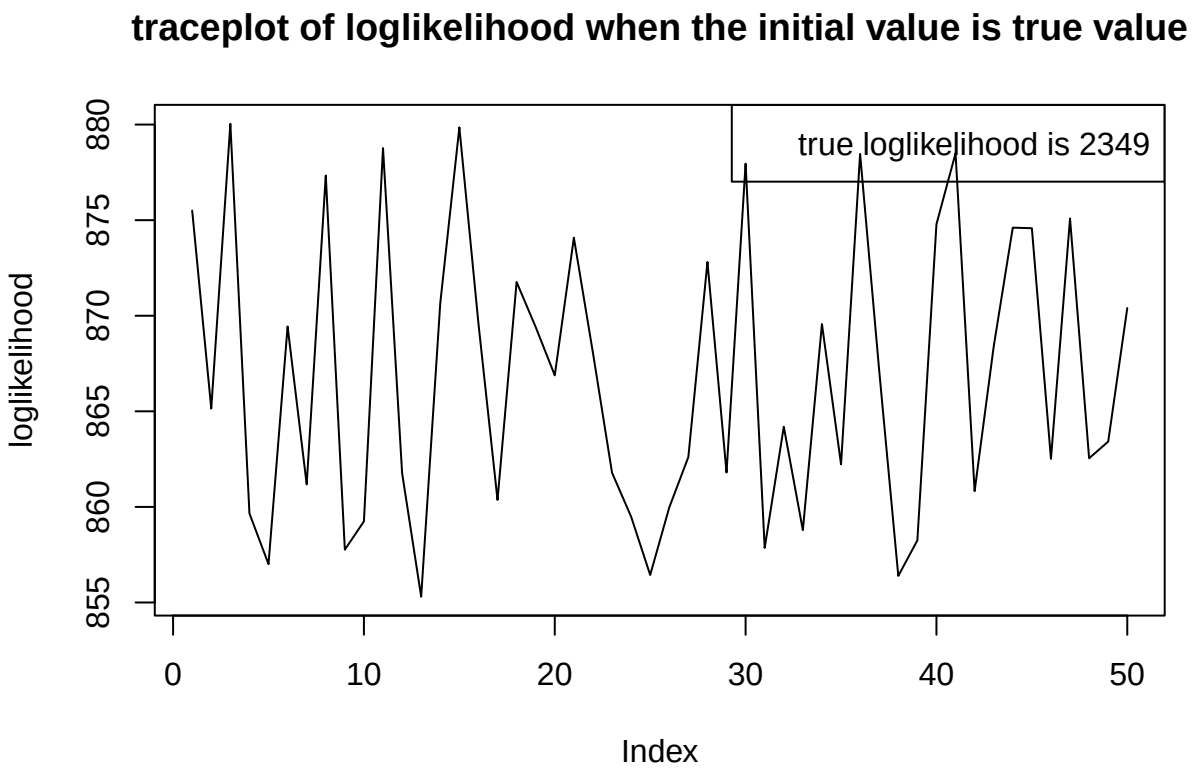
Traceplot

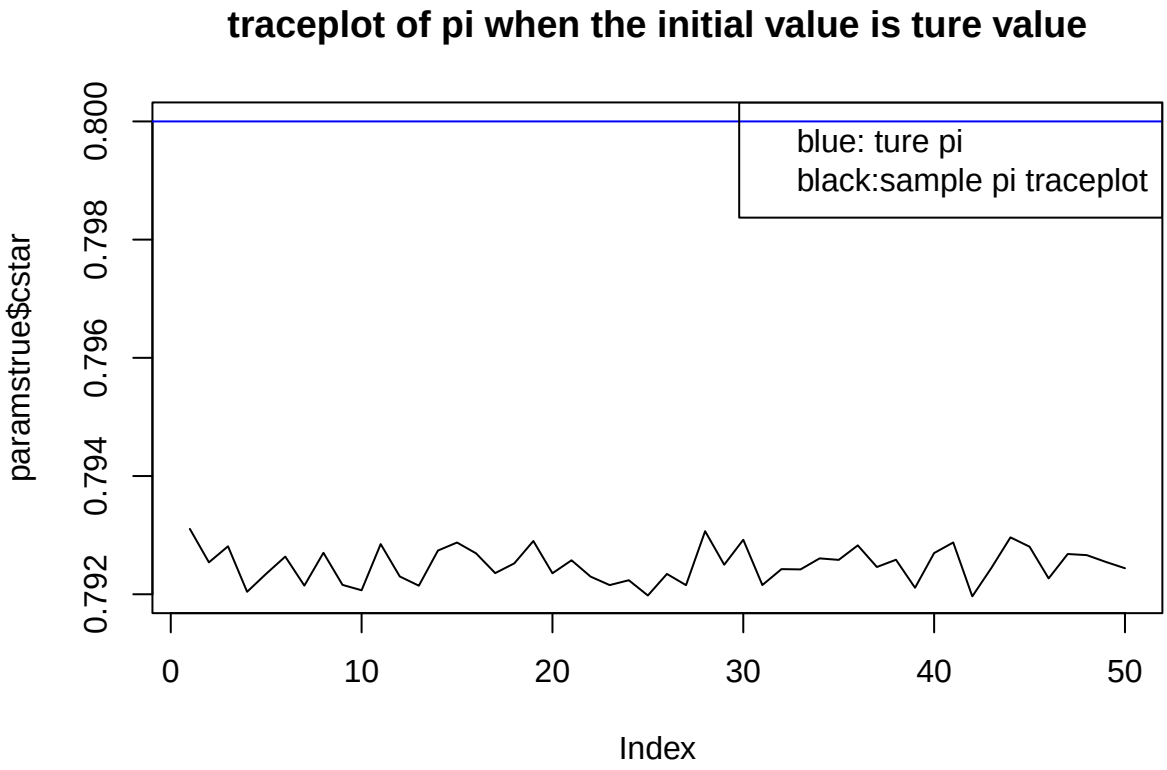
2022-11-17

the data is generated as follows

