Demo

```r
library(rnaGinesis)
library(ggplot2)
library(reshape)
mu <- rnaGinesis::mu
A <- rnaGinesis::A
```

```r
simresult.a <- simulate_and_test(A_tumor  = A[1:100,1:100],
                                 mu_tumor    = mu[1:100],
                                 num.sim     = 20,
                                 Samplesize  = 100,
                                 scaleFactor = 30,
                                 d.params    = c("Tumor"   = .3,
                                                 "Stromal" = .5,
                                                 "Immune"  = .1,
                                                 "Normal"  = .1),
                                 noise_setting = 1.5,
                                 seed          = 1234 )
```

```
## --------------
## iteration 1
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## --------------
## iteration 2
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## --------------
## iteration 3
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## --------------
## iteration 4
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## --------------
## iteration 5
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## --------------
## iteration 6
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## --------------
## iteration 7
## Samplesize 100
```

```
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 8
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 9
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 10
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 11
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 12
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 13
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 16
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 17
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 18
```

```
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 19
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 20
## Samplesize 100
## scaleFactor 30
## noise_setting 1.5
```

high noise

```r
simresult.b <- simulate_and_test(A_tumor  = A[1:100,1:100],
                                 mu_tumor   = mu[1:100],
                                 num.sim    = 20,
                                 Samplesize  = 100,
                                 scaleFactor = 30,
                                 d.params   = c("Tumor"   = .3,
