MCMC Diagnostics - IFLS data

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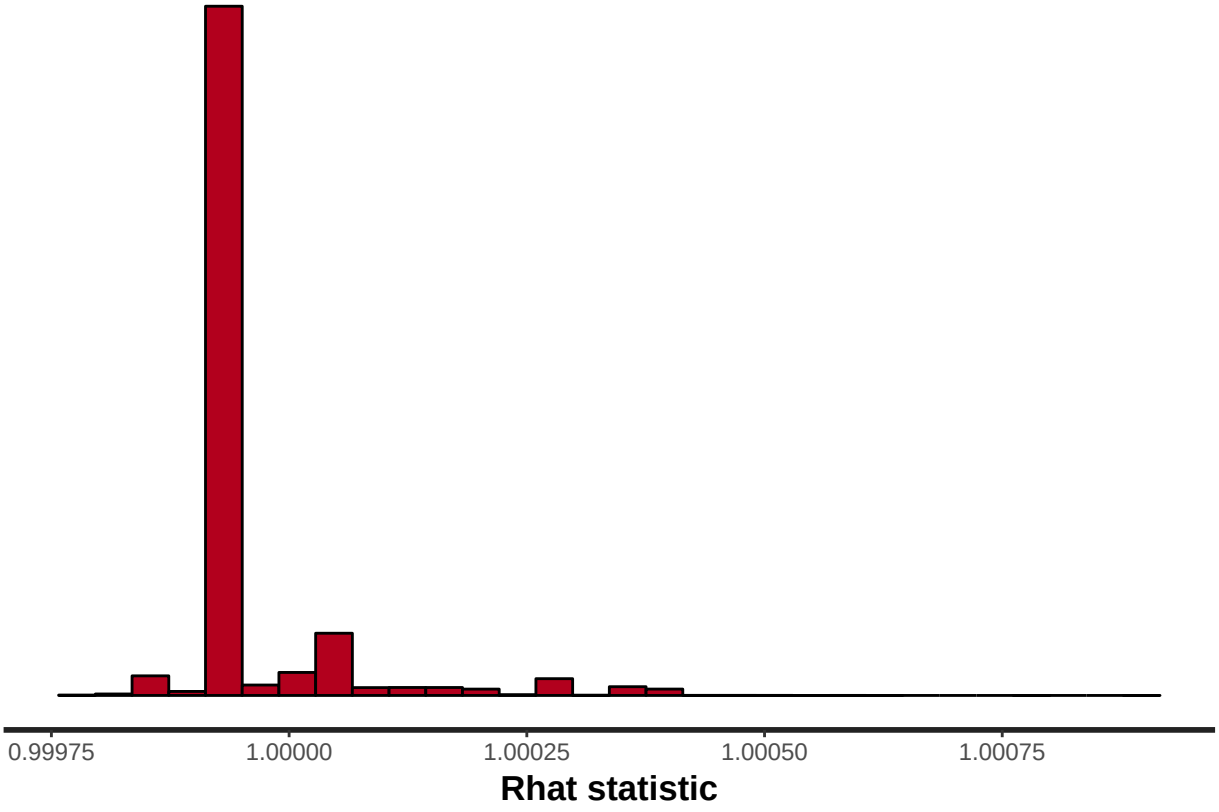
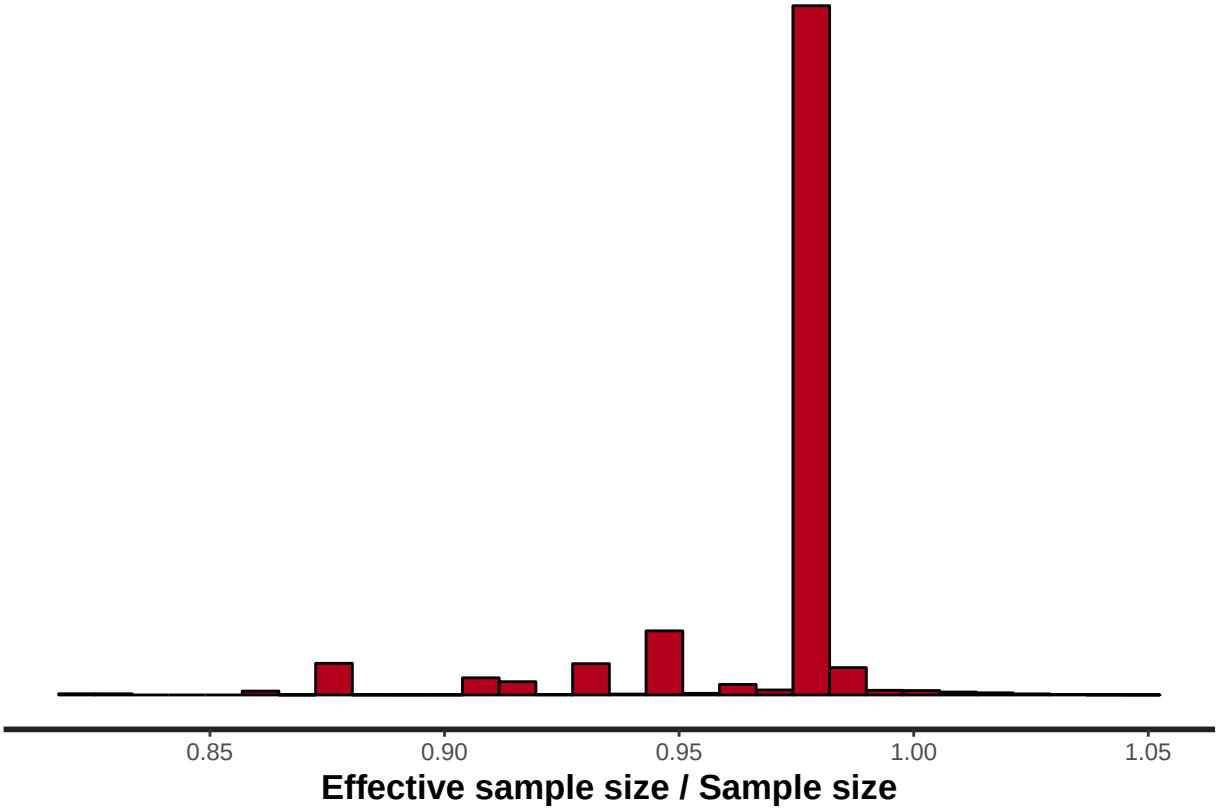
General MCMC diagnostic plots

Overall model diagnostics from rstan package.

