Demo

```
library(rnaGinesis)
```

```
## Setting options('download.file.method.GEOquery'='auto')
```

```
## Setting options('GEOquery.inmemory.gpl'=FALSE)
```

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

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

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

```
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 5
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 6
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 7
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 8
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 9
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 10
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 11
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 12
```

```
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 13
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 16
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 17
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 18
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 19
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
```

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

high noise

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

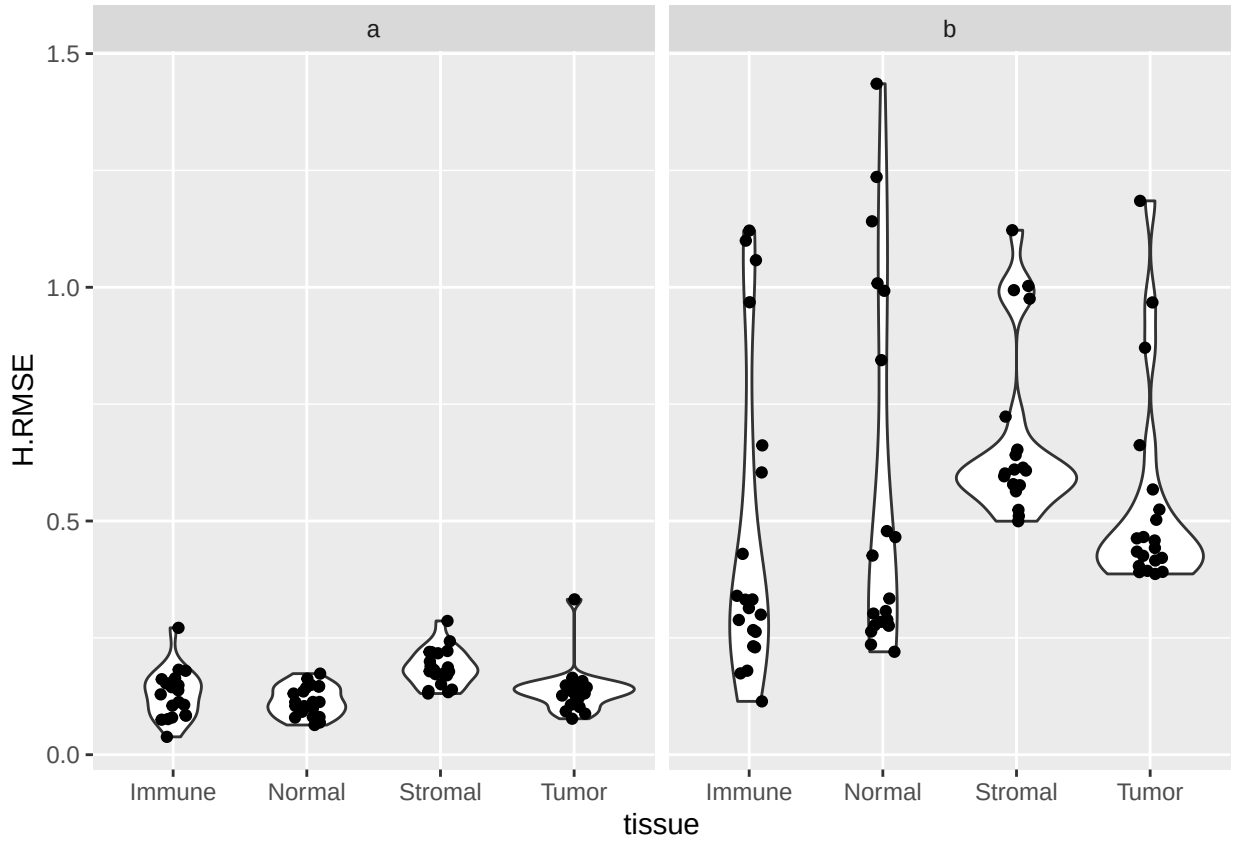
```
## ---------------
## iteration 1
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 2
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 3
## Samplesize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

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

