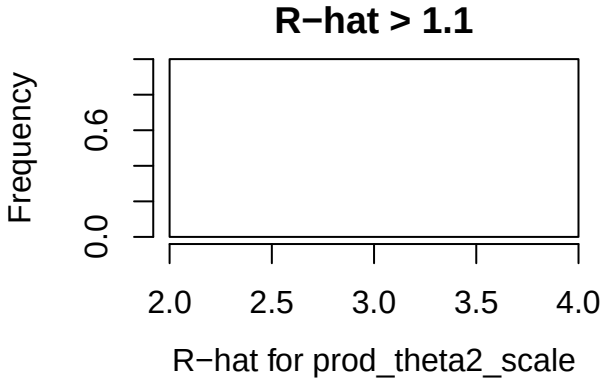

**prod_theta2_m0**

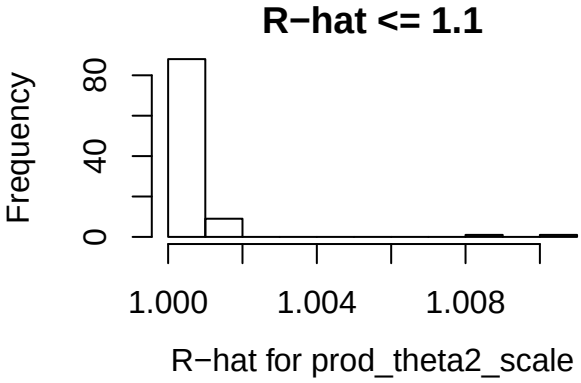
```
no Rhat > 1.02
```




**prod_theta2_scale**

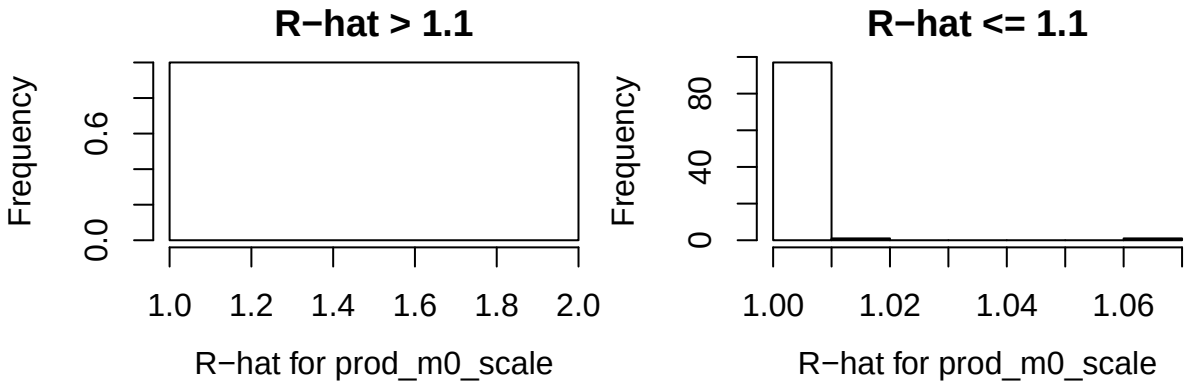
```
number of trajectories with Rhat > 1.02:    1

indizes of trajectories with Rhat > 1.02:
24

number of trajectories with Rhat > 1.1: 1

indices of trajectories with Rhat > 1.1:
24
```



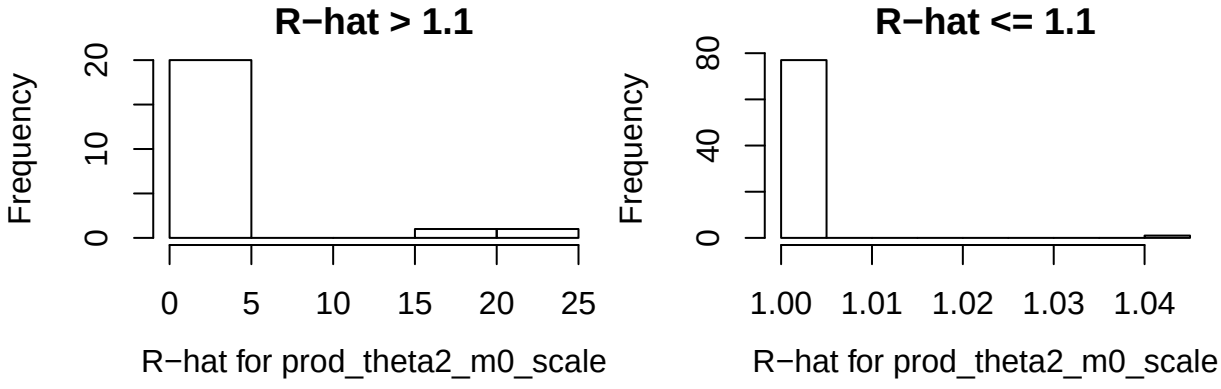
**prod_m0_scale**

```
number of trajectories with Rhat > 1.02:    2

indizes of trajectories with Rhat > 1.02:
1 56

number of trajectories with Rhat > 1.1: 1

indices of trajectories with Rhat > 1.1:
1
```



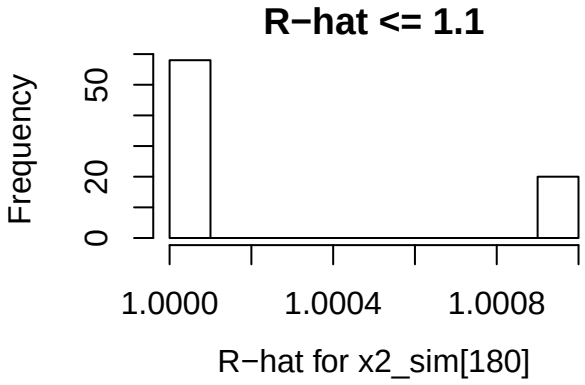

**prod_theta2_m0_scale**

```
number of trajectories with Rhat > 1.02:    23

indizes of trajectories with Rhat > 1.02:
1 2 7 13 15 16 19 21 24 25 32 36 39 42 44 47 56 59 61 66 67 69 70

number of trajectories with Rhat > 1.1: 22

indices of trajectories with Rhat > 1.1:
1 2 7 13 15 16 19 21 24 25 32 36 39 42 44 47 56 59 66 67 69 70
```




**x2_sim[180]**

```
no Rhat > 1.02
```




## Effective sample size (ESS)

**total number of trajectories with low ESS (< 100) (out of 100)**

```
[1] 66
```

**number of trajectories with low ESS (< 100) per parameter (out of 100)**

| | n_eff < 100 |
|---|---|
| theta[1] | 54 |
| theta[2] | 3 |
| theta[3] | 55 |
| m0 | 1 |
| sigma | 19 |
| scale | 3 |
| offset | 22 |
| t0 | 23 |
| prod_theta2_m0 | 0 |
| prod_theta2_scale | 1 |
| prod_m0_scale | 2 |
| prod_theta2_m0_scale | 22 |
| x2_sim[180] | 0 |

**number of parameters with low ESS (< 300) per trajectory (out of 13)**

| | 1 | 2 | 4 | 5 | 6 | 7 | 9 | 12 | 13 | 14 | 15 | 16 | 17 | 19 | 21 | 24 | 25 | 27 | 29 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n_eff < 100 | 9 | 6 | 2 | 2 | 2 | 6 | 2 | 2 | 4 | 2 | 6 | 3 | 2 | 5 | 4 | 10 | 4 | 2 | 2 | 4 |

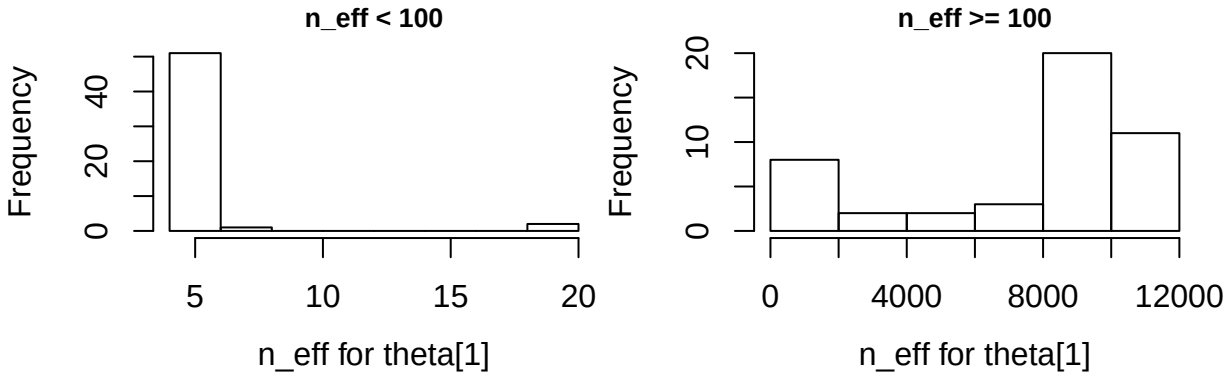
| | 34 | 36 | 37 | 39 | 42 | 43 | 44 | 45 | 47 | 48 | 49 | 50 | 56 | 57 | 59 | 61 | 64 | 65 | 66 | 67 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n_eff < 100 | 2 | 5 | 2 | 4 | 4 | 2 | 6 | 2 | 4 | 2 | 1 | 2 | 9 | 2 | 4 | 1 | 2 | 2 | 4 | 6 |

| | 68 | 69 | 70 | 72 | 73 | 75 | 76 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 89 | 90 | 91 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n_eff < 100 | 2 | 6 | 6 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