                                                "Stromal" = .5,
                                                "Immune"  = .1,
                                                "Normal"  = .1),
                                 noise_setting = 10,
                                 seed          = 1234 )
```

```
## ---------------
## iteration 1
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 2
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 3
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 4
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 5
## Samplesize 100
## scaleFactor 30
```

```
## noise_setting 10
## ---------------
## iteration 6
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 7
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 8
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 9
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 10
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 11
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 12
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 13
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 16
## Samplesize 100
```

```
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 17
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 18
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 19
## Samplesize 100
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 20
## Samplesize 100
## scaleFactor 30
## noise_setting 10
```

```r
x.a <- melt(simresult.a[[1]])
x.b <- melt(simresult.b[[1]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
names(mydf) <- c("tissue","H.RMSE","condition")

p <- ggplot(data = mydf,
            aes(y = H.RMSE,
                x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```
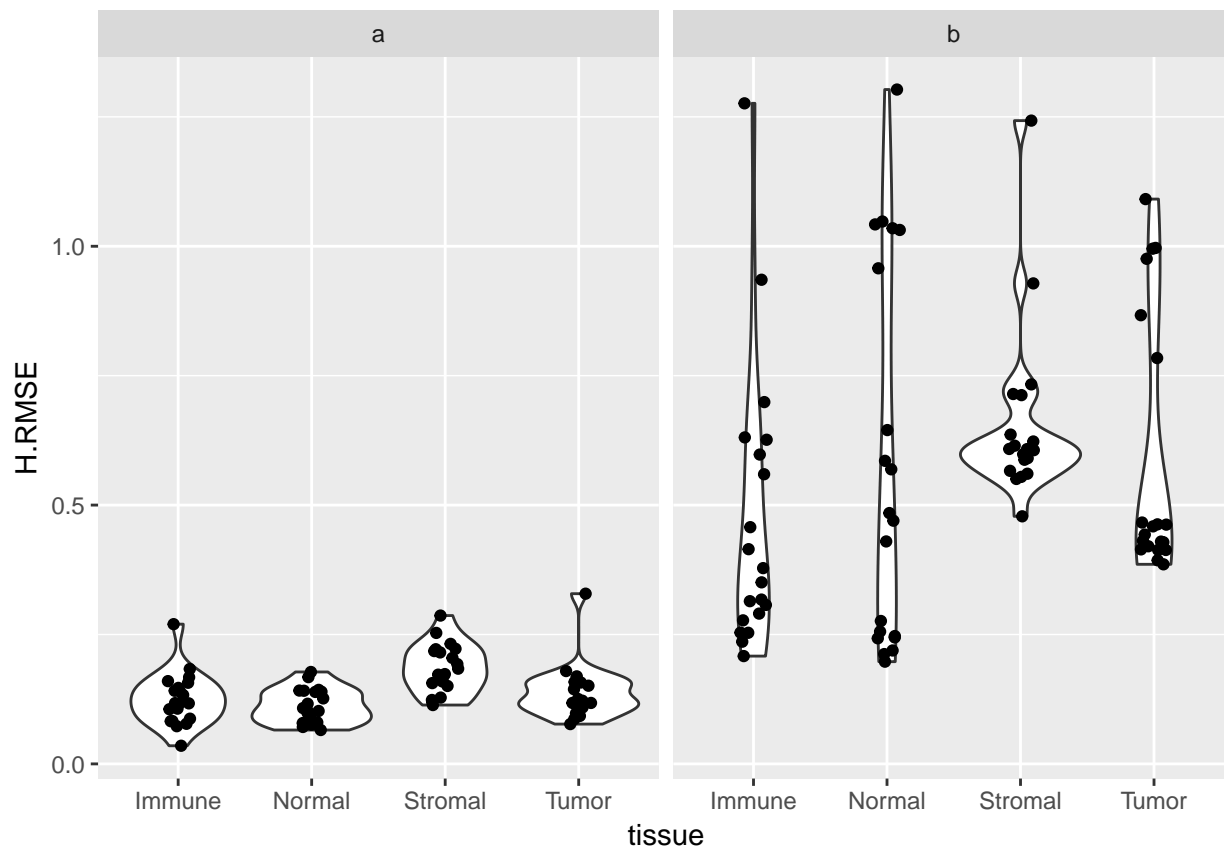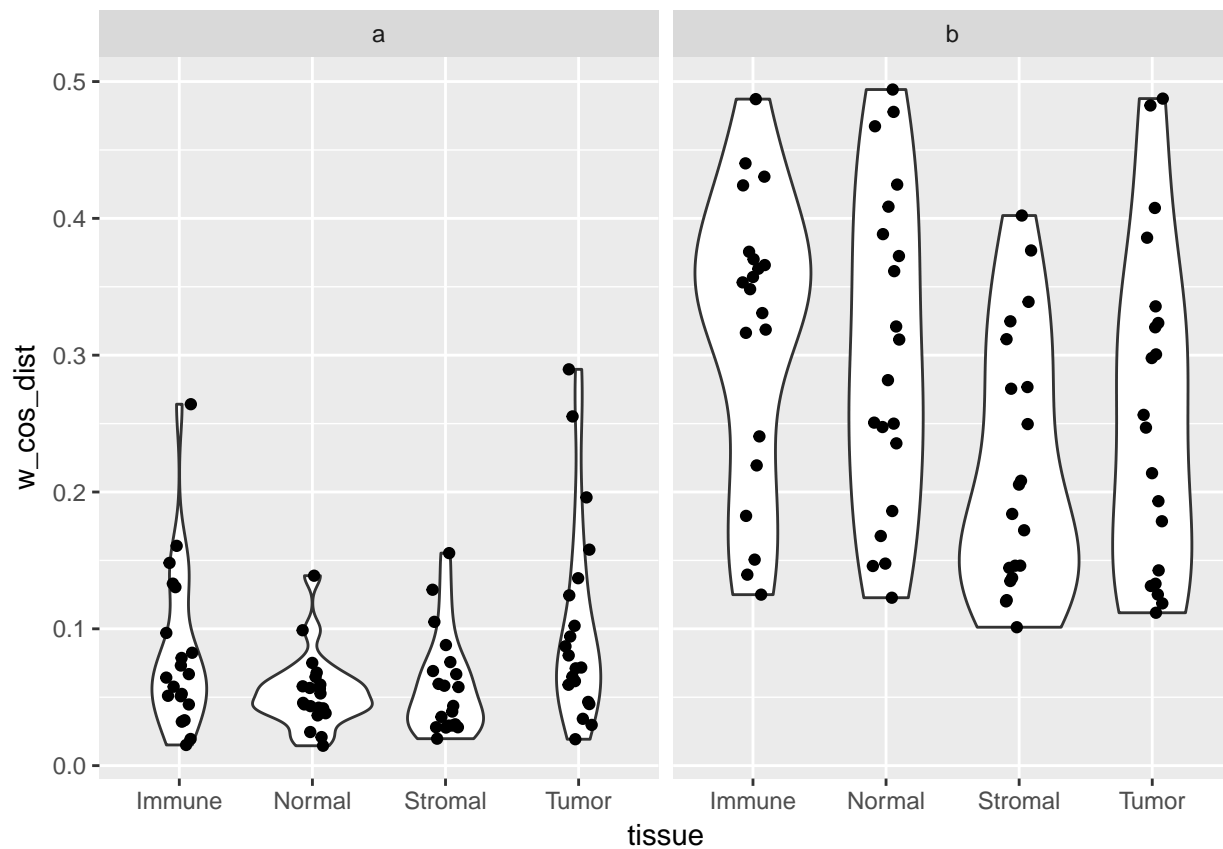
```
x.a <- melt(simresult.a[[4]])
x.b <- melt(simresult.b[[4]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
names(mydf) <- c("tissue","w_cos_dist","condition")

p <- ggplot(data = mydf,
            aes(y = w_cos_dist,
                x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```

low noise

```
simresult.b <- simulate_and_test(A_tumor   = A[1:100,1:100],
                                 mu_tumor   = mu[1:100],
                                 num.sim    = 20,
                                 Samplesize = 100,
                                 scaleFactor = 30,
                                 d.params   = c("Tumor"   = .3,