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```




```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```




```
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```
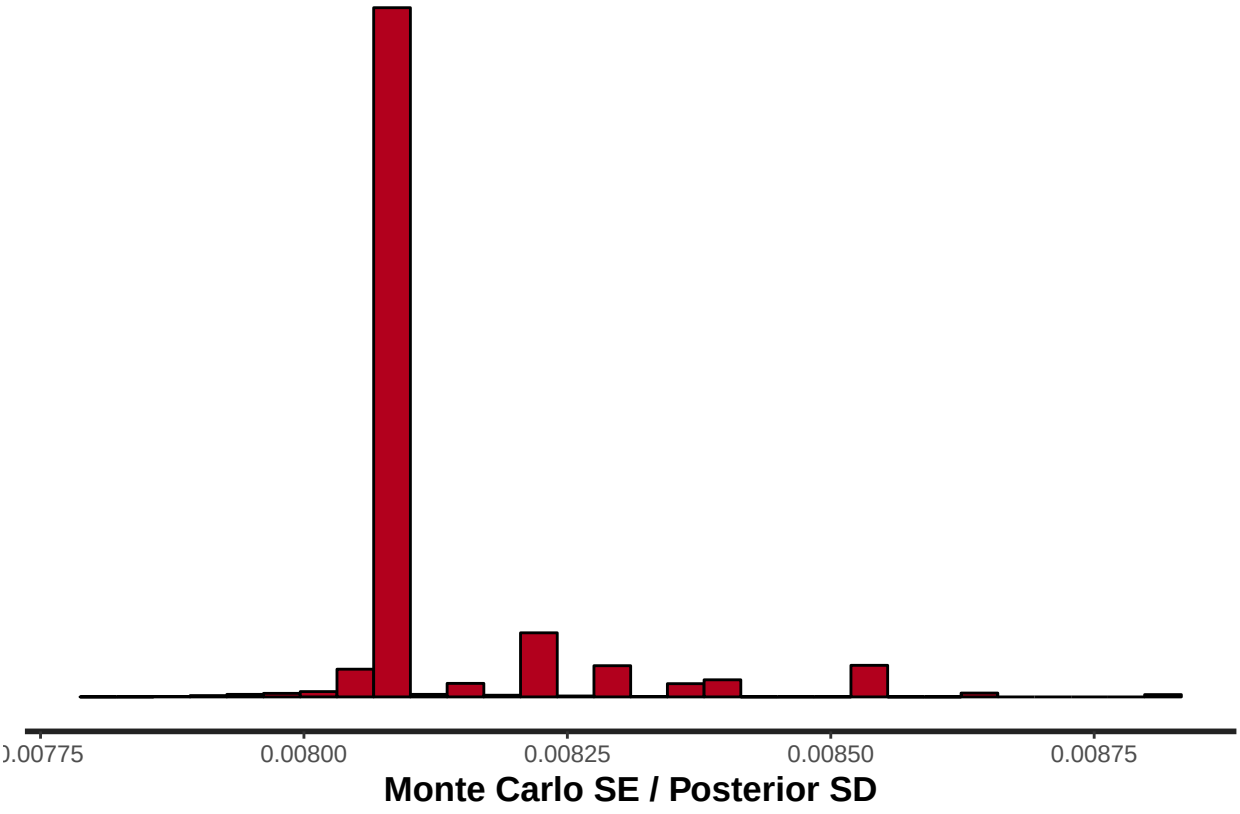
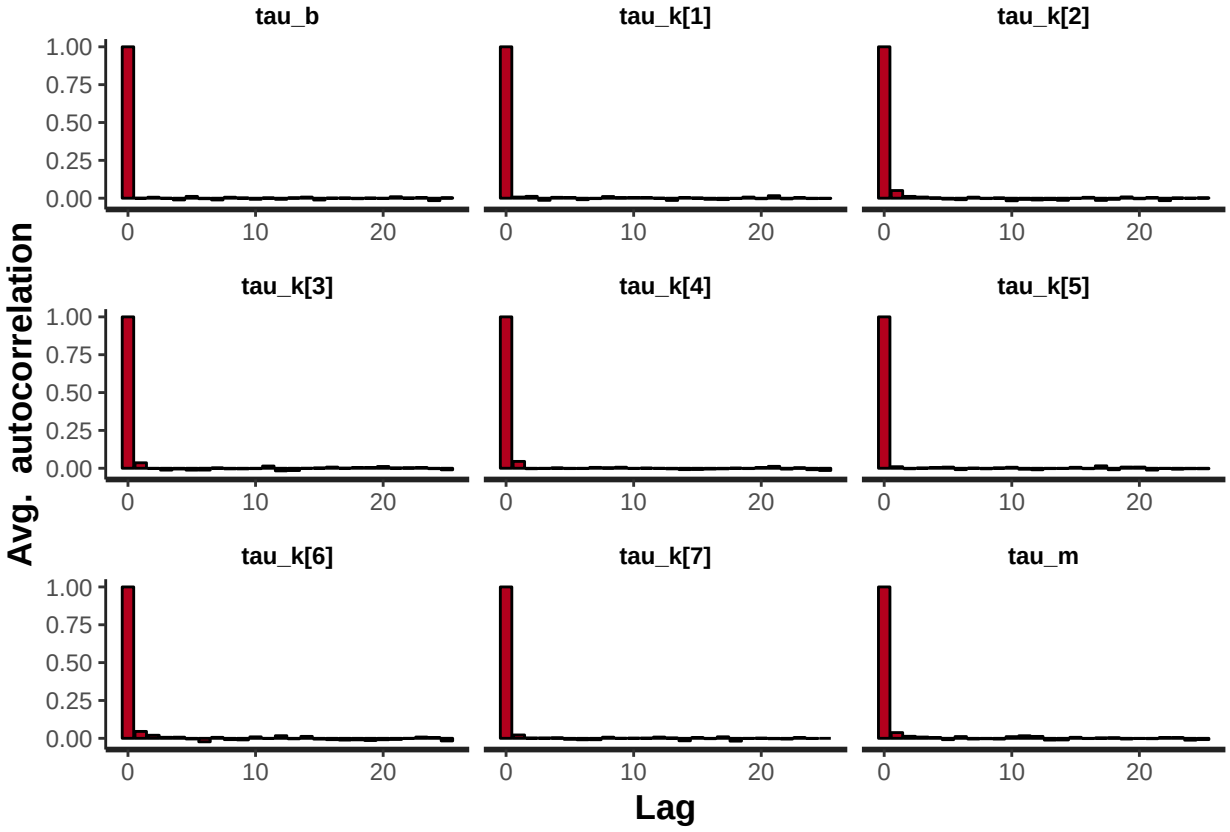
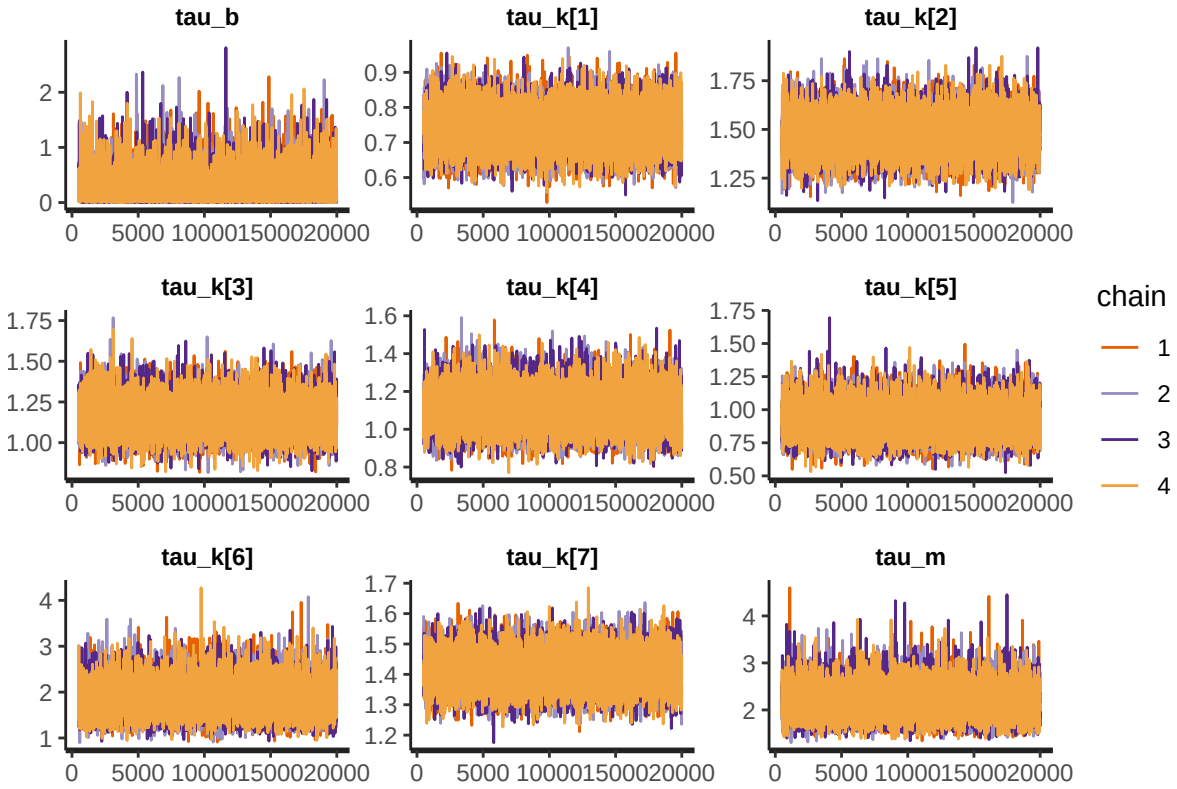