**theta[1]**

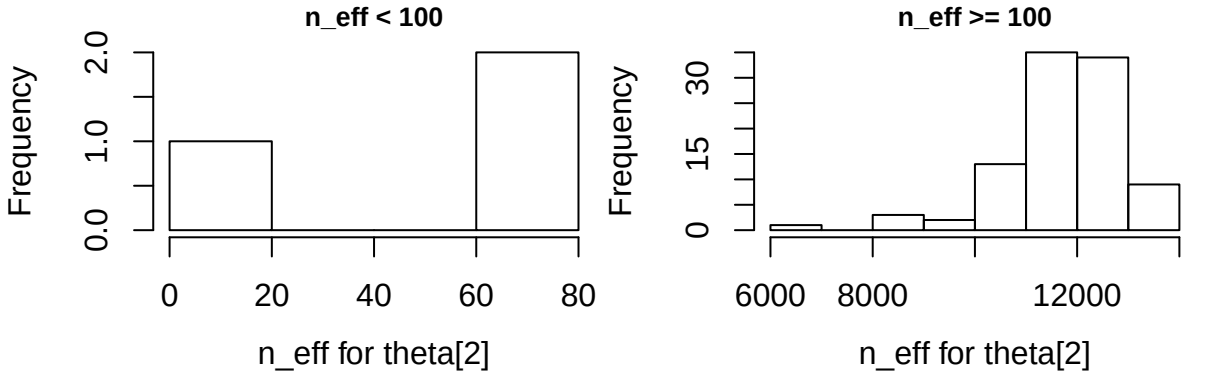
```
number of trajectories with n_eff < 100:    54
```

```
indices of trajectories with n_eff < 100:
1 2 4 5 6 7 9 12 14 15 17 19 24 27 29 34 36 37 43 44 45 48 50 56 57 64 65 67 68 69 70 72 73 75 76 78 79
```



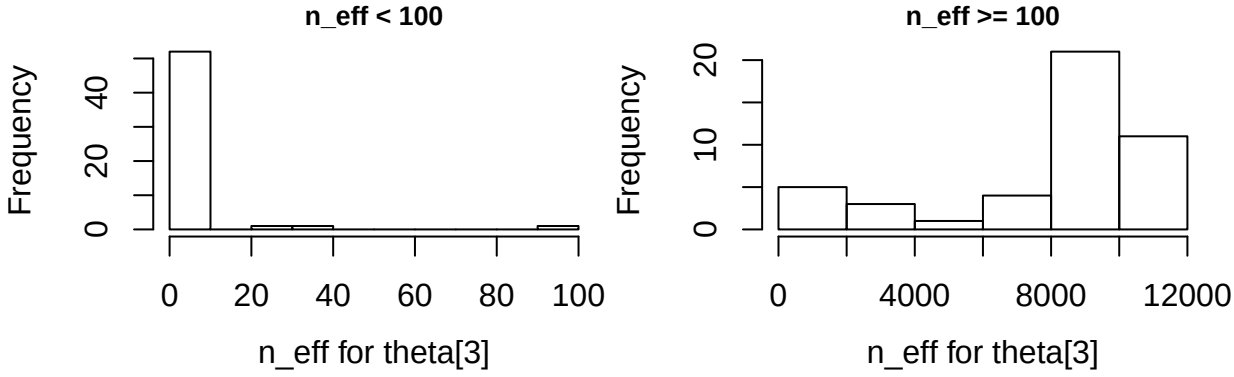

**theta[2]**

```
number of trajectories with n_eff < 100:    3

indices of trajectories with n_eff < 100:
1 24 56
```



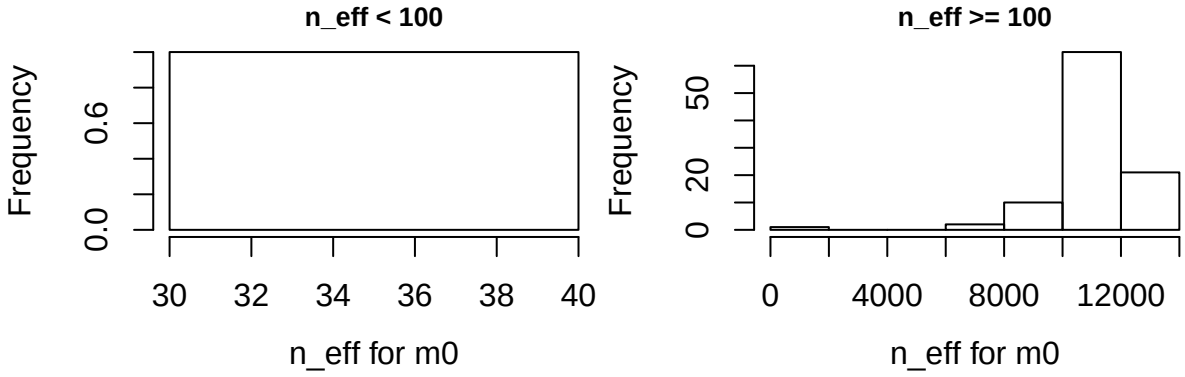

**theta[3]**

```
number of trajectories with n_eff < 100:    55

indices of trajectories with n_eff < 100:
1 2 4 5 6 7 9 12 14 15 17 19 24 27 29 34 36 37 43 44 45 48 49 50 56 57 64 65 67 68 69 70 72 73 75 76 78
```



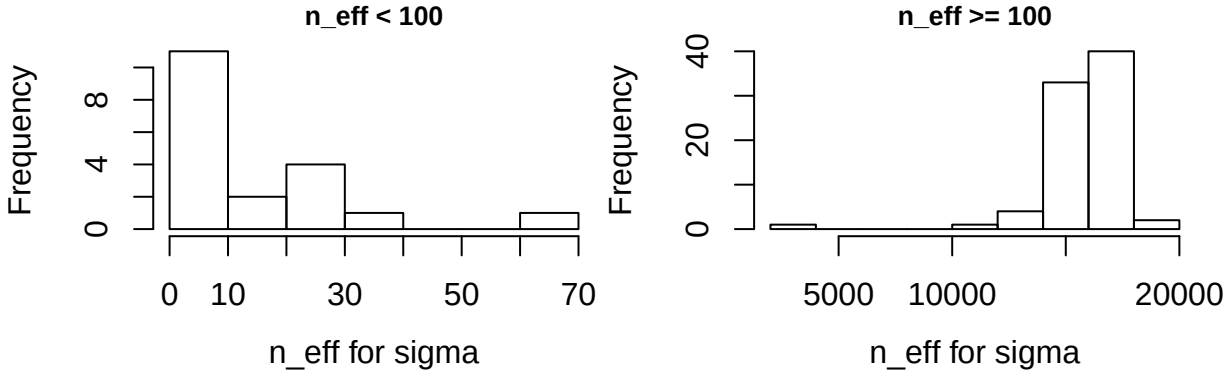
**m0**

```
number of trajectories with n_eff < 100:    1

indices of trajectories with n_eff < 100:
24
```



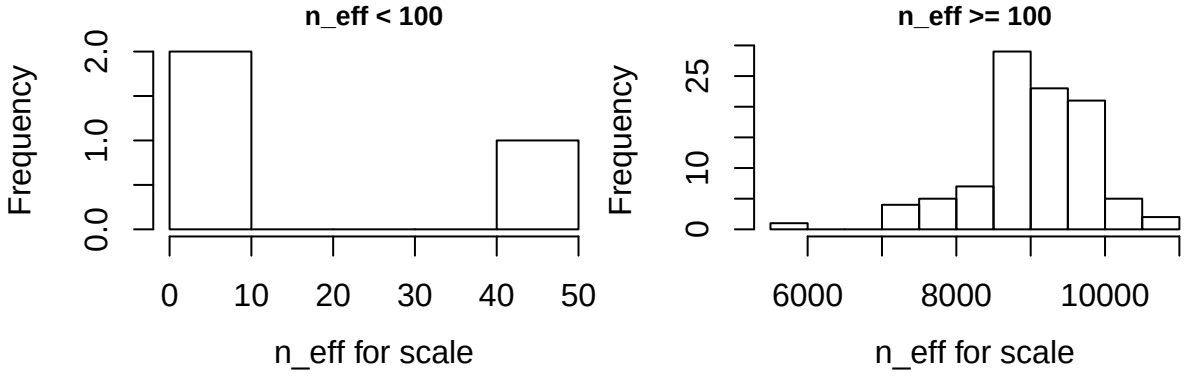

**sigma**

```
number of trajectories with n_eff < 100:    19

indices of trajectories with n_eff < 100:
1 2 7 13 15 21 24 25 32 39 42 44 47 56 59 66 67 69 70
```