                                                "Stromal" = .5,
                                                "Immune"  = .1,
                                                "Normal"  = .1),
                                 noise_setting = 1.01,
                                 seed          = 1234 )
```

```
## ---------------
## iteration 1
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 2
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
```

```
## iteration 3
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 4
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 5
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 6
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 7
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 8
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 9
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 10
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 11
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 12
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 13
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
```

```
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 16
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 17
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 18
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 19
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 20
## Samplesize 100
## scaleFactor 30
## noise_setting 1.01
```

```r
x.a <- melt(simresult.a[[1]])
x.b <- melt(simresult.b[[1]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
names(mydf) <- c("tissue","H.RMSE","condition")

p <- ggplot(data = mydf,
            aes(y = H.RMSE,
                x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```
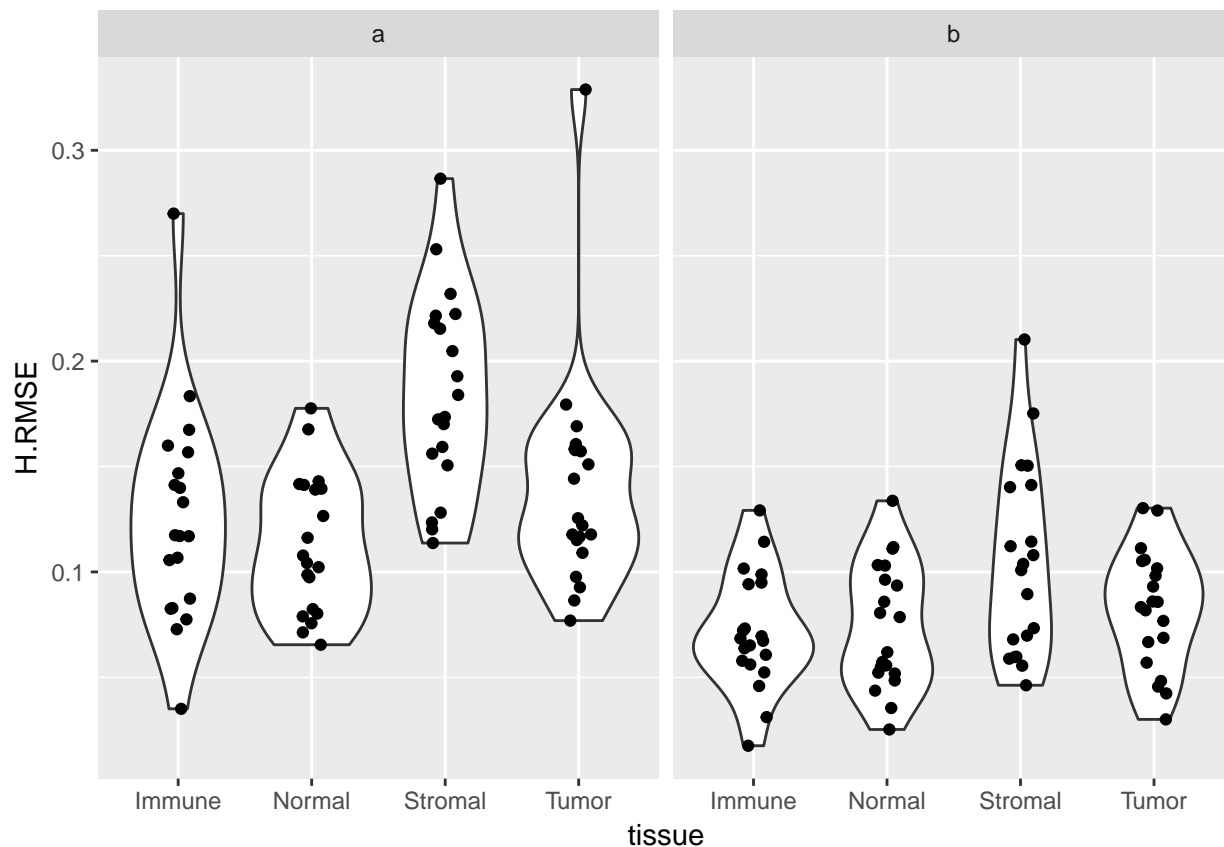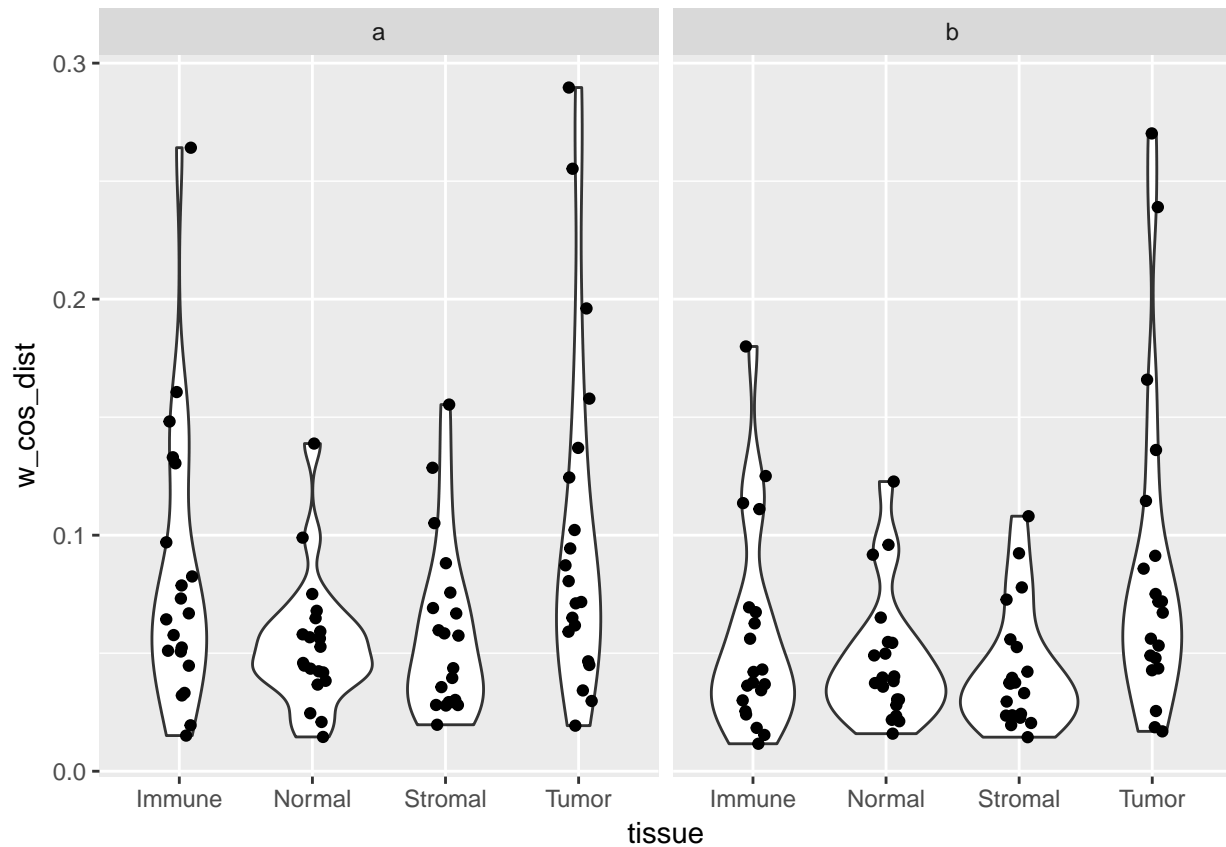
```r
x.a <- melt(simresult.a[[4]])
x.b <- melt(simresult.b[[4]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
names(mydf) <- c("tissue","w_cos_dist","condition")

p <- ggplot(data = mydf,
            aes(y = w_cos_dist,
                x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```

high rearrange

```
simresult.b <- simulate_and_test(A_tumor  = A[1:100,1:100],
                                 mu_tumor  = mu[1:100],
                                 num.sim   = 20,
                                 Samplesize = 100,
                                 scaleFactor = 200,
