

mcmccheck

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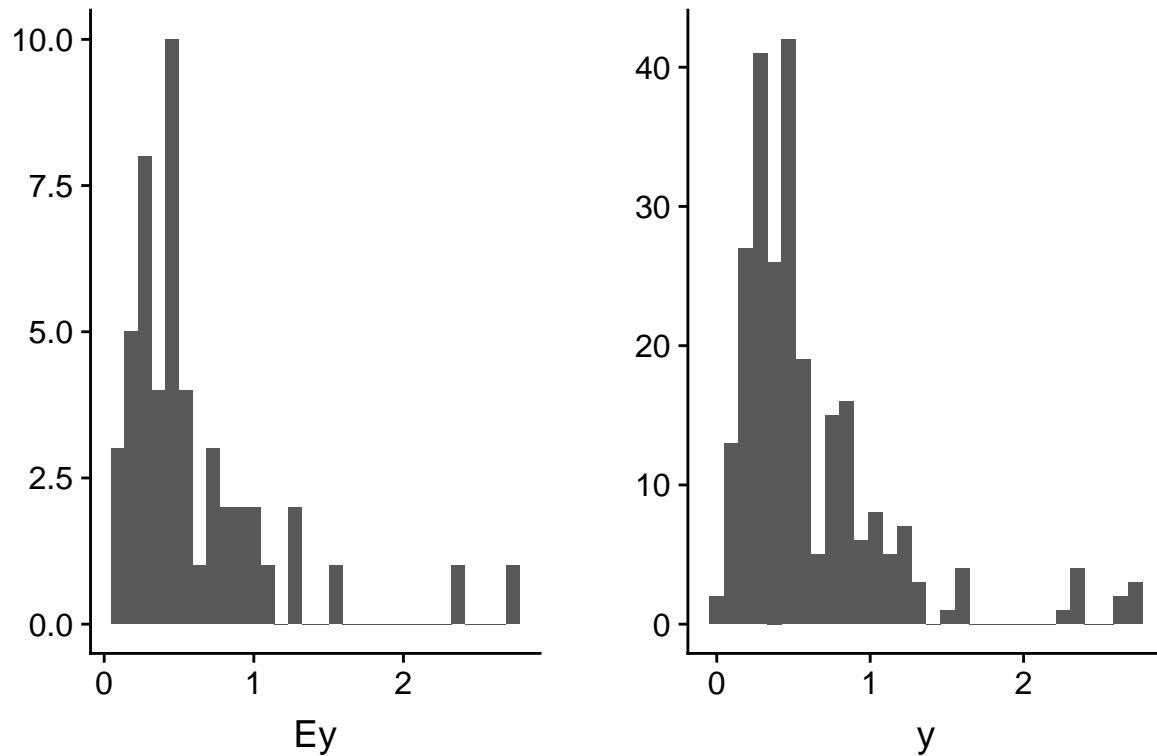
Simple run without sampling variance

```
a=0.01
b=0.01
p=0
mu=1
svar=0.1
ss=0
epi=1
replicates=5
ss=0
n=50
m=100
FITmode=2

maf=mafsim(m)
X <- Xsim(n,m,maf)
s= ssim(m,svar)
Ey=wsim(X,s,mode=FITmode,epi = 1,mu = mu)
y=sampleW(Ey,a,b,p,rep = replicates)
h=sort(rep.int(1:n,replicates))
title <- ggdraw() + draw_label(paste("h2= ",format(var(Ey) / var(y),digits=2)),fontface = 'bold')
plot_grid(title,
            plot_grid(qplot(Ey),qplot(y)),
            ncol = 1, rel_heights = c(0.1, 1)
            )

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

h2= 1



```
x<-napMCMCwrap(1e5)
```

```
## Proposed hyperparameters are better than the inferred
## rGWA start for vector s is better than proposed start ;)
## The starting likelihood is: -156.769720503848
## Calling napMCMC C++ function
## Inferred starting hyperparameters are better than proposed start
## rGWA start for vector s is better than proposed start ;)
## The starting likelihood is: 33.588492616988
## Calling napMCMC C++ function
## Inferred starting hyperparameters are better than proposed start
## Proposed start is better than rGWA inferred ;)
## The starting likelihood is: 99.5039081540517
## Calling napMCMC C++ function
```

```
LIKELIHOOD(y,h-1,wC(X,BMridge(X,My(y,h)),FITmode),b,a,p,mu,epi,verbose = F)
```

```
## [1] -Inf
```

```
LIKELIHOOD(y,h-1,wC(X,x$shat,FITmode,x$par["epi",],x$par["mu",]),
            x$par["b",],x$par["a",],x$par["p",],x$par["mu",],x$par["epi",],verbose = F)
```