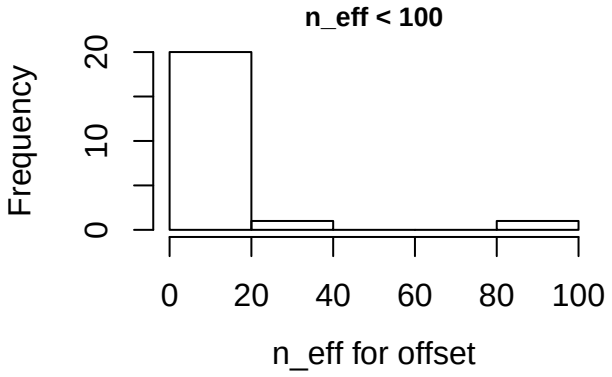

**scale**

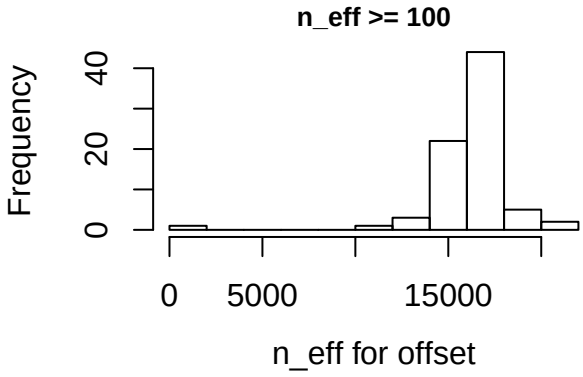
```
number of trajectories with n_eff < 100:    3

indices of trajectories with n_eff < 100:
1 24 56
```



**offset**

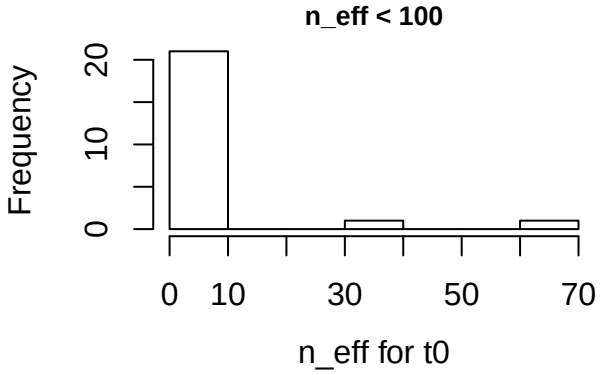
```
number of trajectories with n_eff < 100:    22

indices of trajectories with n_eff < 100:
1 2 7 13 15 16 19 21 24 25 32 36 39 42 44 47 56 59 66 67 69 70
```

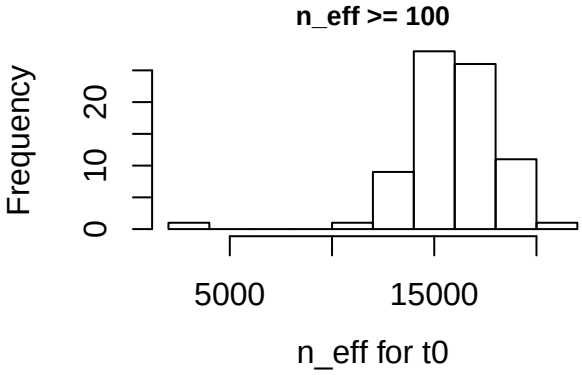



**t0**

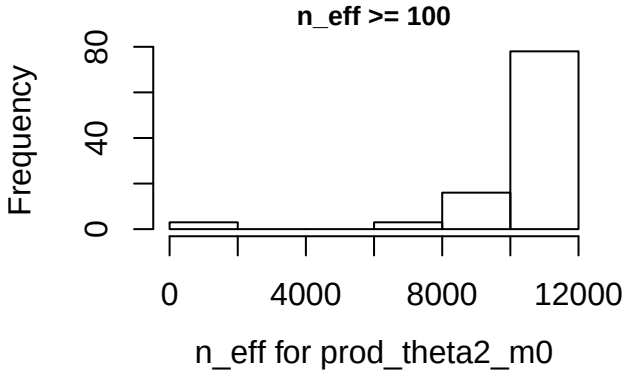
```
number of trajectories with n_eff < 100:    23

indices of trajectories with n_eff < 100:
1 2 7 13 15 16 19 21 24 25 32 36 39 42 44 47 56 59 61 66 67 69 70
```



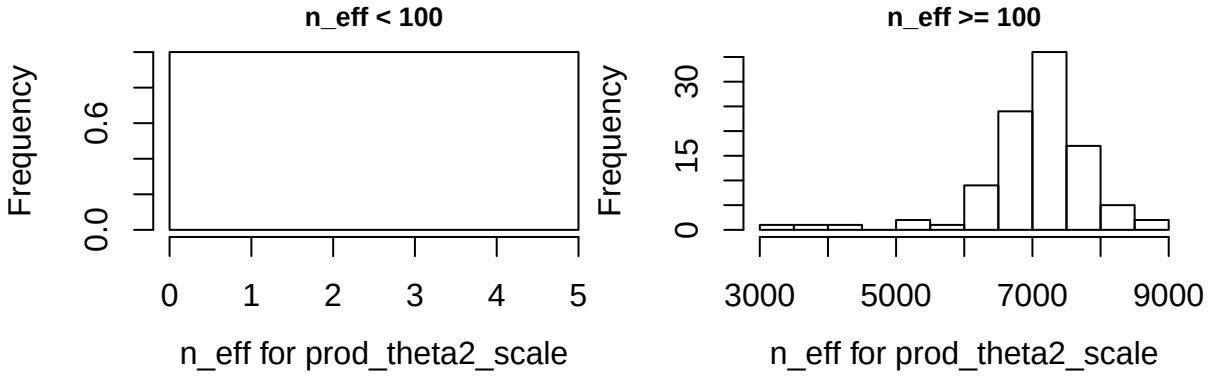

**prod_theta2_m0**

```
no n_eff < 100
```



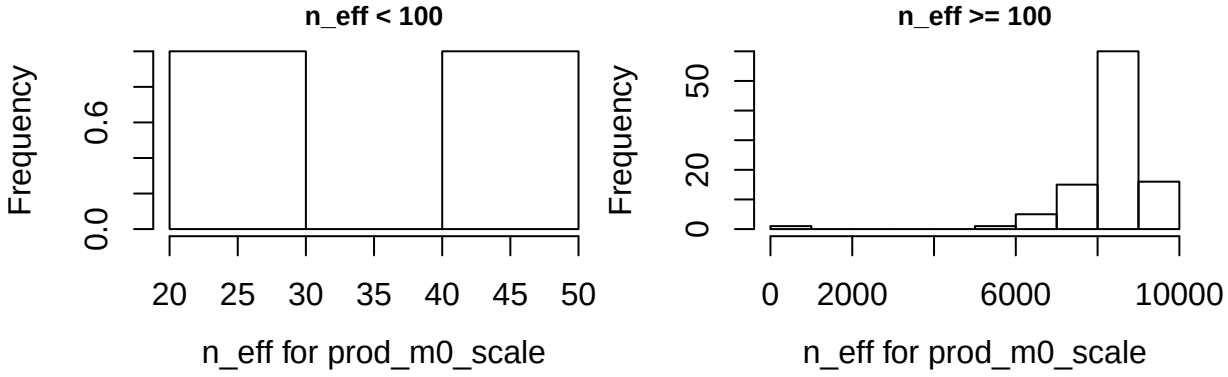
**prod_theta2_scale**

```
number of trajectories with n_eff < 100:    1

indices of trajectories with n_eff < 100:
24
```