                                 d.params   = c("Tumor"   = .3,
                                                "Stromal" = .5,
                                                "Immune"  = .1,
                                                "Normal"  = .1),
                                 noise_setting = 1.5,
                                 seed          = 1234 )
```

```
## ---------------
## iteration 1
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 2
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
```

```
## iteration 3
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 4
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 5
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 6
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 7
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 8
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 9
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 10
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 11
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 12
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 13
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
```

```
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 16
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 17
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 18
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 19
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 20
## Samplesize 100
## scaleFactor 200
## noise_setting 1.5
```
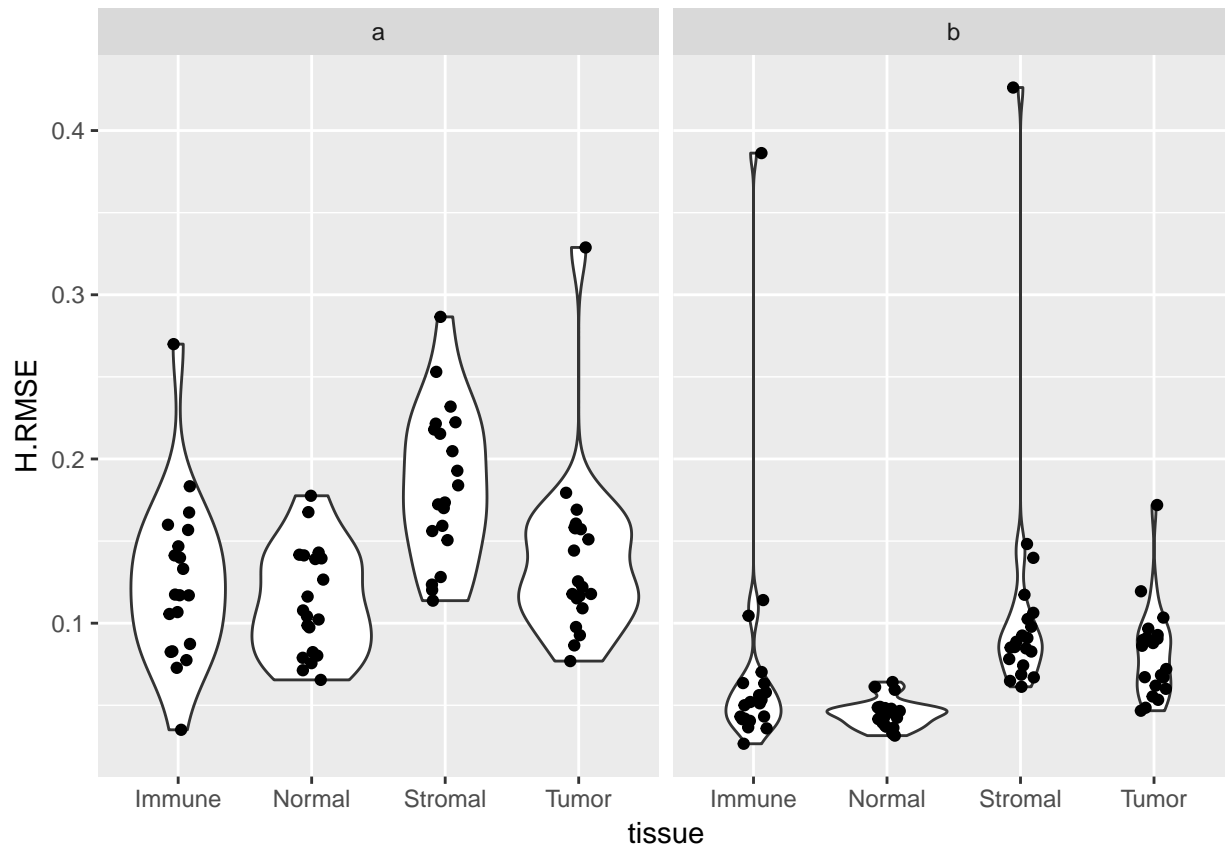
```r
x.a <- melt(simresult.a[[1]])
x.b <- melt(simresult.b[[1]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
names(mydf) <- c("tissue","H.RMSE","condition")

p <- ggplot(data = mydf,
            aes(y = H.RMSE,
                x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```
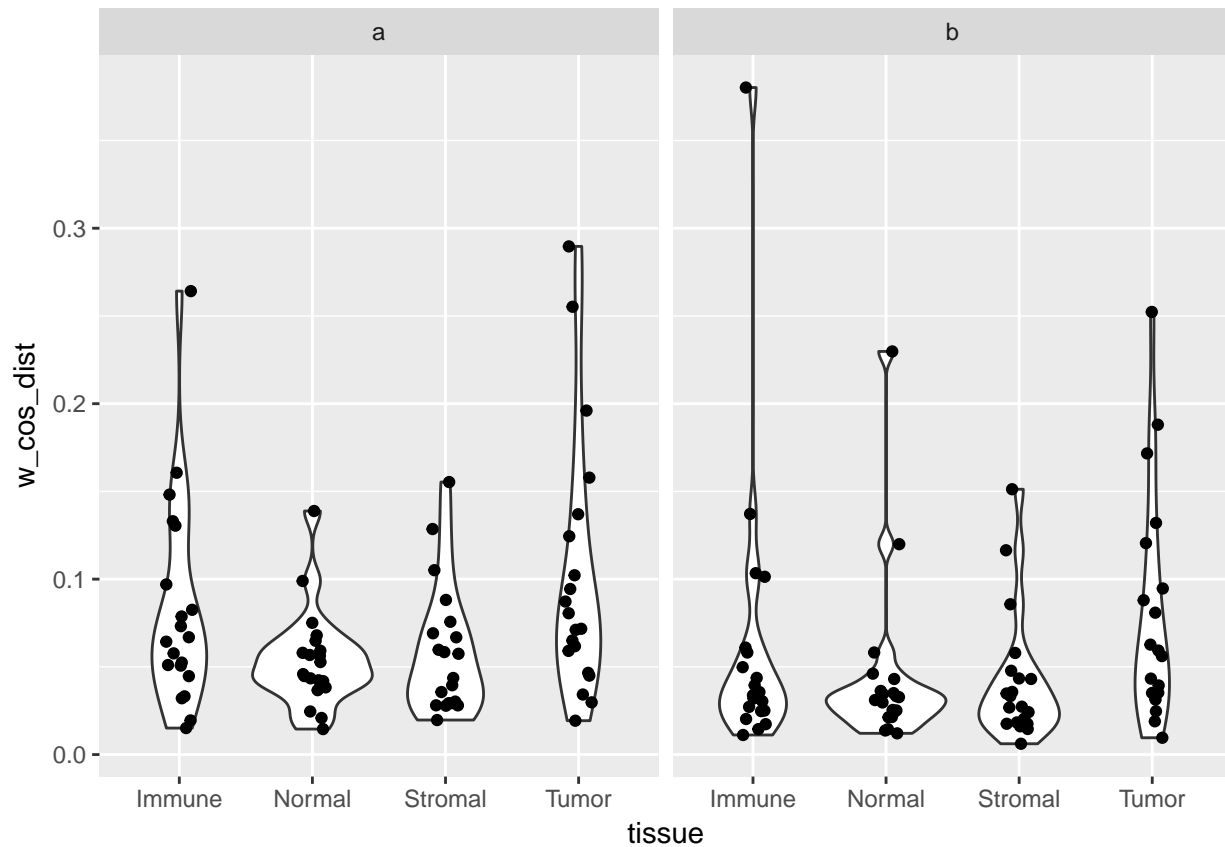
```
x.a <- melt(simresult.a[[4]])
x.b <- melt(simresult.b[[4]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
names(mydf) <- c("tissue","w_cos_dist","condition")

p <- ggplot(data = mydf,
            aes(y = w_cos_dist,
                x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```

low rearrange

```
simresult.b <- simulate_and_test(A_tumor   = A[1:100,1:100],
                                 mu_tumor   = mu[1:100],
                                 num.sim    = 20,
