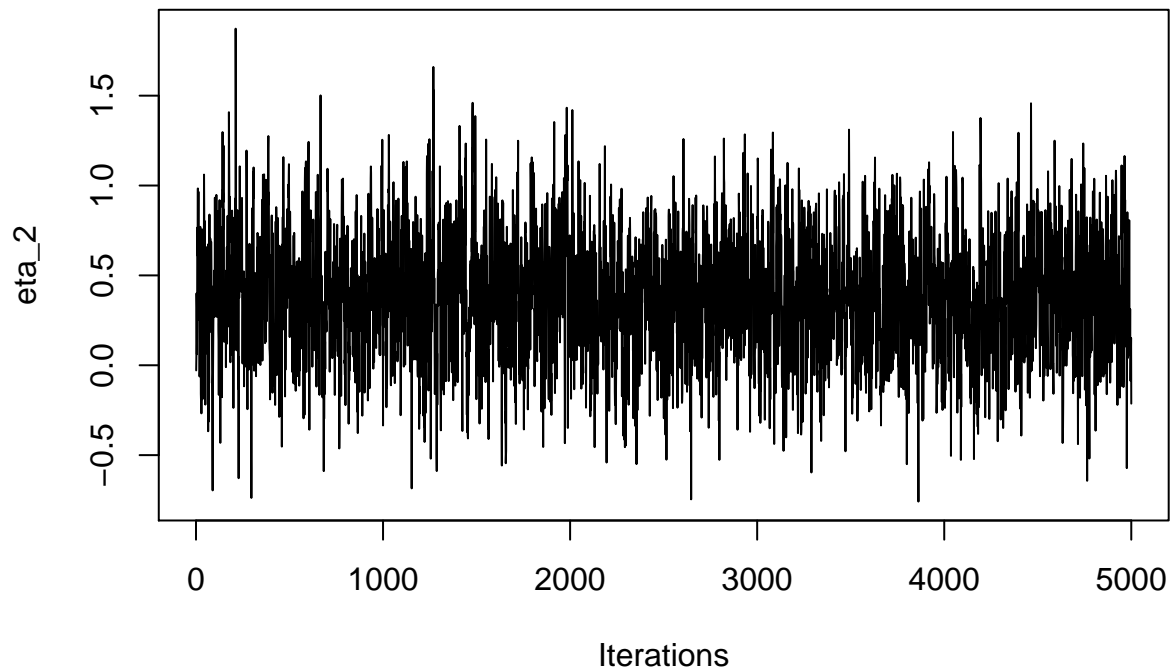
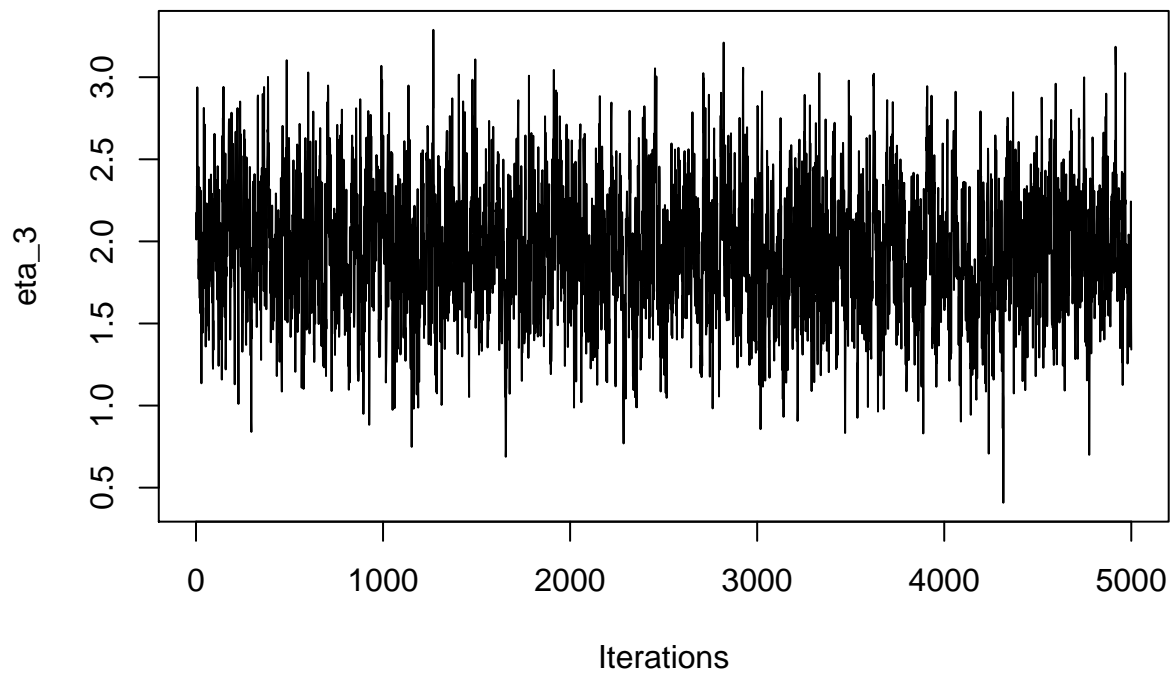


Check eta

```
#-----  
# This file is used to  
# 1.check eta2, eta3 and eta4  
# Last updated date: 7/11/2017  
#-----  
  
##set parameters  
eta=eta_sim ##iterate from true values of eta  
v=v_sim  
beta=beta_sim  
M=M_sim  
sgmr2=sgmr2_sim  
sgm2=sgm2_sim  
E=E_sim  
c=c_sim  
b=b_sim  
e=e_sim  
X=X_sim ##rename the simulated complete X_{it}  
  
##number of iterations  
n_iter=10000  
  
##recording structure  
eta_keep=matrix(0, nrow=n_iter, ncol=K)  
  
PG_eta=matrix(0, n, K-1) ## for w_{il} in updating eta_{l}  
k_eta=matrix(0, n, K-1) ## for k_{l} in updating eta_{l}  
  
for (m in 1:n_iter){  
  
  ##sample eta2, eta3 and eta4  
  for(l in 2:K){  
    for(i in 1:n){  
      tilting_eta=V_sim[i]*eta[l]-log(sum(exp(V_sim[i]*eta[-l]))) )  
      PG_eta[i,l-1]=rpg(num=1, h=1, z=tilting_eta)  
      index_eta=ifelse(c[i]==1,1,0)  
      k_eta[i,l-1]=index_eta-1/2+PG_eta[i,l-1]*log(sum(exp(V_sim[i]*eta[-l])))  
    }  
    S_eta=(1/eta_pri+t(V_sim)%*%diag(PG_eta[,l-1])%*%V_sim)^{-1}  
    m_eta=S_eta*t(V_sim)%*%k_eta[,l-1]  
    eta[l]=rnorm(n=1,mean=m_eta, sd=sqrt(S_eta))  
  }  
  
  eta_keep[m,]=eta  
}  
  
burnin=5000  
traceplot(x=as.mcmc(eta_keep[-(1:burnin),2]), ylab="eta_2")
```



```
traceplot(x=as.mcmc(eta_keep[-(1:burnin),3]), ylab="eta_3")
```



```
traceplot(x=as.mcmc(eta_keep[-(1:burnin),4]), ylab="eta_4")
```