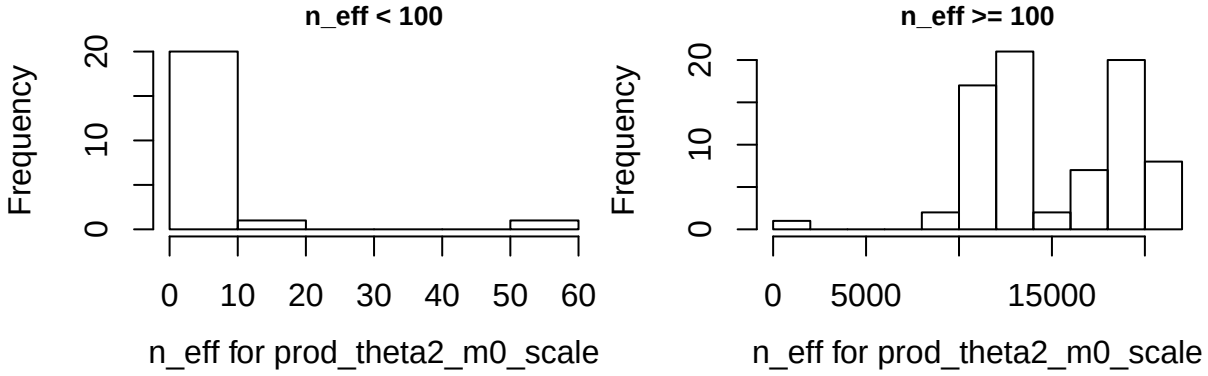

**prod_m0_scale**

```
number of trajectories with n_eff < 100:    2

indices of trajectories with n_eff < 100:
1 56
```



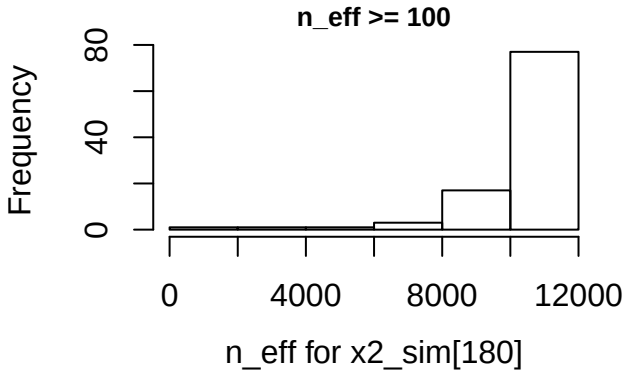

**prod_theta2_m0_scale**

```
number of trajectories with n_eff < 100:    22

indices of trajectories with n_eff < 100:
1 2 7 13 15 16 19 21 24 25 32 36 39 42 44 47 56 59 66 67 69 70
```



**x2_sim[180]**

```
no n_eff < 100
```




## Find problematic trajectories and parameters

**Are there any trajectories and parameters for which n_eff is below the threshold, but Rhat does not exceed the threshold?**

```
## [1] FALSE
```

**parameters per trajectories with very high Rhat**

```
1:   theta[1]  theta[3]  sigma  scale  offset  t0  prod_m0_scale  prod_theta2_m0_scale
2:   theta[1]  theta[3]  sigma  offset  t0  prod_theta2_m0_scale
4:   theta[1]  theta[3]
5:   theta[1]  theta[3]
6:   theta[1]  theta[3]
7:   theta[1]  theta[3]  sigma  offset  t0  prod_theta2_m0_scale
9:   theta[1]  theta[3]
12:   theta[1]  theta[3]
13:   sigma  offset  t0  prod_theta2_m0_scale
14:   theta[1]  theta[3]
15:   theta[1]  theta[3]  sigma  offset  t0  prod_theta2_m0_scale
16:   offset  t0  prod_theta2_m0_scale
17:   theta[1]  theta[3]
19:   theta[1]  theta[3]  offset  t0  prod_theta2_m0_scale
21:   t0  prod_theta2_m0_scale
24:   theta[1]  theta[2]  theta[3]  sigma  offset  t0  prod_theta2_scale  prod_theta2_m0_scale
25:   sigma  offset  t0  prod_theta2_m0_scale
27:   theta[1]  theta[3]
29:   theta[1]  theta[3]
32:   offset  t0  prod_theta2_m0_scale
34:   theta[1]  theta[3]
36:   theta[1]  theta[3]  t0  prod_theta2_m0_scale
37:   theta[1]  theta[3]
39:   offset  t0  prod_theta2_m0_scale
42:   sigma  offset  t0  prod_theta2_m0_scale
43:   theta[1]  theta[3]
44:   theta[1]  theta[3]  sigma  offset  t0  prod_theta2_m0_scale
45:   theta[1]  theta[3]
47:   sigma  offset  t0  prod_theta2_m0_scale
48:   theta[1]  theta[3]
50:   theta[1]  theta[3]
56:   theta[1]  theta[3]  sigma  scale  offset  t0  prod_theta2_m0_scale
57:   theta[1]  theta[3]
```

```
59:   offset  t0  prod_theta2_m0_scale
61:   t0
64:   theta[1]  theta[3]
65:   theta[1]  theta[3]
66:   sigma  offset  t0  prod_theta2_m0_scale
67:   theta[1]  offset  t0  prod_theta2_m0_scale
68:   theta[1]  theta[3]
69:   theta[1]  theta[3]  sigma  offset  t0  prod_theta2_m0_scale
70:   theta[1]  theta[3]  sigma  offset  t0  prod_theta2_m0_scale
72:   theta[1]  theta[3]
73:   theta[1]  theta[3]
75:   theta[1]  theta[3]
76:   theta[1]  theta[3]
78:   theta[1]  theta[3]
79:   theta[1]  theta[3]
80:   theta[1]  theta[3]
81:   theta[1]  theta[3]
82:   theta[1]  theta[3]
83:   theta[1]  theta[3]
84:   theta[1]  theta[3]
85:   theta[1]  theta[3]
86:   theta[1]  theta[3]
87:   theta[1]  theta[3]
89:   theta[1]  theta[3]
90:   theta[1]  theta[3]
91:   theta[1]  theta[3]
92:   theta[1]  theta[3]
93:   theta[1]  theta[3]
95:   theta[1]  theta[3]
96:   theta[1]  theta[3]
99:   theta[1]  theta[3]
100:   theta[1]  theta[3]
```

**unique combinations:**

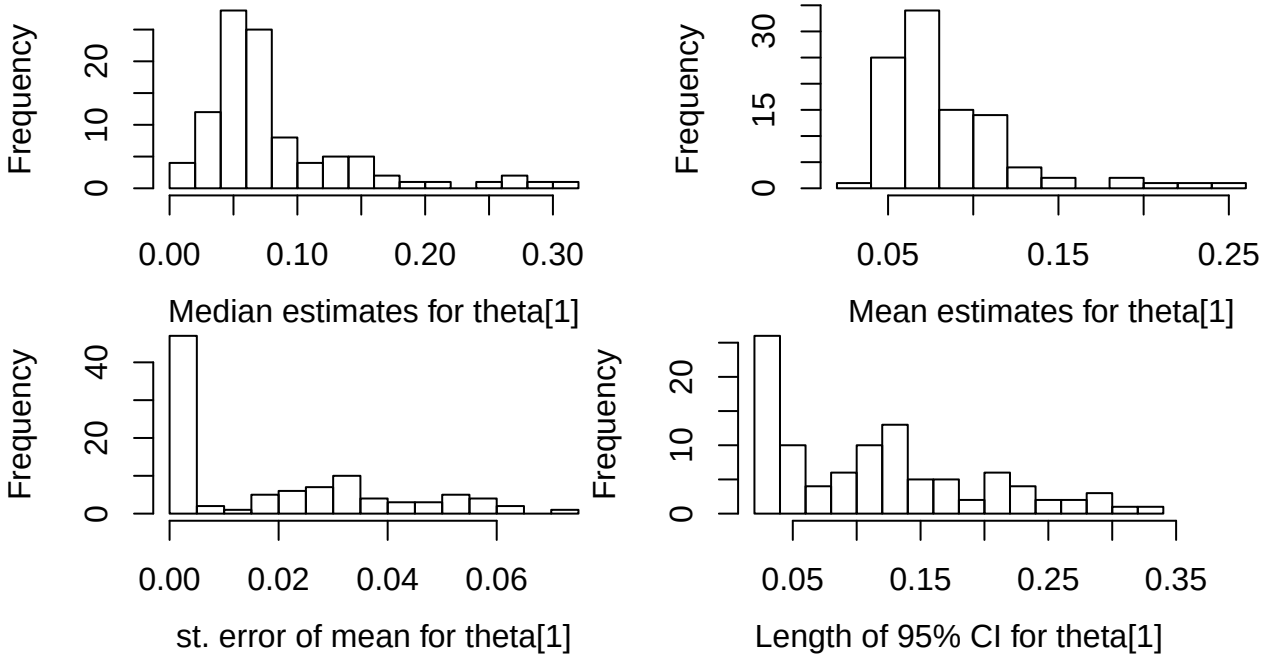
```
number of unique combinations:  12
```

```
combinations and number of their occruence:
```

