apr20_new_proposal

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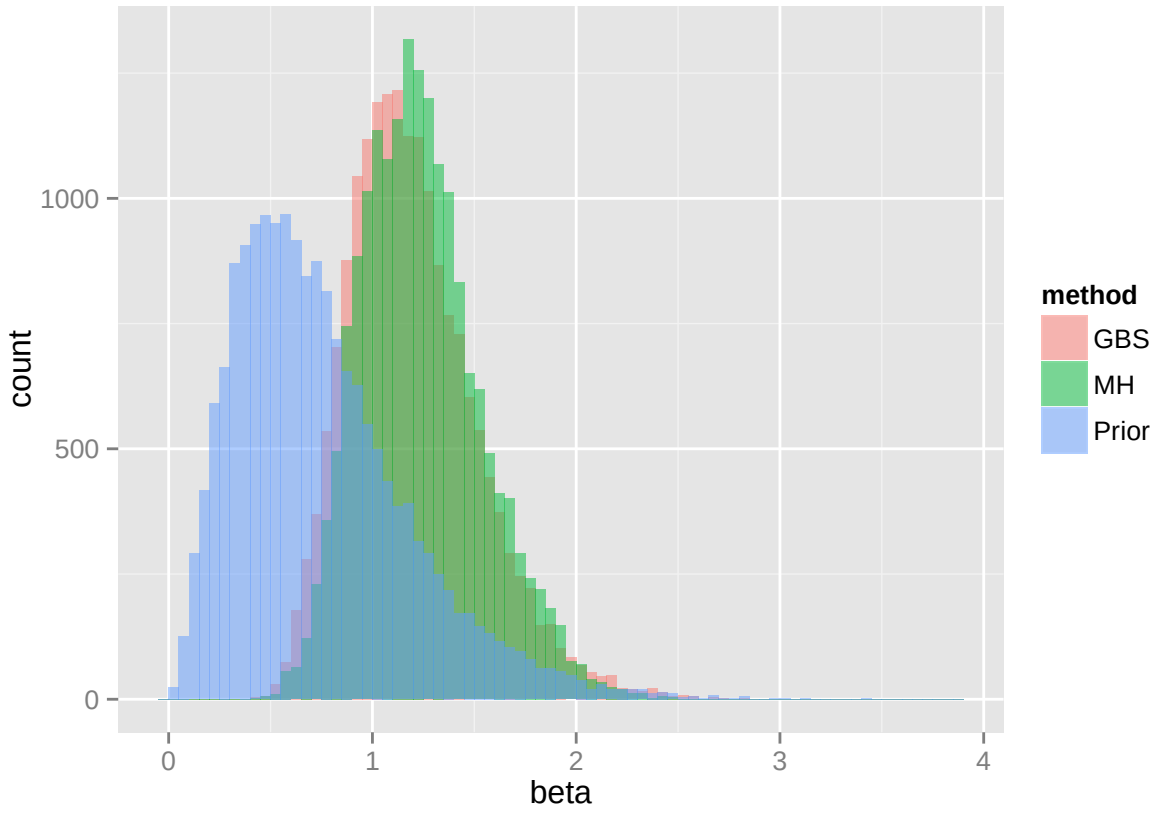
```
library(rjson)
library(ggplot2)
library(mcmcse)
```

```
## mcmcse: Monte Carlo Standard Errors for MCMC
## Version 1.1-2 created on 17-08-2015.
## copyright (c) 2012, James M. Flegal, University of California,Riverside
##                     John Hughes, University of Minnesota
##                     Dootika Vats, University of Minnesota
##  For citation information, type citation("mcmcse").
##  Type help("mcmcse-package") to get started.
```

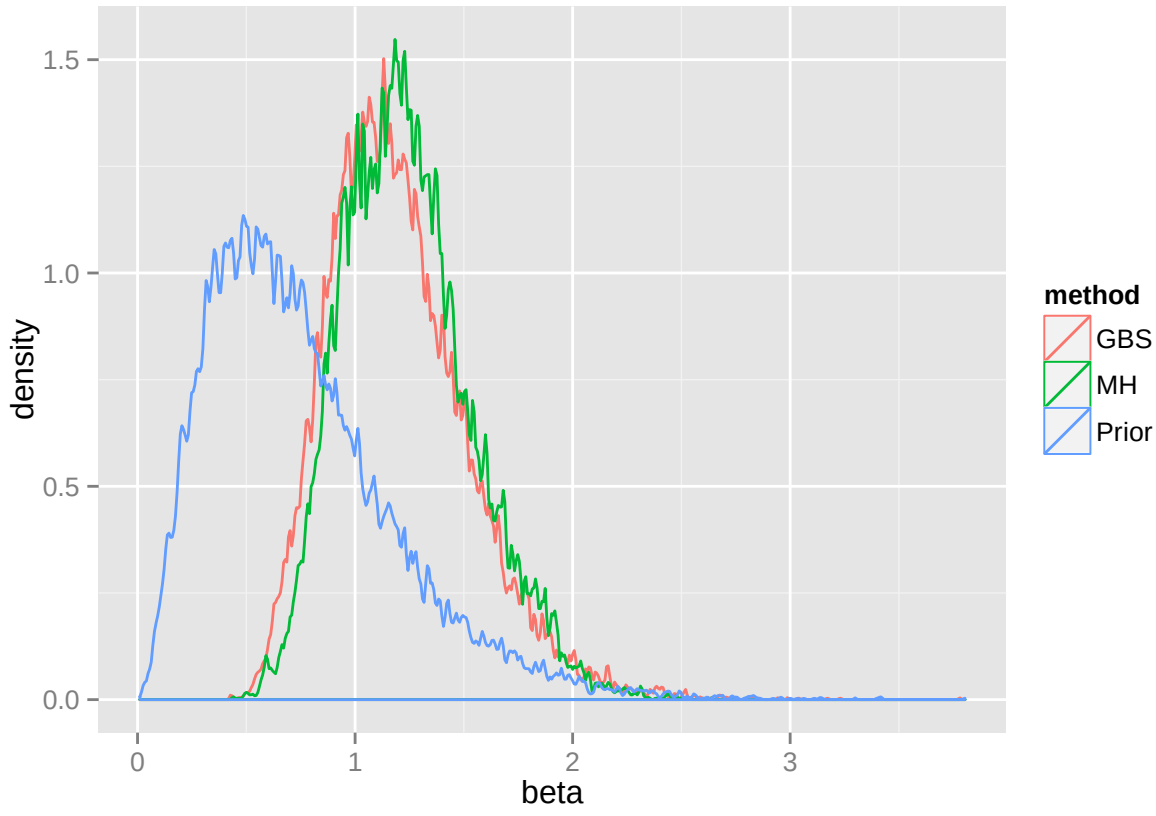
```
path <- "/Users/Isaac_Zhang/Research/MCMC/MJP_python_second"
setwd(path)
prior <- fromJSON(file = "EXPprior")
mu = prior[1]
# scale of alpha
lamb = prior[2]
# shape of beta
omega = prior[3]
# scale of beta
theta = prior[4]


betalist <- fromJSON(file = "B_betanewpropose")
mhbetalist <- fromJSON(file = "B_mh_betanewpropose")
sum(mhbetalist[-1] != mhbetalist[-length(mhbetalist)]) / length(mhbetalist)
```

```
## [1] 0.9498475
```