```
## [1] 99.18828
```

```

# LIKELIHOOD(y,h-1,wC(X,x$shat,FITmode,x$par["epi",],1.2),
#           x$par["b",],x$par["a",],x$par["p",],1.2,x$par["epi",],verbose = F)
LIKELIHOOD(y,h-1,wC(X,s,FITmode),b,a,p,mu,epi,verbose = F)

```

```
## [1] 690.0173
```

```

pnap<-scorplot(s,x$shat)
pgwa<-scorplot(s,BMridge(X,My(y,h)))
pfinal<-plot_grid(
  pnap$psel,
  pgwa$psel,
  labels=c("NAP","mGWA")
)
# print(pfinal)

inap<-indplot(y,h,x$w)
igwa<-indplot(y,h,X %*% BMridge(X,My(y,h))+mu)
pfin2<-plot_grid(
  inap,
  igwa,
  labels=c("NAP","mGWA")
)

```

```
## Warning: Removed 1 rows containing missing values (geom_hline).
```

```
## Warning: Removed 1 rows containing missing values (geom_vline).
```

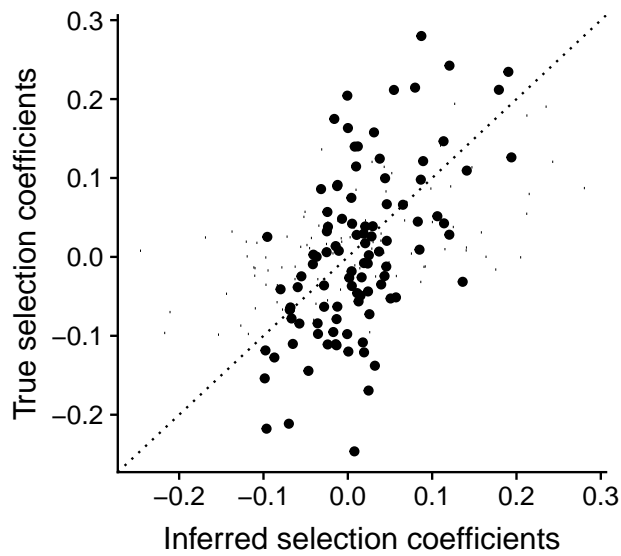
```
# print(pfin2)
```

```

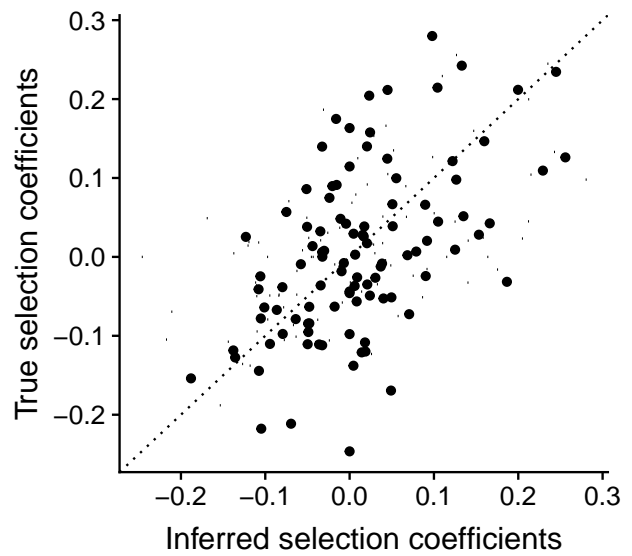
p<-plot_grid(pfinal,pfin2,ncol=1)
print(p)

```

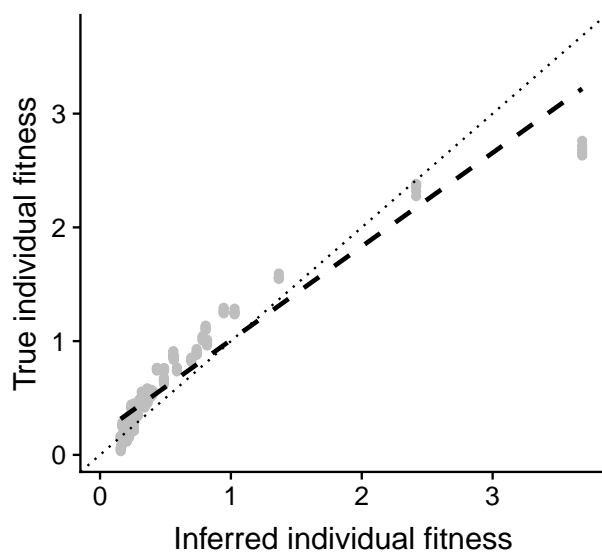
NAP $R^2 = 0.318$, $\beta = 0.978$, $a = 0.145$



mGWA $R^2 = 0.293$, $\beta = 0.674$, $a = 0.106$



NAP $R^2 = 0.901$, $\beta = 0.823$, $a = 0.017$



mGWA $R^2 = 0.999$, $\beta = 0.619$, $a = 0.002$