Individual Parameter Diagnostics

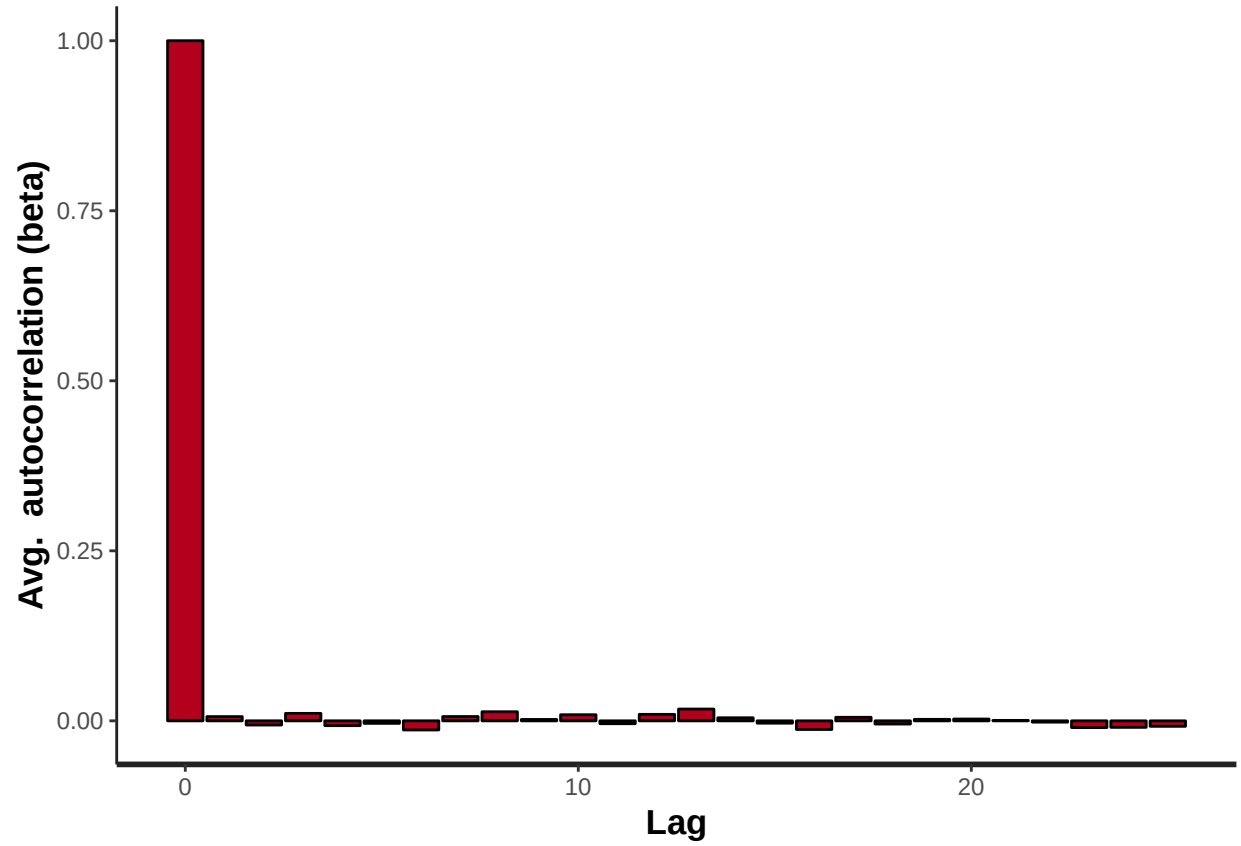
Individual parameter plots. Autocorrelation and trace plots for individual parameters, and histograms of posterior medians for group parameters.