```
## iteration 13
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 16
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 17
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 18
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 19
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 10
## ---------------
## iteration 20
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
```

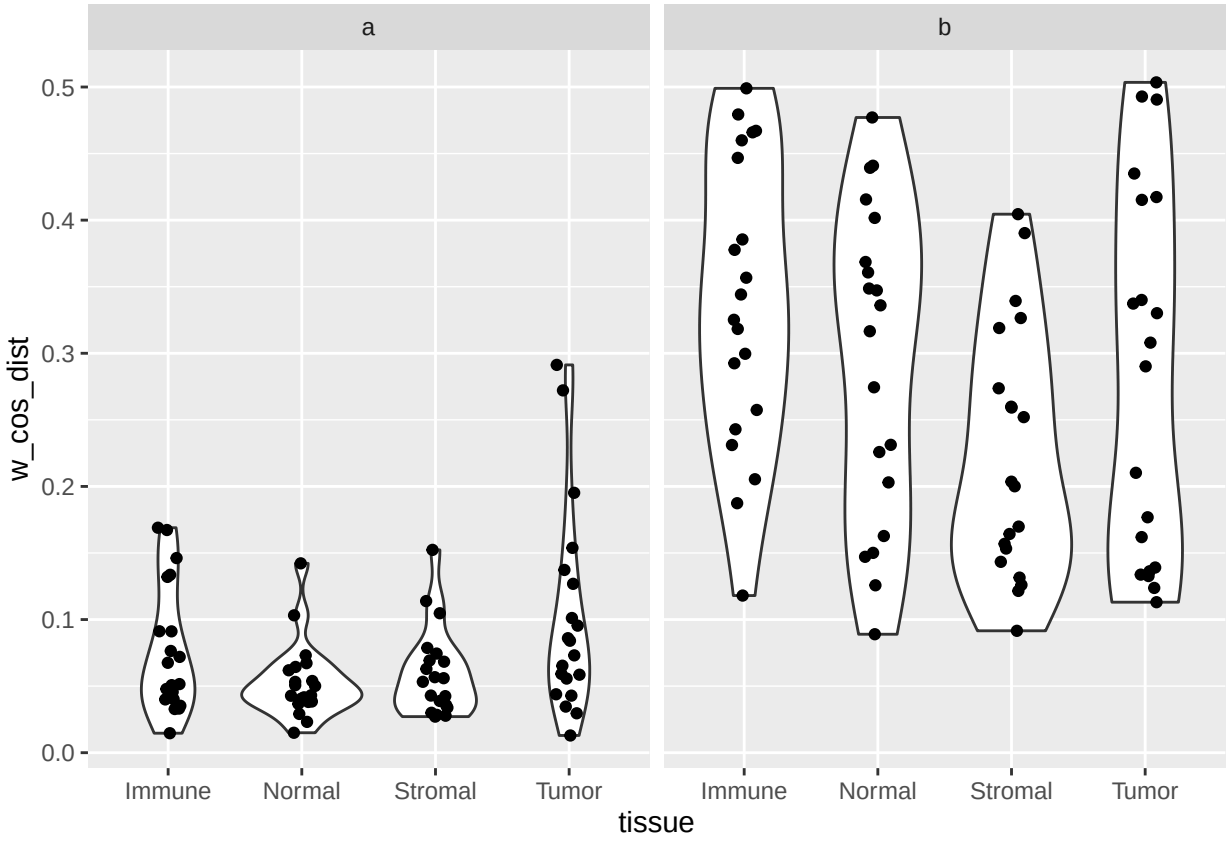
```
## noise_setting 10
```