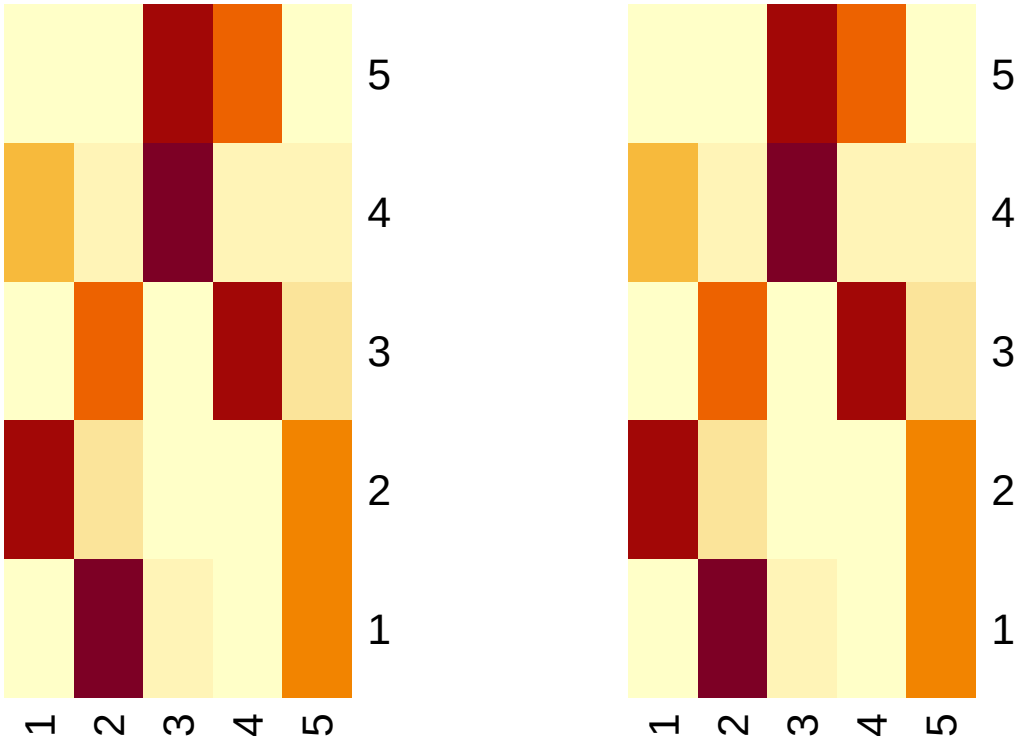
The model is formulated as $y = \pi Mx + (1 - \pi)e$, here we set π to 0.8