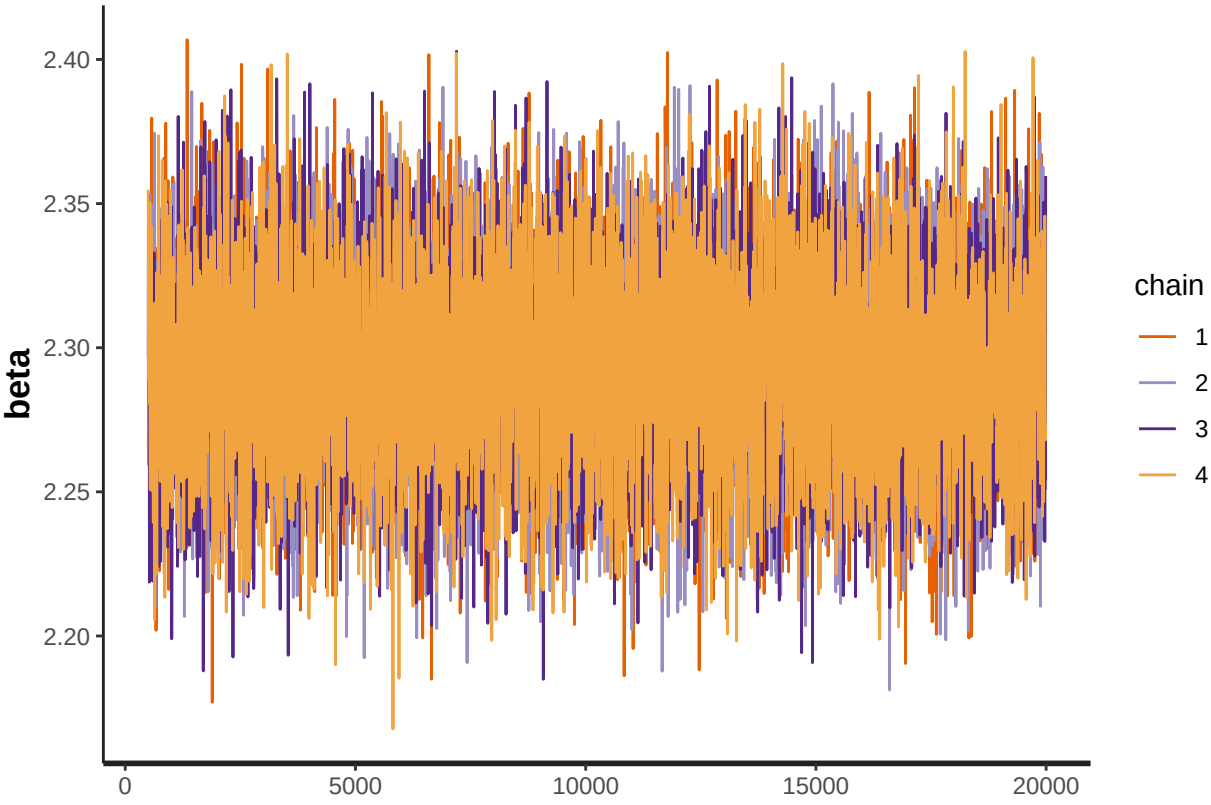
```
##               mean      se_mean         sd        25%       50%       75%
## tau_b    0.2738259 0.0022083538 0.27454471 0.07694275 0.1915234 0.3773743
## tau_k[1] 0.7387786 0.0004581807 0.05679378 0.69942125 0.7370423 0.7761194
## tau_k[2] 1.4781037 0.0008719891 0.10200231 1.40768251 1.4750575 1.5455871
## tau_k[3] 1.1608346 0.0009334463 0.11257174 1.08214374 1.1551468 1.2337636
## tau_k[4] 1.1036721 0.0008761198 0.10476580 1.02936688 1.0983218 1.1723354
## tau_k[5] 0.9140276 0.0010152291 0.12549301 0.82559359 0.9049388 0.9928949
## tau_k[6] 1.8260783 0.0032475434 0.37780541 1.55584998 1.7794794 2.0507657
## tau_k[7] 1.4136252 0.0004947248 0.06016517 1.37286867 1.4130381 1.4536679
## tau_m    2.1366294 0.0029298143 0.34603179 1.89108421 2.0922879 2.3304361
##             n_eff      Rhat
## tau_b    15455.71 0.9998916
## tau_k[1] 15364.84 0.9998570
## tau_k[2] 13683.52 0.9999542
## tau_k[3] 14543.87 1.0000051
## tau_k[4] 14299.21 1.0003492
## tau_k[5] 15279.56 1.0002282
## tau_k[6] 13534.01 0.9999722
## tau_k[7] 14789.82 1.0000492
## tau_m    13949.28 1.0001727
```