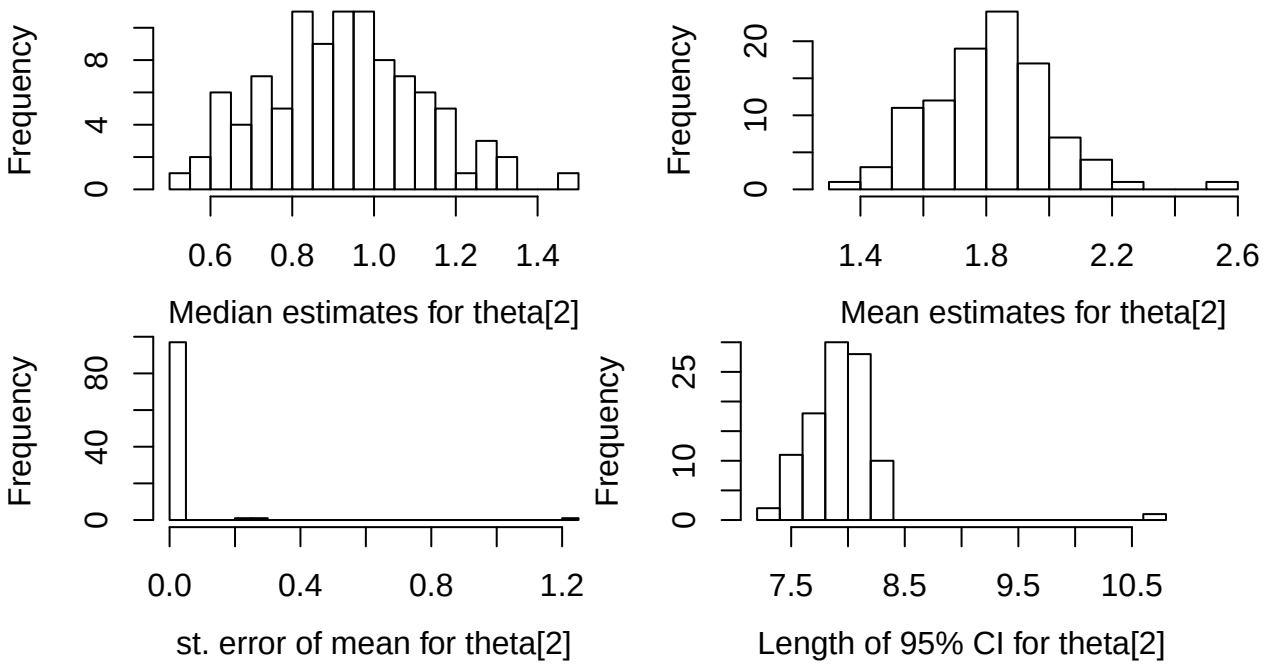
```
1  :  theta[1]  theta[3]  sigma  scale  offset  t0  prod_m0_scale  prod_theta2_m0_scale
6  :  theta[1]  theta[3]  sigma  offset  t0  prod_theta2_m0_scale
42  :  theta[1]  theta[3]
5  :  sigma  offset  t0  prod_theta2_m0_scale
4  :  offset  t0  prod_theta2_m0_scale
1  :  theta[1]  theta[3]  offset  t0  prod_theta2_m0_scale
1  :  t0  prod_theta2_m0_scale
1  :  theta[1]  theta[2]  theta[3]  sigma  offset  t0  prod_theta2_scale  prod_theta2_m0_scale
1  :  theta[1]  theta[3]  t0  prod_theta2_m0_scale
1  :  theta[1]  theta[3]  sigma  scale  offset  t0  prod_theta2_m0_scale
1  :  t0
1  :  theta[1]  offset  t0  prod_theta2_m0_scale
```

### Overview of estimates

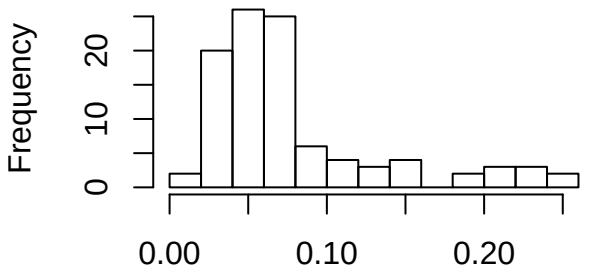
**theta[1]**

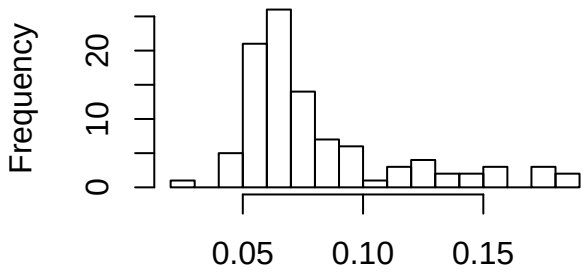


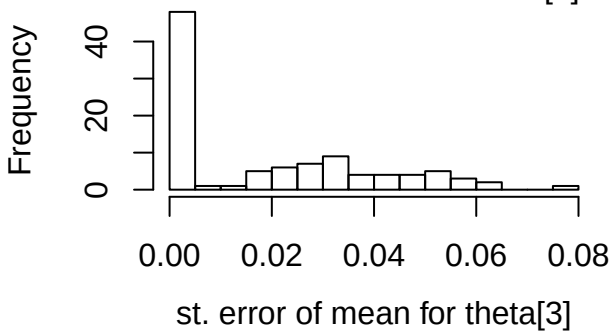

**theta[2]**

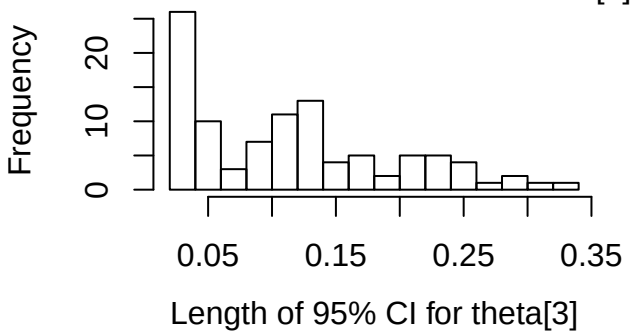


**theta[3]**

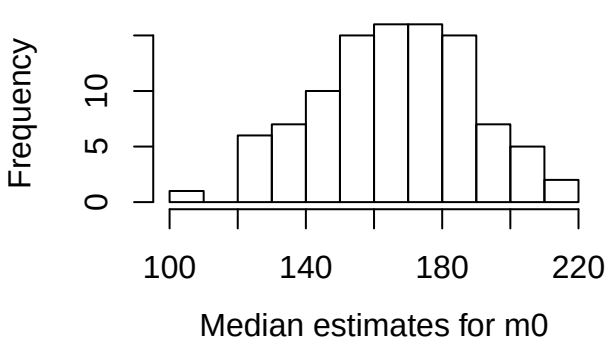

Frequency
0
10
20
0.00
0.10
0.20
Median estimates for theta[3]

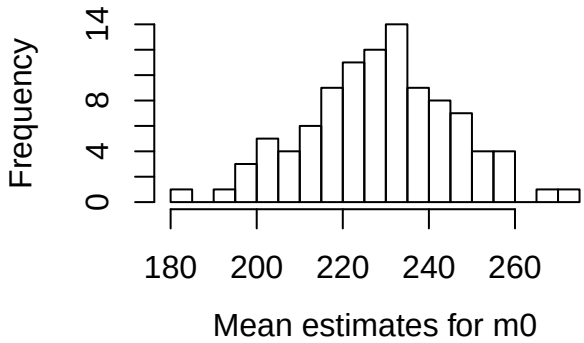

Frequency
0
10
20
0.05
0.10
0.15
Mean estimates for theta[3]

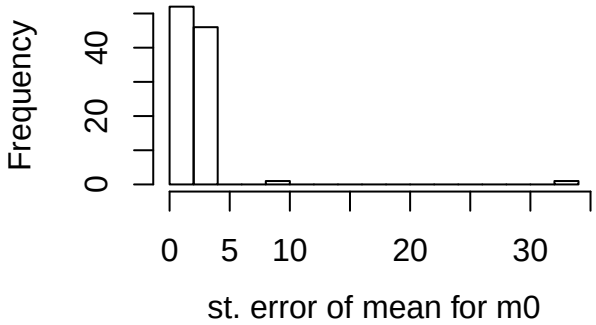

Frequency
0
20
40
0.00
0.02
0.04
0.06
0.08
st. error of mean for theta[3]

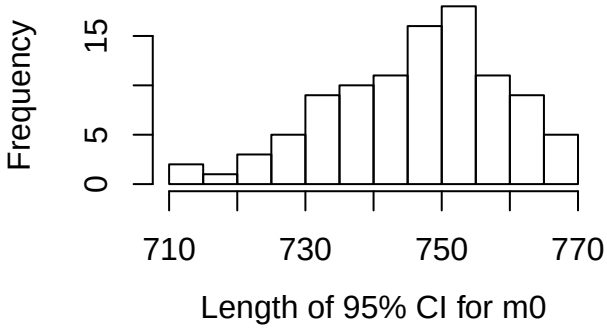

Frequency
0
10
20
0.05
0.15
0.25
0.35
Length of 95% CI for theta[3]