                                 Samplesize  = 100,
                                 scaleFactor = 2,
                                 d.params    = c("Tumor"   = .3,
                                                 "Stromal" = .5,
                                                 "Immune"  = .1,
                                                 "Normal"  = .1),
                                 noise_setting = 1.5,
                                 seed          = 1234 )
```

```
## ---------------
## iteration 1
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 2
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
```

```
## iteration 3
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 4
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 5
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 6
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 7
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 8
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 9
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 10
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 11
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 12
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 13
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
```

```
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 16
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 17
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 18
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 19
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 20
## Samplesize 100
## scaleFactor 2
## noise_setting 1.5
```
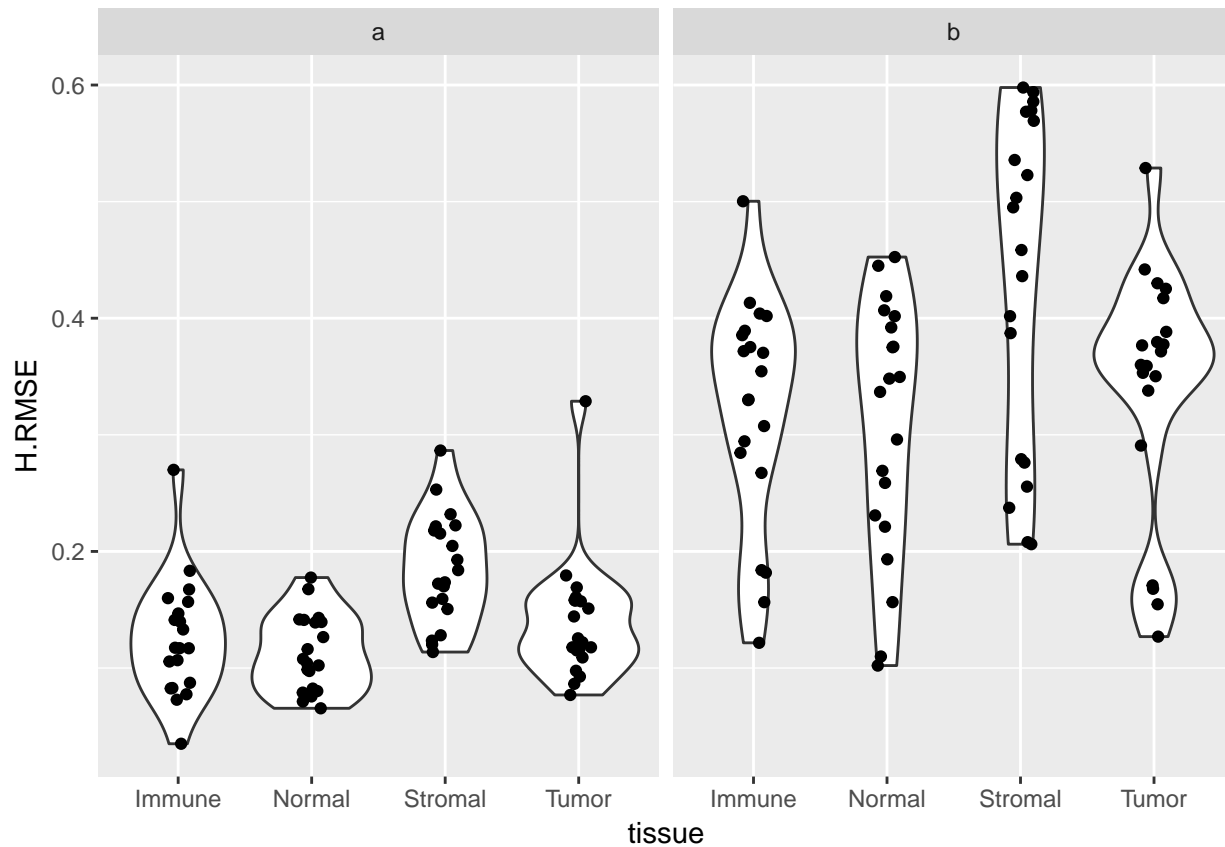
```r
x.a <- melt(simresult.a[[1]])
x.b <- melt(simresult.b[[1]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
names(mydf) <- c("tissue","H.RMSE","condition")

p <- ggplot(data = mydf,
           aes(y = H.RMSE,
               x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```
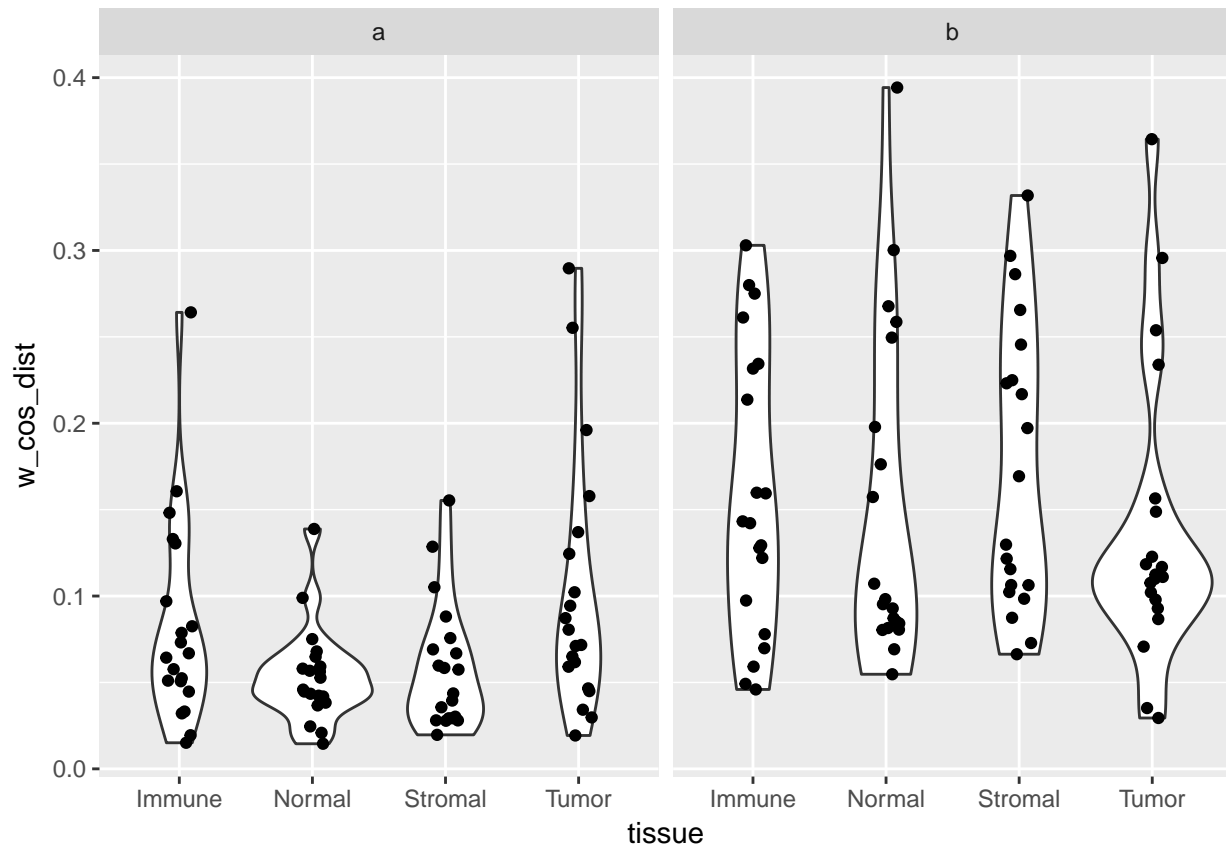
```
x.a <- melt(simresult.a[[4]])
x.b <- melt(simresult.b[[4]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
names(mydf) <- c("tissue","w_cos_dist","condition")

p <- ggplot(data = mydf,
            aes(y = w_cos_dist,
                x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```

low sample size

```r
simresult.b <- simulate_and_test(A_tumor  = A[1:100,1:100],
                                 mu_tumor  = mu[1:100],