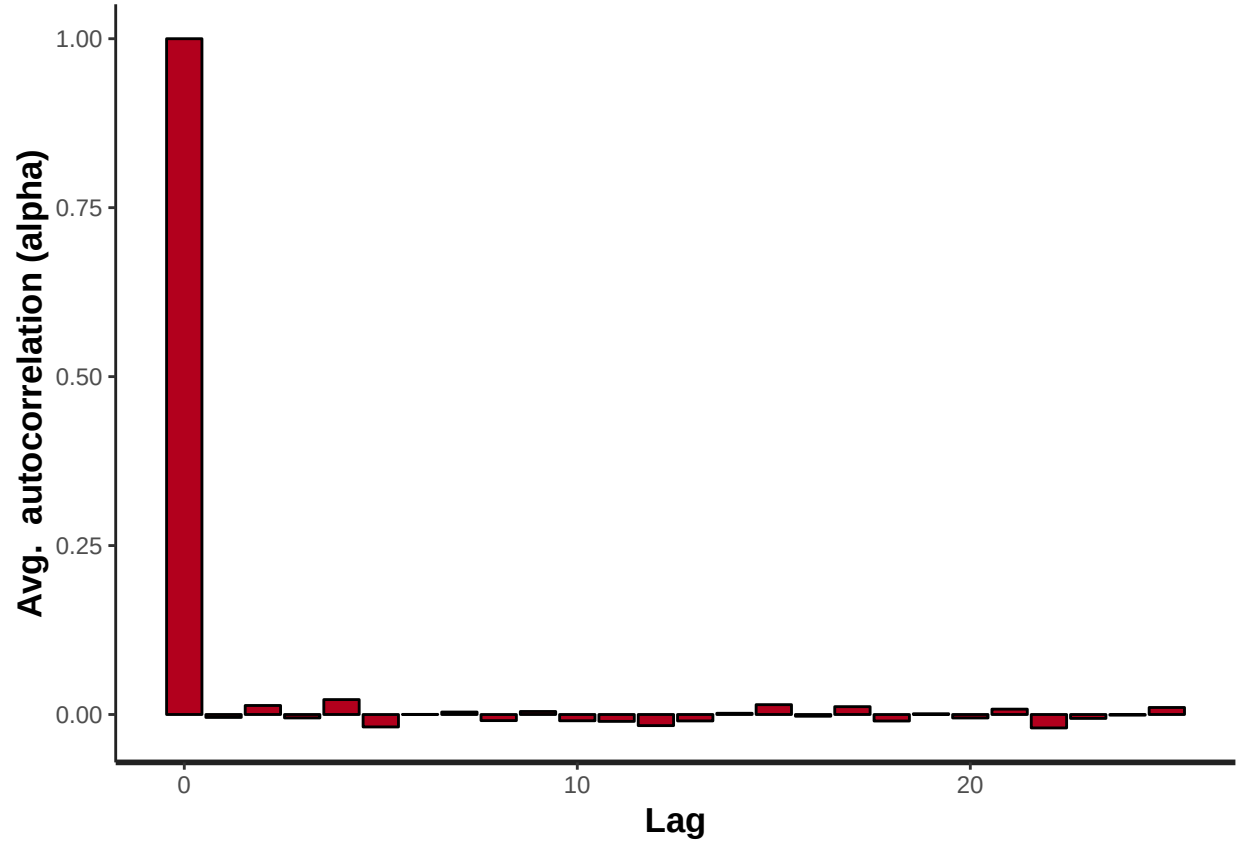

```
##           mean      se_mean          sd      25%      50%      75%    n_eff
## beta 2.293619 0.0002660984 0.03290199 2.271239 2.293642 2.316056 15288.32
##           Rhat
## beta 0.9998803
```