**m0**

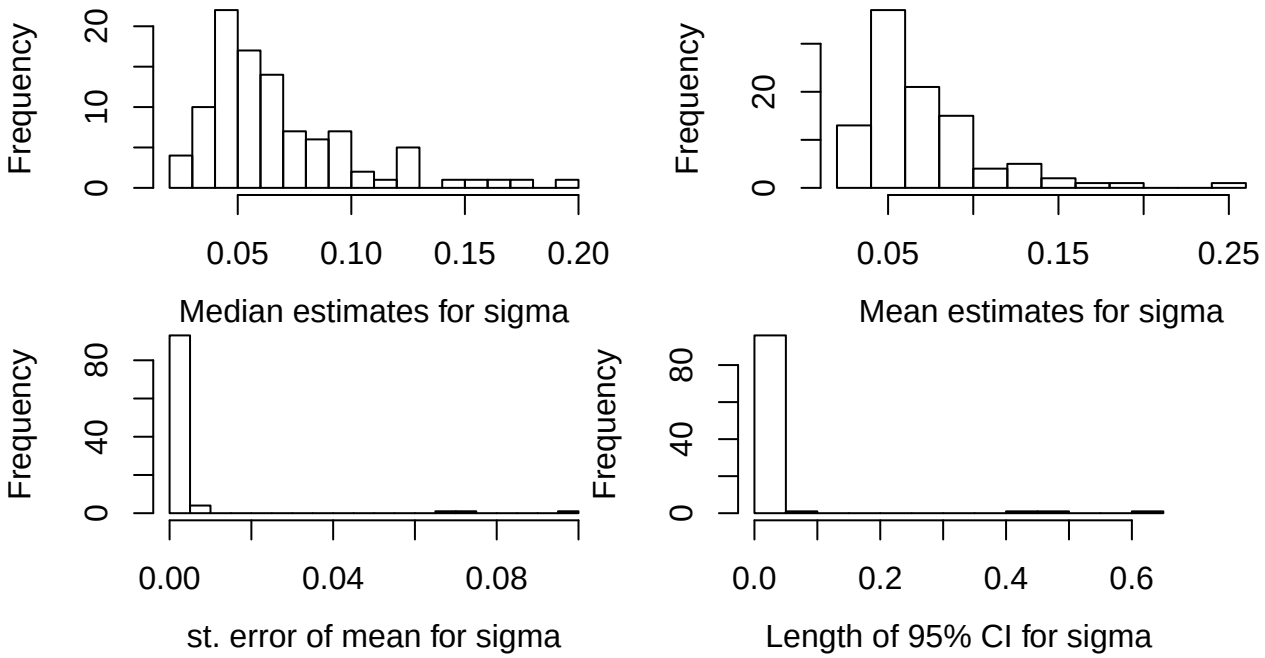

Frequency
0
5
10
100
140
180
220
Median estimates for m0


Frequency
0
4
8
14
180
200
220
240
260
Mean estimates for m0

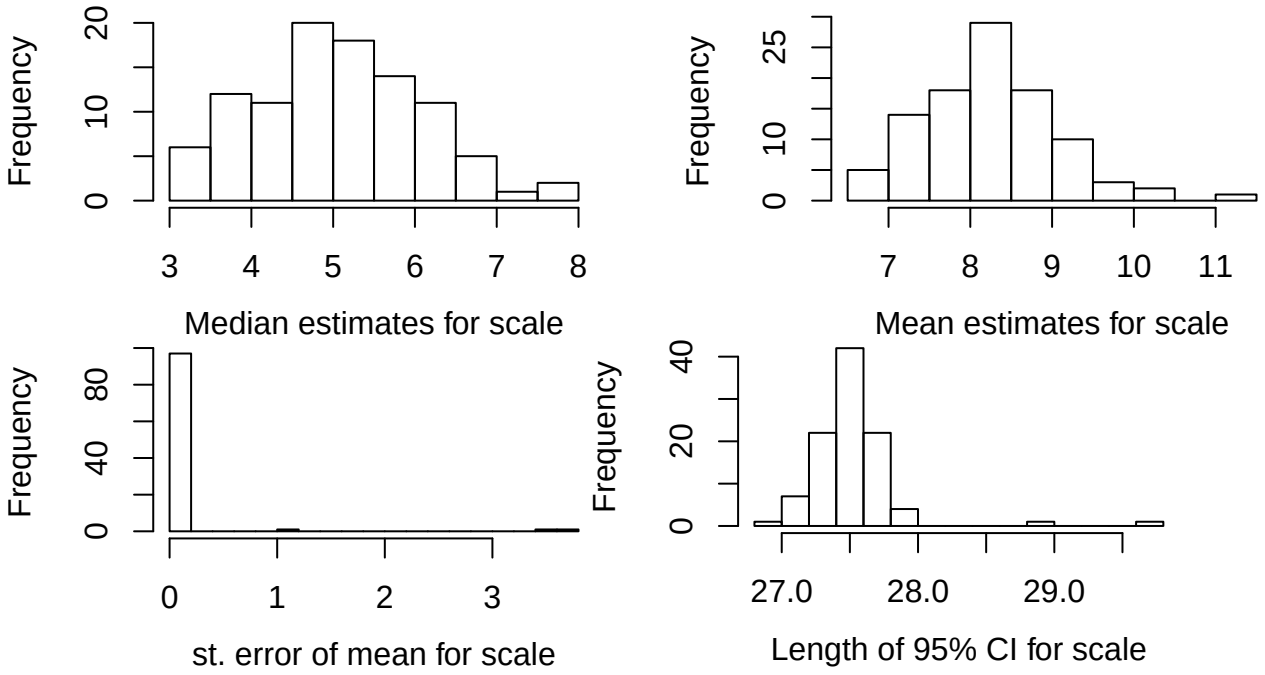

Frequency
0
20
40
0
5
10
20
30
st. error of mean for m0


Frequency
0
5
15
710
730
750
770
Length of 95% CI for m0

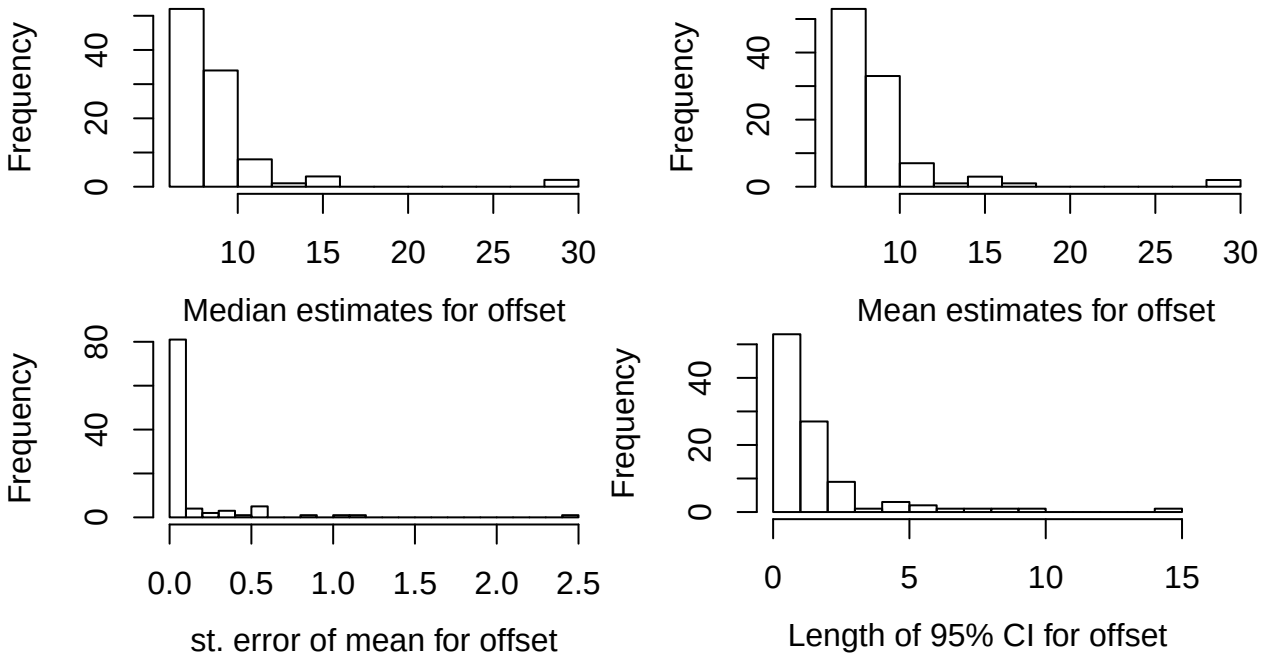
**sigma**


Frequency
0
10
20
0.05
0.10
0.15
0.20
Median estimates for sigma
Frequency
0
20
0.05
0.15
0.25
Mean estimates for sigma
Frequency
0
40
80
0.00
0.04
0.08
st. error of mean for sigma
Frequency
0
40
80
0.0
0.2
0.4
0.6
Length of 95% CI for sigma