```
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 = rep(30, 3),
                                 d.params    = c("Tumor"    = .3,
                                                 "Stromal" = .5,
                                                 "Immune"  = .1,
                                                 "Normal"  = .1),
                                 noise_setting = 1.01,
                                 seed          = 1234 )
```

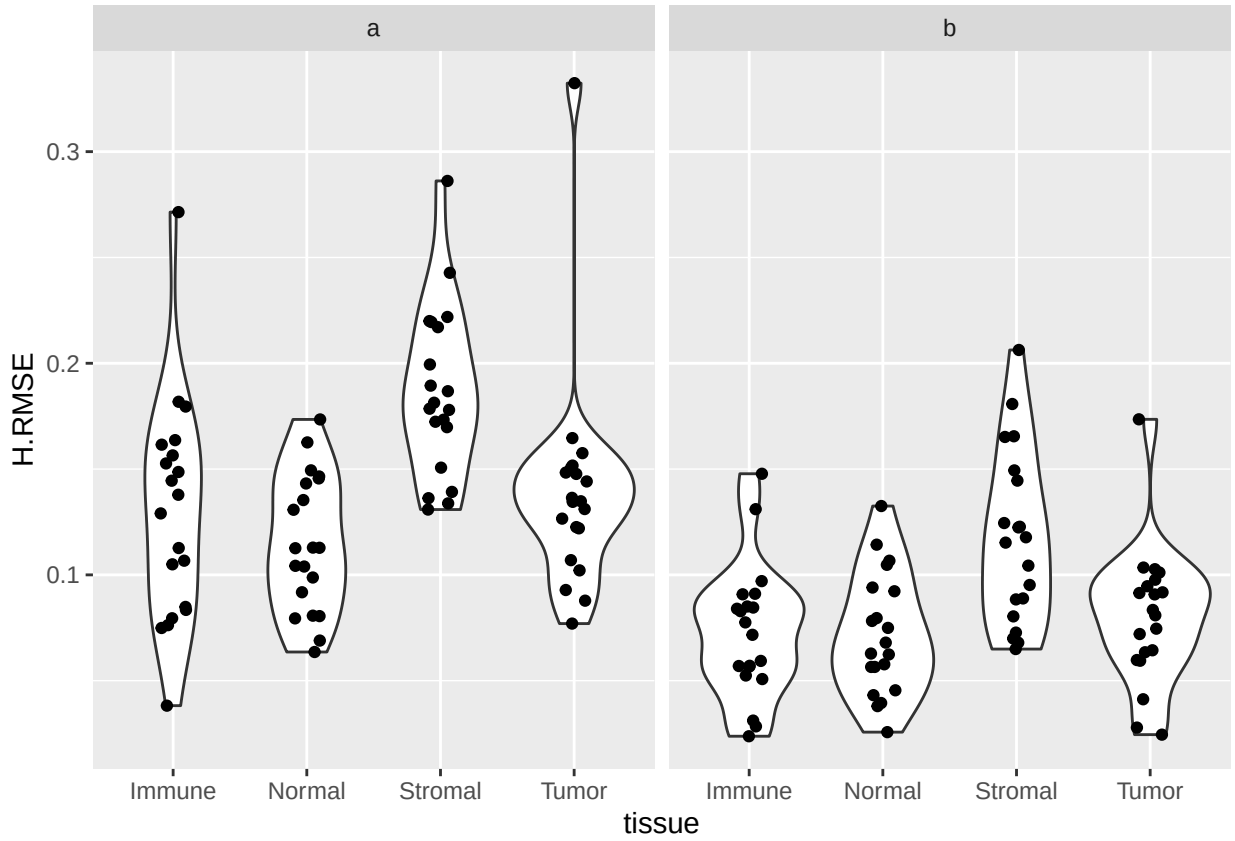
```
## ---------------
## iteration 1
```

```
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 2
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 3
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 4
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 5
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 6
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 7
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 8
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
```

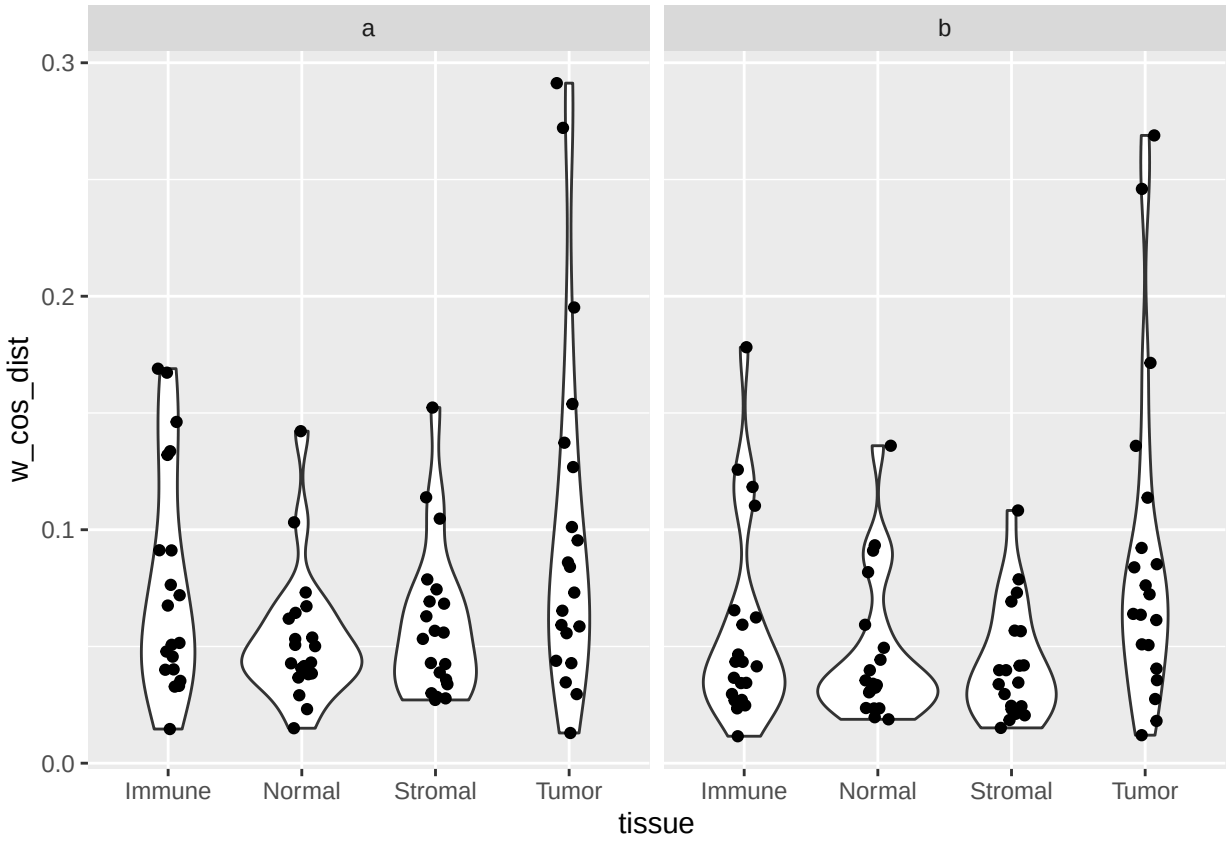
```
## ---------------
## iteration 9
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 10
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 11
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 12
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 13
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.01
## ---------------
## iteration 16
## Samplesize 100
## scaleFactor 30
## scaleFactor 30
```

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