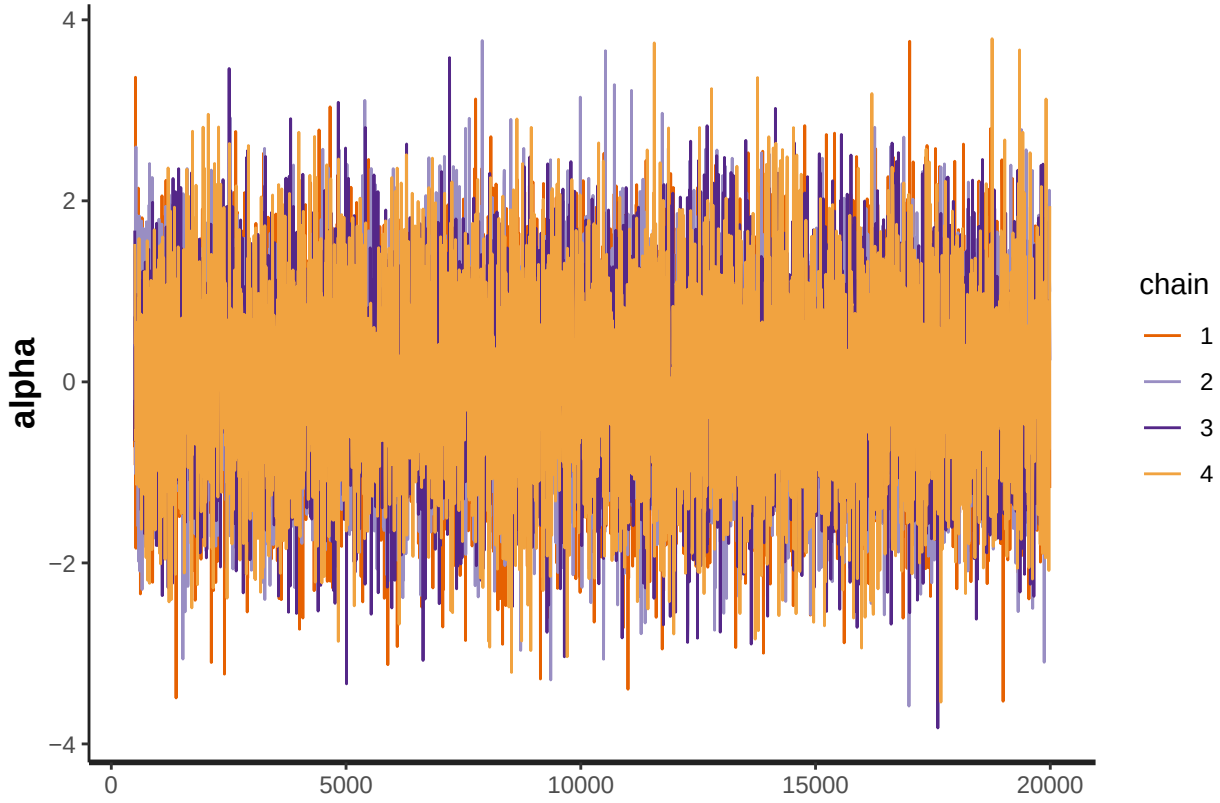


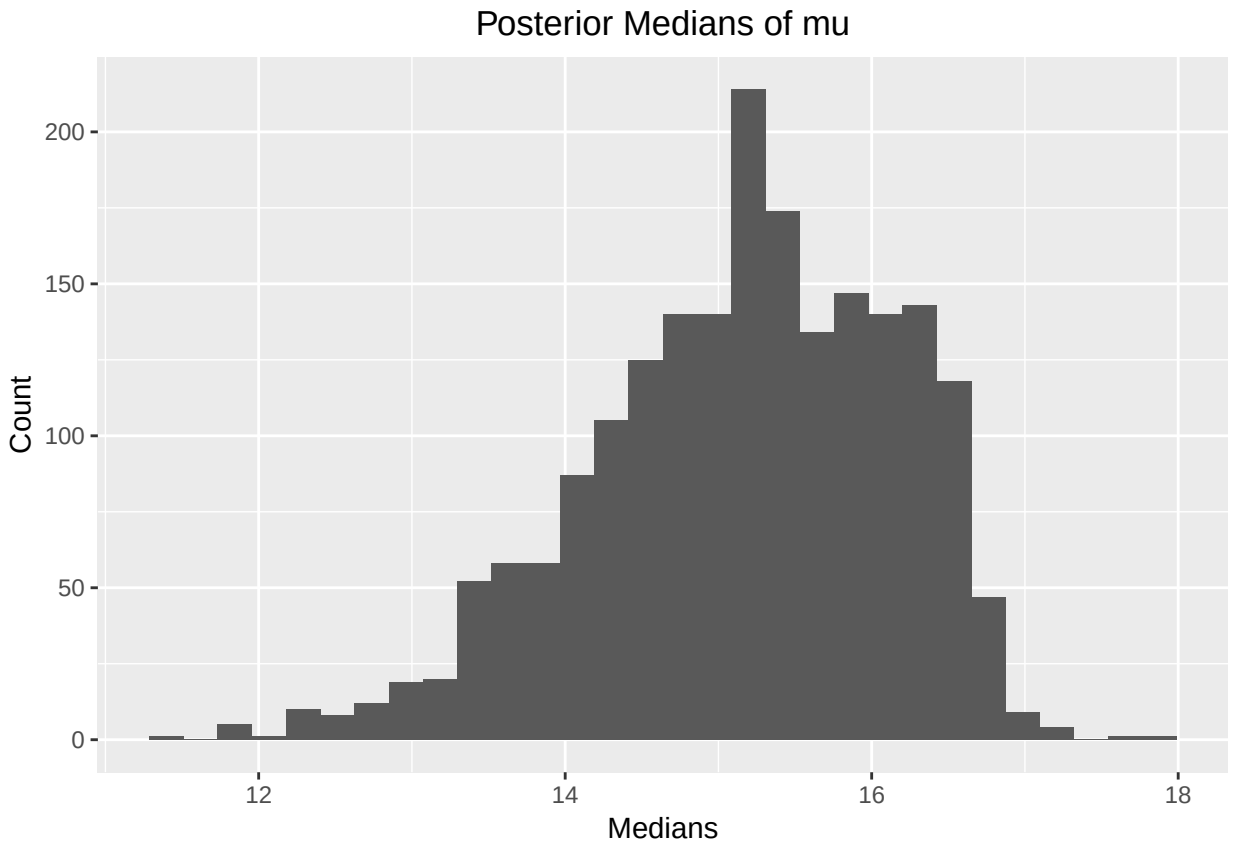



```
##              mean     se_mean       sd        25%         50%       75%
## alpha 0.01505459 0.00812937 1.00551 -0.6592403 0.004610044 0.6959036
```

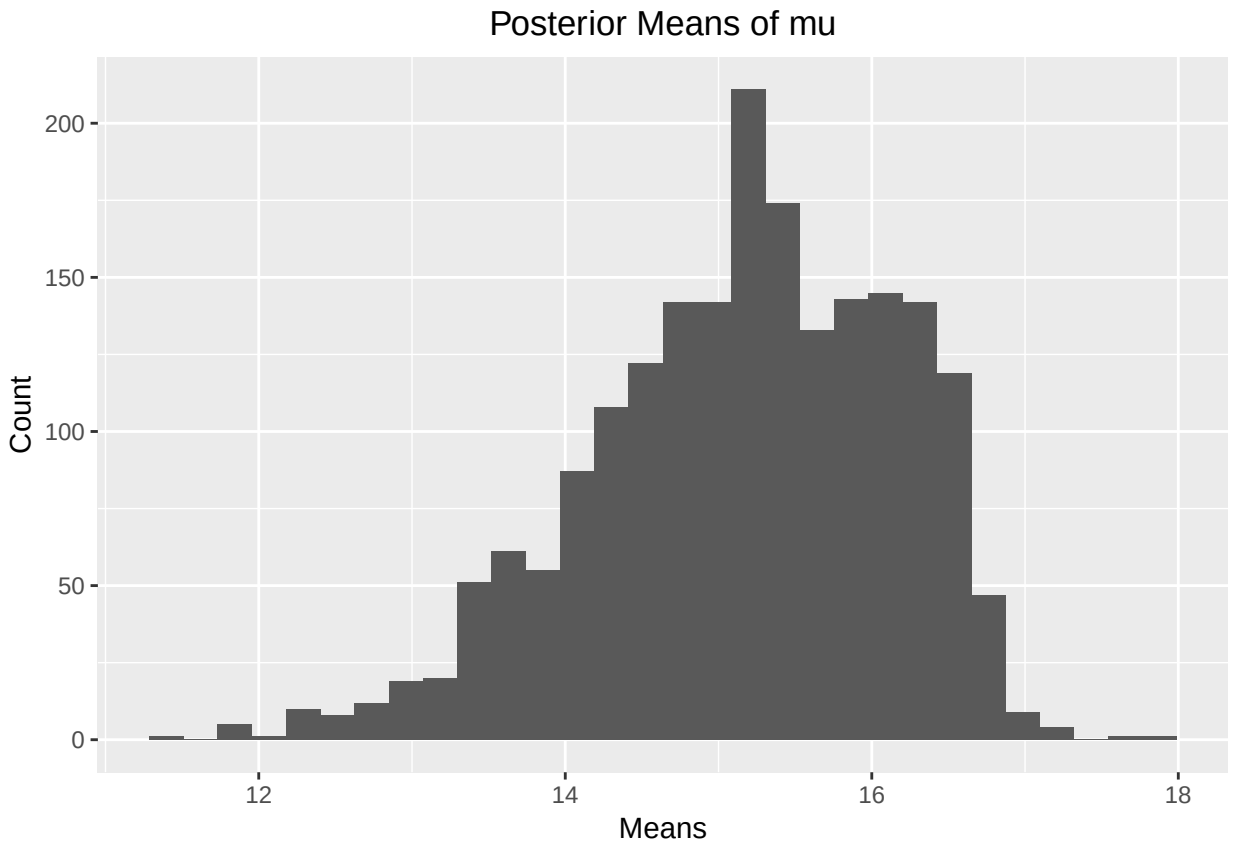
```
##           n_eff      Rhat
## alpha 15298.87 0.9999423
```