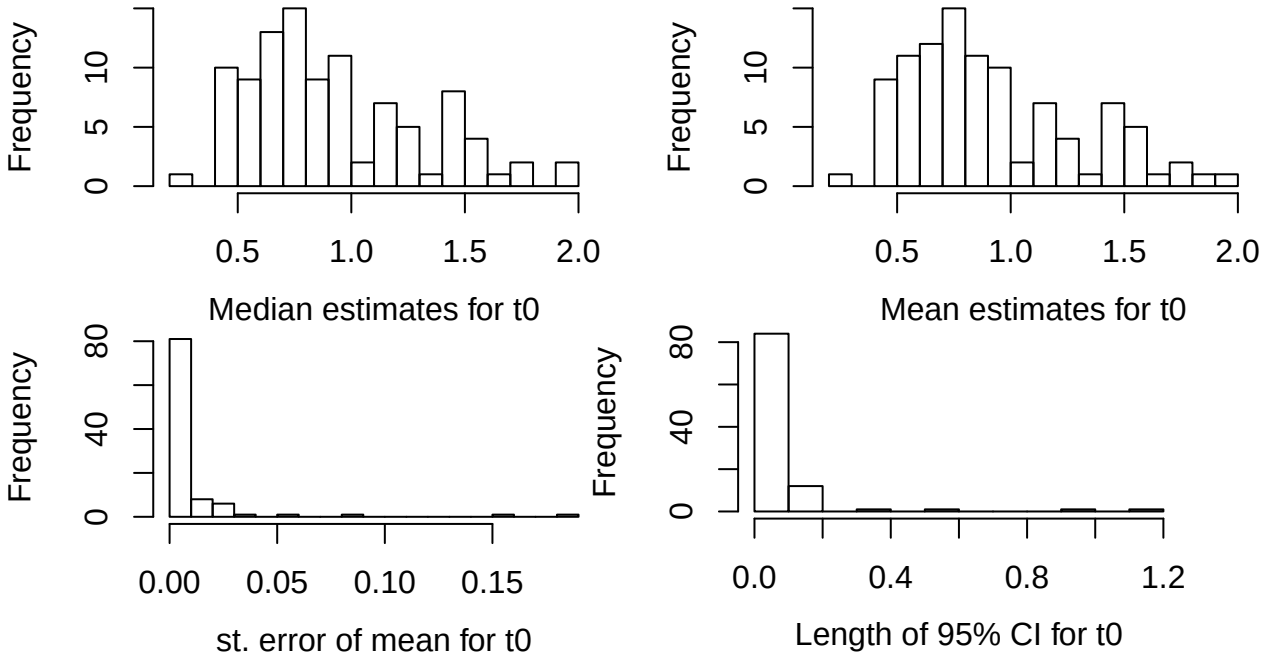
**scale**


Frequency
0
10
20
3
4
5
6
7
8
Median estimates for scale
Frequency
0
10
25
7
8
9
10
11
Mean estimates for scale
Frequency
0
40
80
0
1
2
3
st. error of mean for scale
Frequency
0
20
40
27.0
28.0
29.0
Length of 95% CI for scale

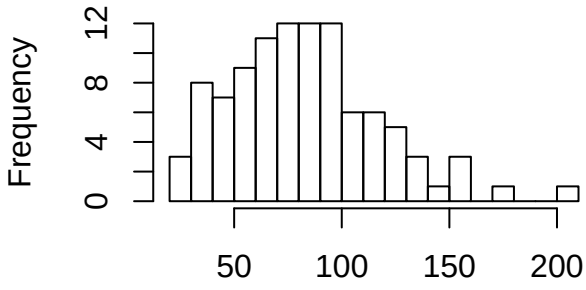
**offset**

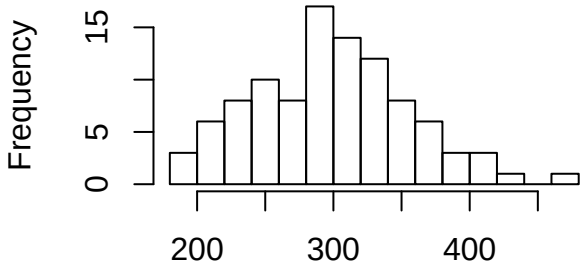

Frequency
0
20
40
10
15
20
25
30
Median estimates for offset
Mean estimates for offset
0
40
80
0.0
0.5
1.0
1.5
2.0
2.5
st. error of mean for offset
0
20
40
0
5
10
15
Length of 95% CI for offset

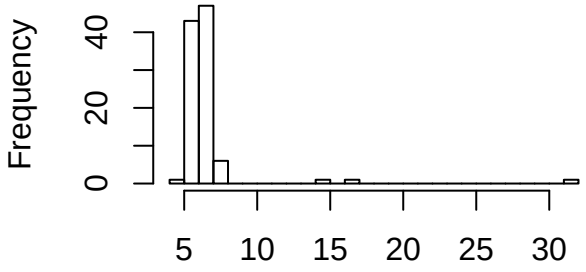
**t0**

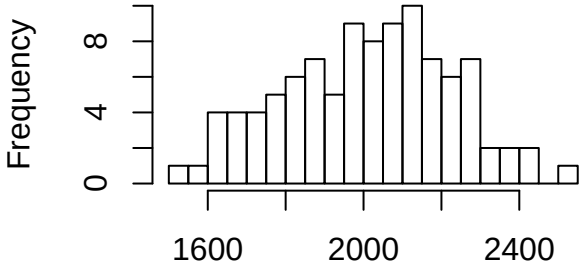

Frequency
0
5
10
0.5
1.0
1.5
2.0
Median estimates for t0
Mean estimates for t0
0
40
80
0.00
0.05
0.10
0.15
st. error of mean for t0
0.0
0.4
0.8
1.2
Length of 95% CI for t0