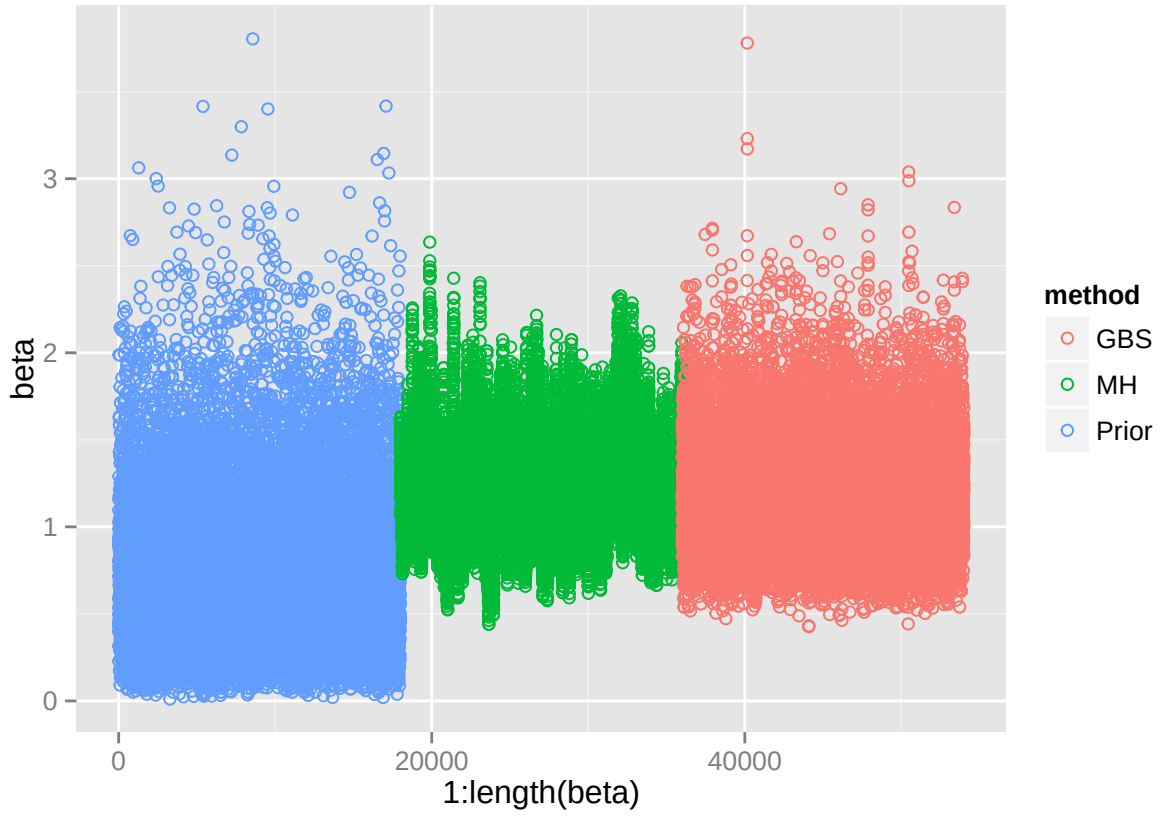
```
betalist <- betalist[2000: length(betalist)]
mhbetalist <- mhbetalist[2000: length(mhbetalist)]
dat2 <- data.frame(method = factor(rep(c("Prior","MH", "GBS"), each=length(betalist))),
                   beta = c(rgamma(length(betalist), omega, theta), mhbetalist, betalist))
ggplot(dat2, aes(x=beta, fill = method)) +
  geom_histogram(binwidth=.05, alpha=.5, position="identity")
```




```
ggplot(dat2, aes(x=beta, color=method)) + geom_density(adjust = 0.1)
```



```
ggplot(dat2, aes(x = 1: length(beta), y=beta, color=method)) + geom_point(shape=1)
```




```
ess(betalist)
```

```
##       se
## 2319.152
```

```
ess(mhbetalist)
```

```
##       se
## 330.0923
```