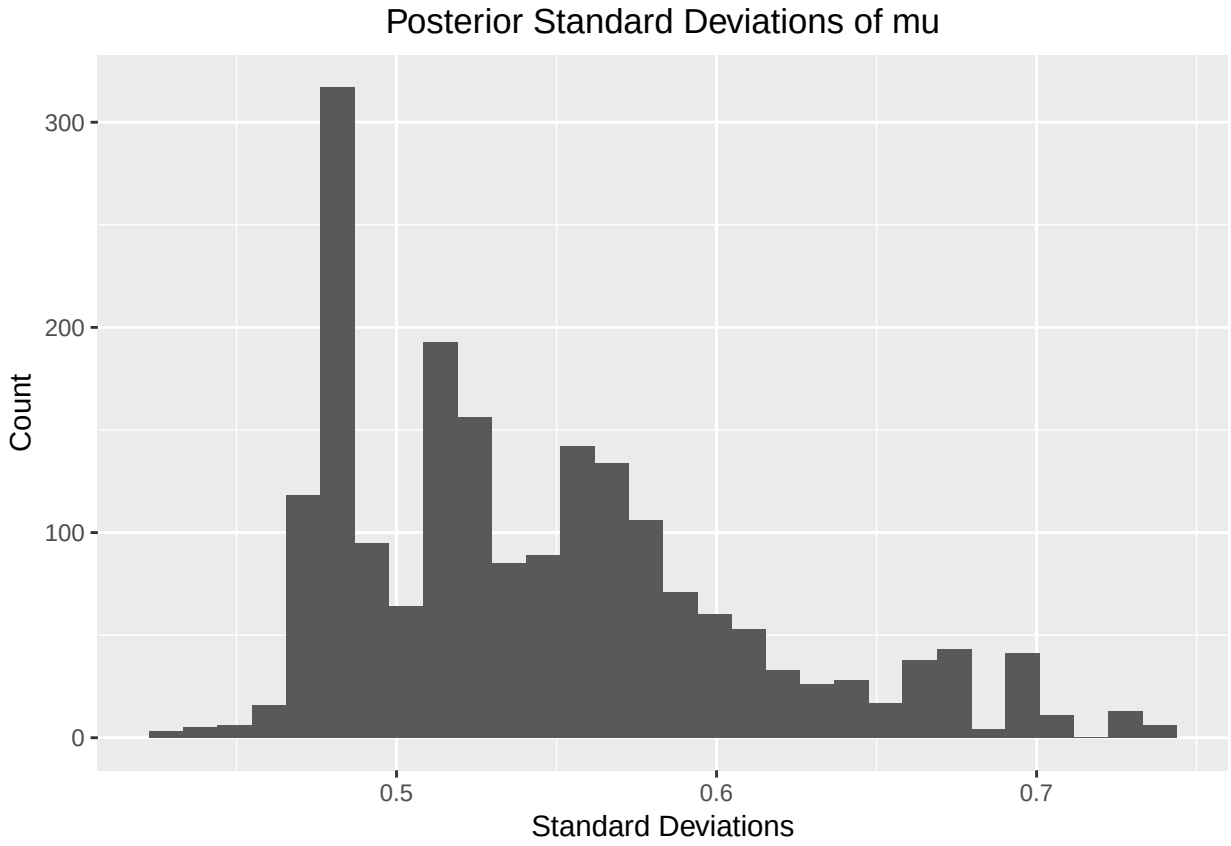


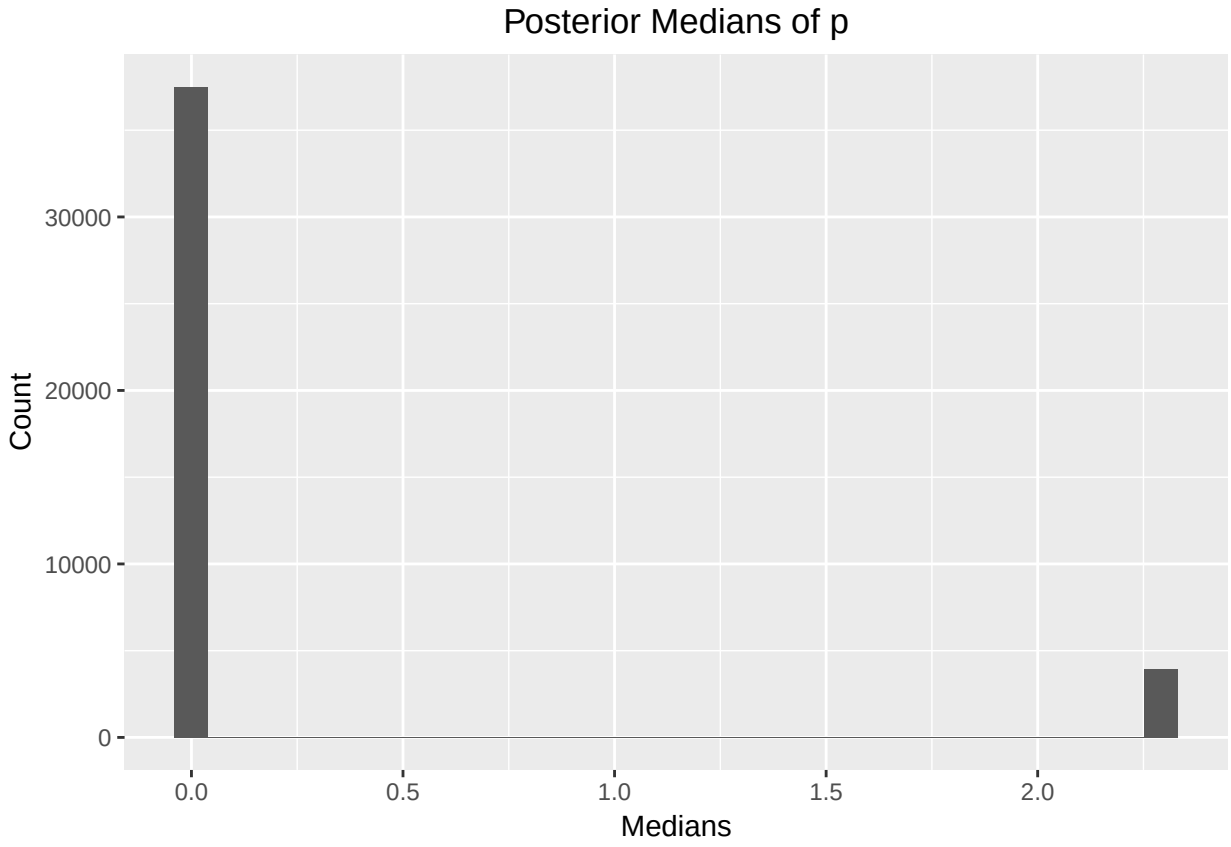

Posterior Medians of mu
Count
200
150
100
50
0
12
14
16
18
Medians

```
## [1] "       "
```