```
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)
```



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 = rep(200, 3),
                                 d.params    = c("Tumor"   = .3,
                                                 "Stromal" = .5,
                                                 "Immune"  = .1,
                                                 "Normal"  = .1),
                                 noise_setting = 1.5,
                                 seed          = 1234 )
```

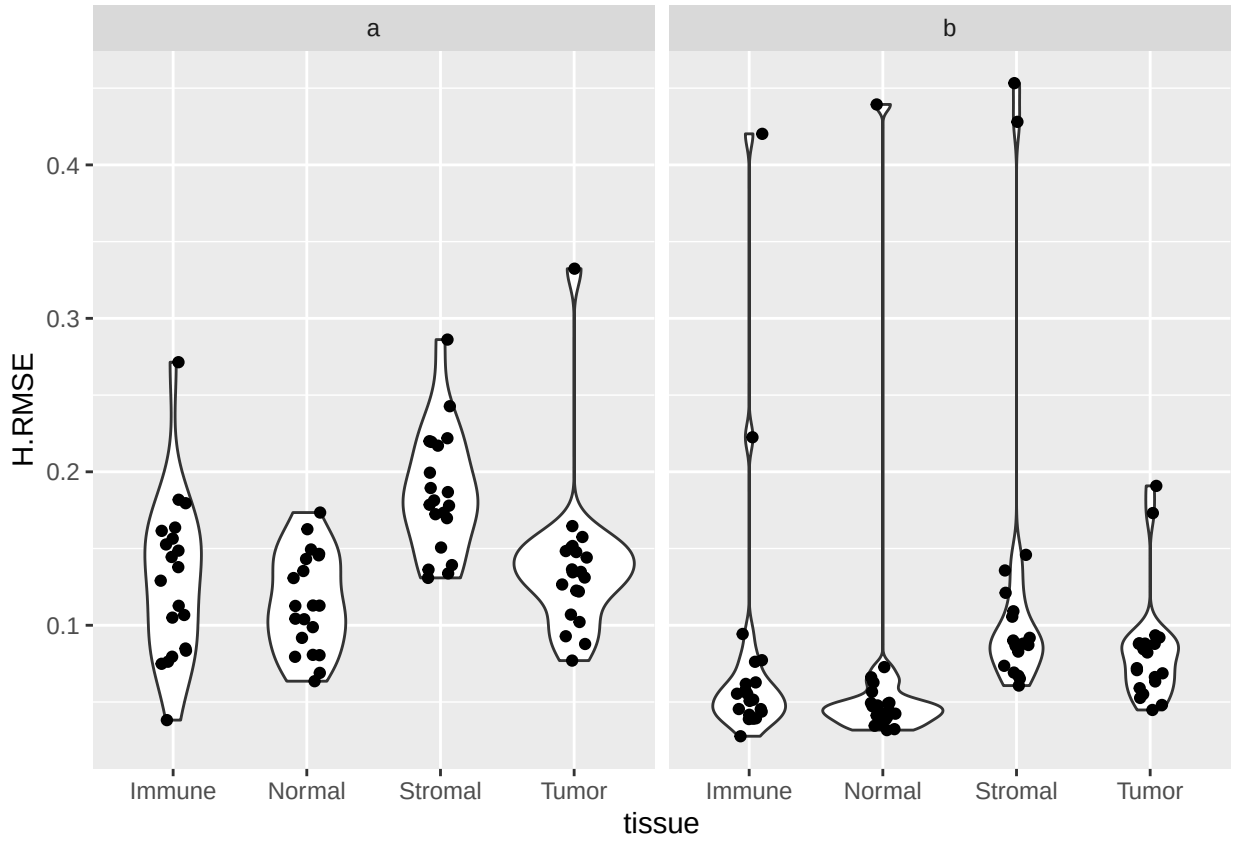
```
## ---------------
## iteration 1
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 2
## Samplesize 100
## scaleFactor 200
```