                                 num.sim   = 100,
                                 Samplesize = 10,
                                 scaleFactor = 30,
                                 d.params   = c("Tumor"  = .3,
                                                "Stromal" = .5,
                                                "Immune"  = .1,
                                                "Normal"  = .1),
                                 noise_setting = 1.5,
                                 seed          = 1234 )
```

```
## ---------------
## iteration 1
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 2
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
```

```
## iteration 3
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 4
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 5
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 6
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 7
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 8
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 9
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 10
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 11
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 12
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 13
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
```

```
## ---------------
## iteration 14
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 15
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 16
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 17
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 18
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 19
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 20
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 21
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 22
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 23
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 24
## Samplesize 10
## scaleFactor 30
```

```
## noise_setting 1.5
## ---------------
## iteration 25
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 26
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 27
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 28
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 29
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 30
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 31
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 32
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 33
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 34
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 35
## Samplesize 10
```

```
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 36
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 37
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 38
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 39
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 40
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 41
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 42
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 43
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 44
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 45
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 46
```

```
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 47
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 48
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 49
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 50
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 51
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 52
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 53
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 54
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 55
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 56
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
```

```
## iteration 57
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 58
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 59
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 60
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 61
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 62
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 63
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 64
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 65
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 66
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 67
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
```

```
## ---------------
## iteration 68
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 69
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 70
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 71
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 72
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 73