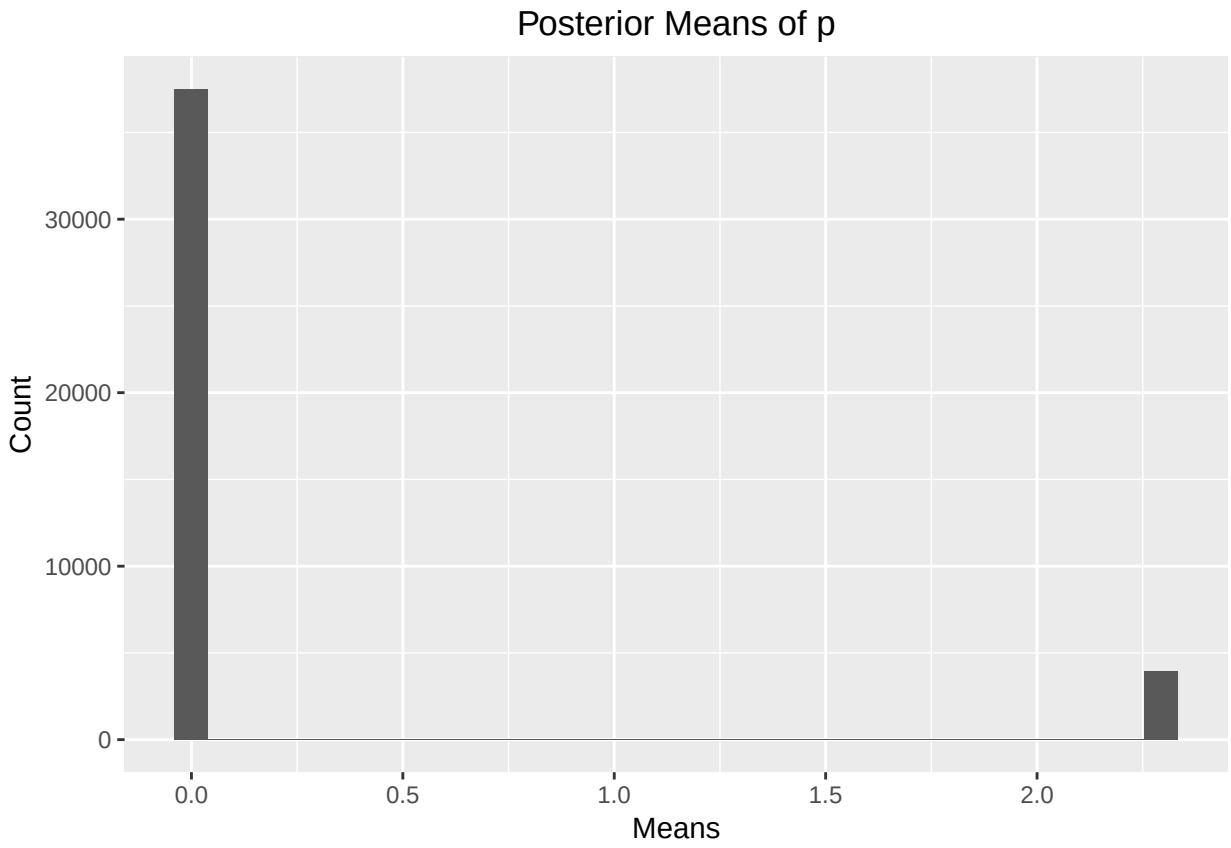



```
## [1] "      "
```

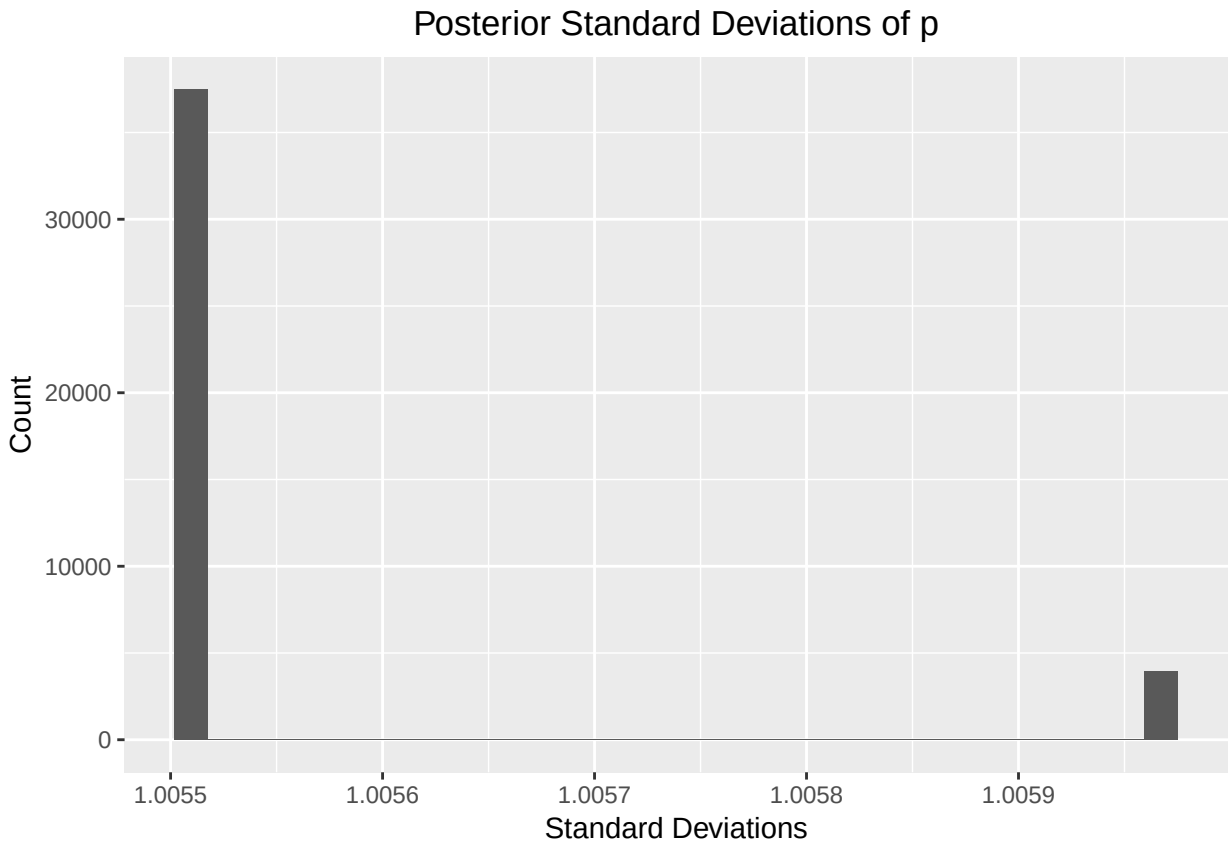

Posterior Standard Deviations of mu
Count
300
200
100
0
0.5
0.6
0.7
Standard Deviations


Posterior Medians of p
Count
30000
20000
10000
0
0.0
0.5
1.0
1.5
2.0
Medians

```
## [1] "       "
```


Posterior Means of p
Count
30000
20000
10000
0
0.0
0.5
1.0
1.5
2.0
Means

```
## [1] "       "
```



Histograms for β values and w, and z posterior means across chains.