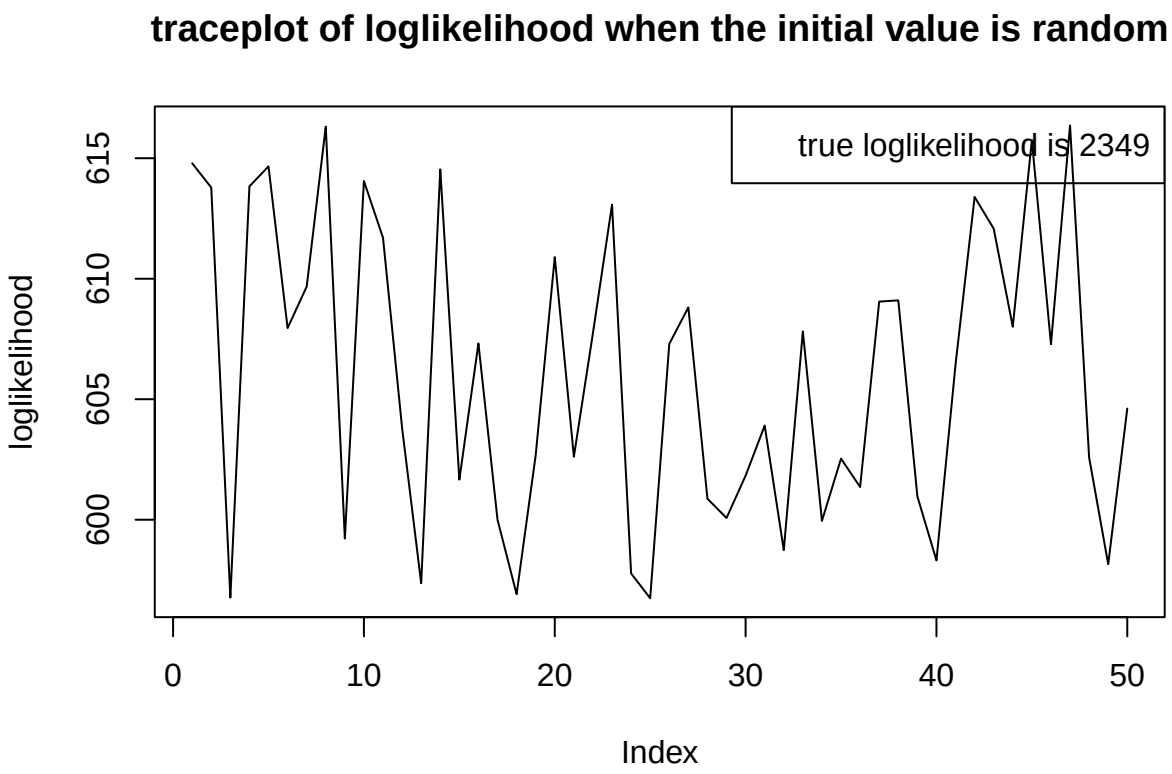
```
set.seed(2)
x = t(rdirichlet(n,rep(0.01,px)))
e = t(rdirichlet(n,rep(0.1,py)))
m = matrix(rgamma(px * py, 1 / py, 1), py, px)
m = t(t(m) / colSums(m))
y = 0.8 * m %*% x + 0.2 * e
```

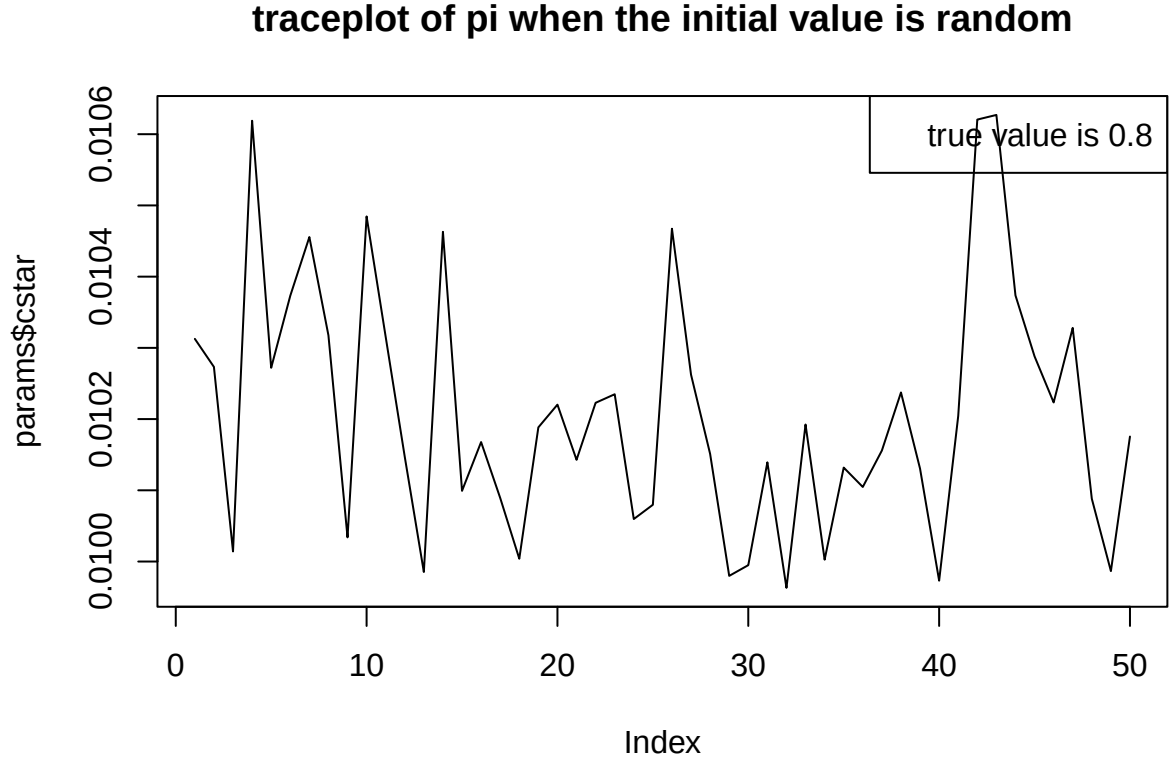




true M (left) and estimated M (right) when the initial value is true value




traceplot of loglikelihood when the initial value is random
true loglikelihood is 2349
loglikelihood
600
605
610
615
0
10
20
30
40
50
Index


traceplot of pi when the initial value is random
true value is 0.8
params$cstar
0.0100
0.0102
0.0104
0.0106
0
10
20
30
40
50
Index

true M (left) and estimated M (right) when the initial value is random