**prod_theta2_m0**

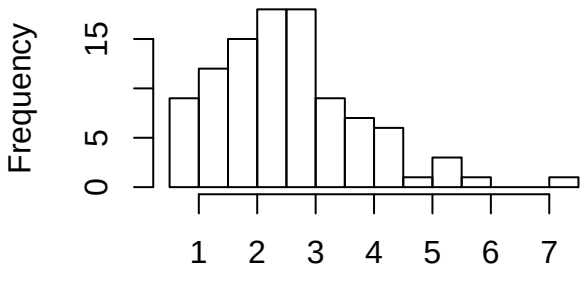


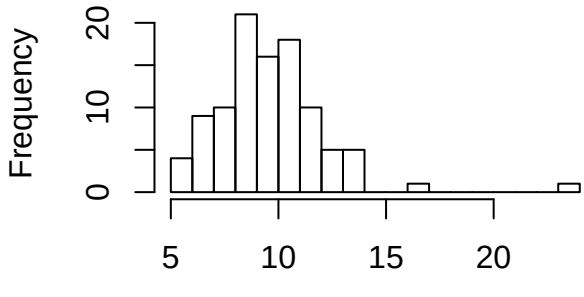



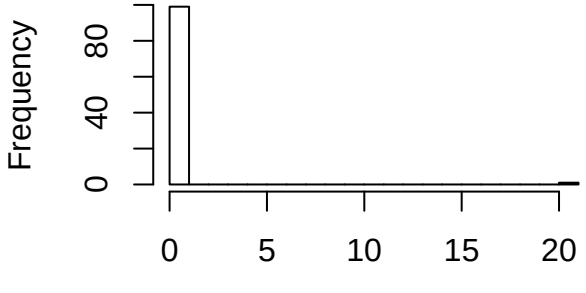



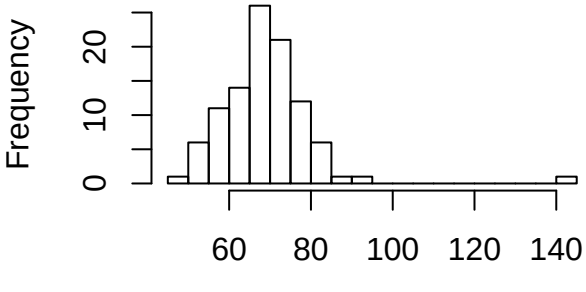




**prod_theta2_scale**

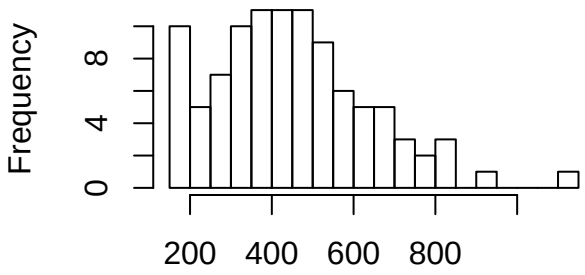


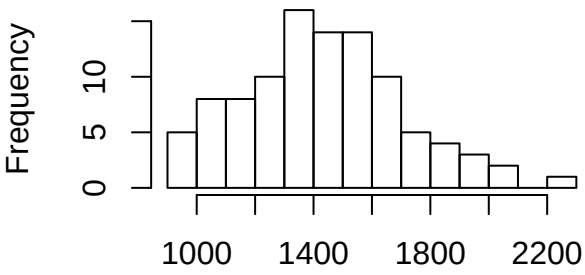



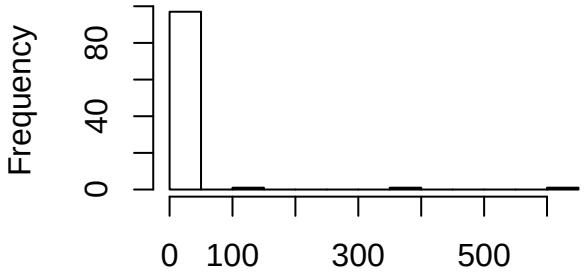
**prod_m0_scale**



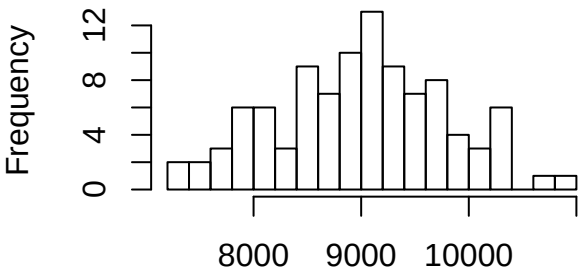

Median estimates for prod_m0_scale




Mean estimates for prod_m0_scale

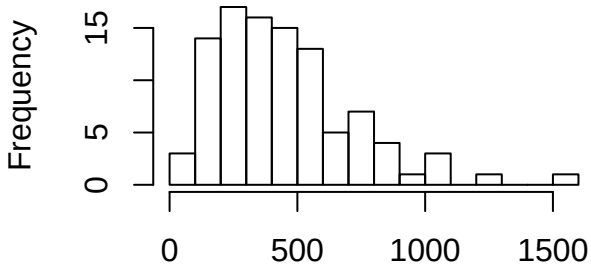



st. error of mean for prod_m0_scale

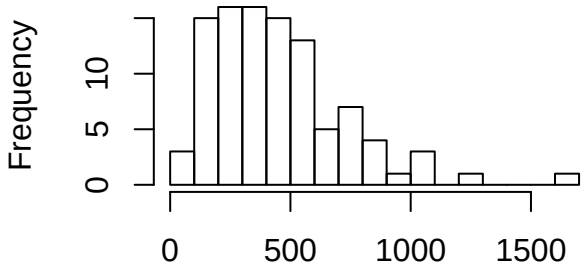



Length of 95% CI for prod_m0_scale

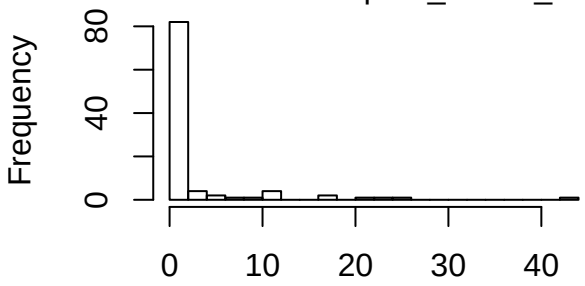
**prod_theta2_m0_scale**



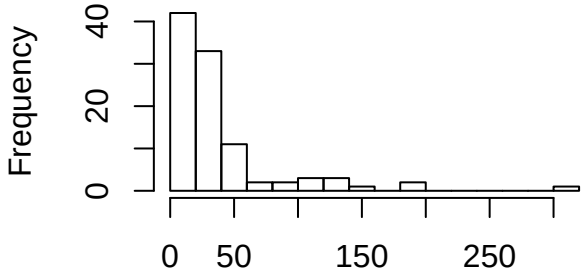

Median estimates for prod_theta2_m0_scal




Mean estimates for prod_theta2_m0_scale

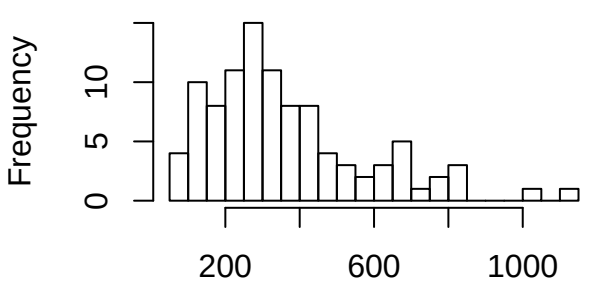


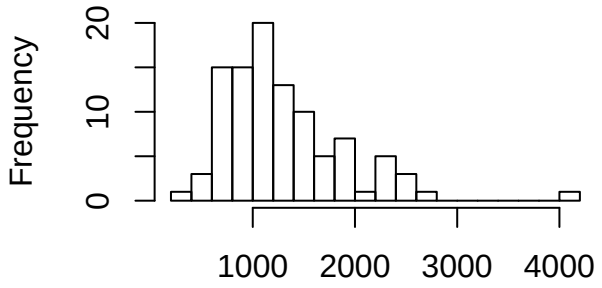

st. error of mean for prod_theta2_m0_scale

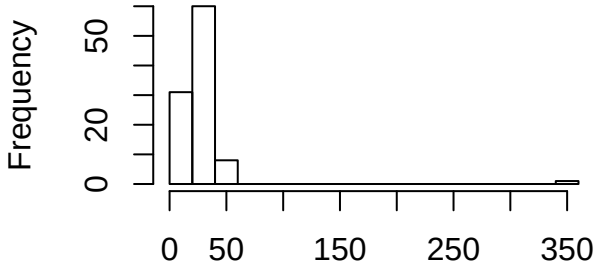


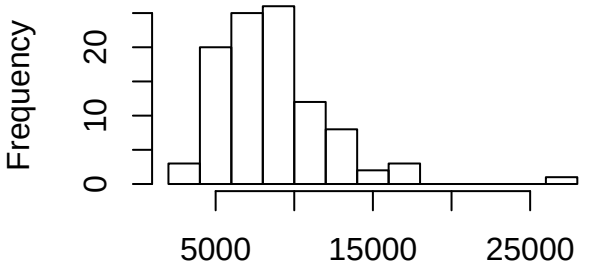

Length of 95% CI for prod_theta2_m0_scal

**x2_sim[180]**


Frequency
0
5
10
200
600
1000
Median estimates for x2_sim[180]


Frequency
0
10
20
1000
2000
3000
4000
Mean estimates for x2_sim[180]


Frequency
0
20
50
0
50
150
250
350
st. error of mean for x2_sim[180]


Frequency
0
10
20
5000
15000
25000
Length of 95% CI for x2_sim[180]

## Summary of length of 95% credible intervals (CIs)

Here we give the median, standard deviation (sd), and coefficient of variation (cv) of the length of the 95% CIs.

For simulated data (where the true parameter values are known), we also give the number of times that the CI covers the true value and median, sd, and cv of the length of those 95% CIs that cover the true value.

| | median_l_CI | sd_l_CI | cv_l_CI |
|---|---|---|---|
| theta[1] | 0.108 | 0.081 | 0.709 |
| theta[2] | 7.909 | 0.360 | 0.045 |
| theta[3] | 0.107 | 0.081 | 0.706 |
| m0 | 747.712 | 12.580 | 0.017 |
| sigma | 0.013 | 0.087 | 2.795 |
| scale | 27.503 | 0.324 | 0.012 |
| offset | 0.960 | 2.097 | 1.269 |
| t0 | 0.023 | 0.158 | 2.288 |
| prod_theta2_m0 | 2032.461 | 216.245 | 0.108 |
| prod_theta2_scale | 68.384 | 11.374 | 0.165 |
| prod_m0_scale | 9093.220 | 790.197 | 0.088 |
| prod_theta2_m0_scale | 24.097 | 46.816 | 1.224 |
| x2_sim[180] | 8057.837 | 3622.160 | 0.417 |

The following table shows the values of the median of *the length of the CIs divided by the median of each sample*

$$m_1 = \text{median}\left(\frac{q_i(0.975) - q_i(0.025)}{q_i(0.5)}\right),$$

the median of *the length of the CIs divided by the mean of each sample*

$$m_1 = \text{median}\left(\frac{q_i(0.975) - q_i(0.025)}{sample\_mean}\right),$$

as well as the median of the length of the CIs divided by *the median of the medians of the sample*

$$m_3 = \frac{\text{median}(q_i(0.975) - q_i(0.025))}{\text{median}(q_i(0.5))}.$$

and (if applicable) the median of *the length of the CIs divided by the true value*

$$m_4 = \frac{\text{median}(q_i(0.975) - q_i(0.025))}{\text{true value}}.$$

| | m_1 | m_2 | m_3 |
|---|---|---|---|
| theta[1] | 0.98 | 1.26 | 1.71 |
| theta[2] | 8.49 | 4.38 | 8.43 |
| theta[3] | 1.04 | 1.31 | 1.75 |
| m0 | 4.44 | 3.25 | 4.45 |
| sigma | 0.21 | 0.21 | 0.22 |
| scale | 5.44 | 3.35 | 5.44 |
| offset | 0.11 | 0.11 | 0.12 |
| t0 | 0.03 | 0.03 | 0.03 |
| prod_theta2_m0 | 25.97 | 6.79 | 25.27 |
| prod_theta2_scale | 28.79 | 7.32 | 28.29 |
| prod_m0_scale | 20.86 | 6.45 | 21.37 |
| prod_theta2_m0_scale | 0.06 | 0.06 | 0.06 |
| x2_sim[180] | 25.94 | 6.77 | 26.11 |