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 74
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 75
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 76
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 77
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 78
## Samplesize 10
## scaleFactor 30
```

```
## noise_setting 1.5
## ---------------
## iteration 79
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 80
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 81
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 82
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 83
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 84
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 85
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 86
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 87
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 88
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 89
## Samplesize 10
```

```
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 90
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 91
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 92
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 93
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 94
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 95
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 96
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 97
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 98
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 99
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 100
```
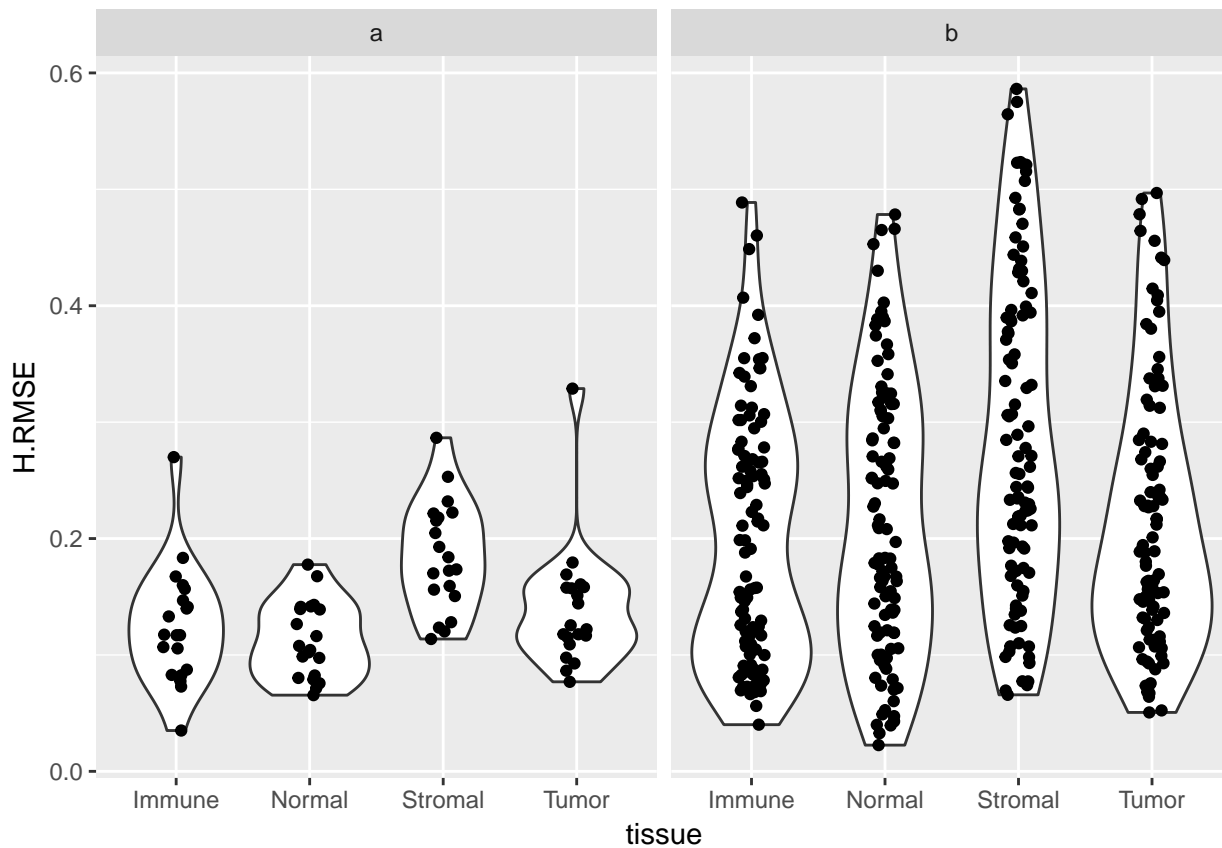
```
## Samplesize 10
## scaleFactor 30
## noise_setting 1.5
```

```r
x.a <- melt(simresult.a[[1]])
x.b <- melt(simresult.b[[1]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
names(mydf) <- c("tissue","H.RMSE","condition")

p <- ggplot(data = mydf,
            aes(y = H.RMSE,
                x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```



```r
x.a <- melt(simresult.a[[4]])
x.b <- melt(simresult.b[[4]])
x.a$condition <- "a"
x.b$condition <- "b"

mydf <- rbind(x.a,x.b)
mydf<- mydf[,-1]
```

```
names(mydf) <- c("tissue","w_cos_dist","condition")

p <- ggplot(data = mydf,
            aes(y = w_cos_dist,
                x= tissue))
p <- p + geom_violin()
p <- p + geom_jitter(width = 0.1)
p <- p + facet_grid(~condition)
print(p)
```