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

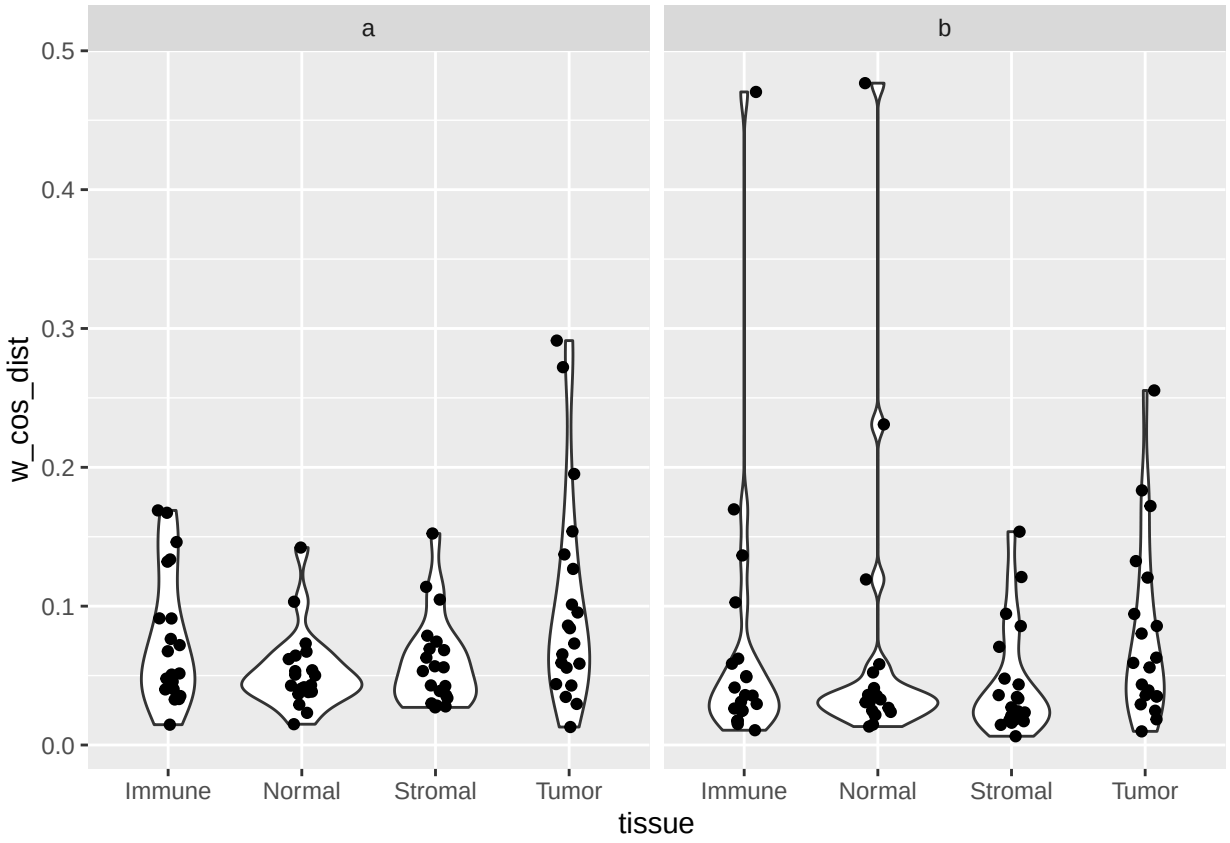
```
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 11
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 12
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 13
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 16
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 17
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
```

```
## ---------------
## iteration 18
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 19
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
## ---------------
## iteration 20
## Samplesize 100
## scaleFactor 200
## scaleFactor 200
## scaleFactor 200
## noise_setting 1.5
```

```
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 = rep(2, 3),
                                 d.params    = c("Tumor"   = .3,
                                                 "Stromal" = .5,
                                                 "Immune"  = .1,
                                                 "Normal"  = .1),
                                 noise_setting = 1.5,
                                 seed          = 1234 )
```

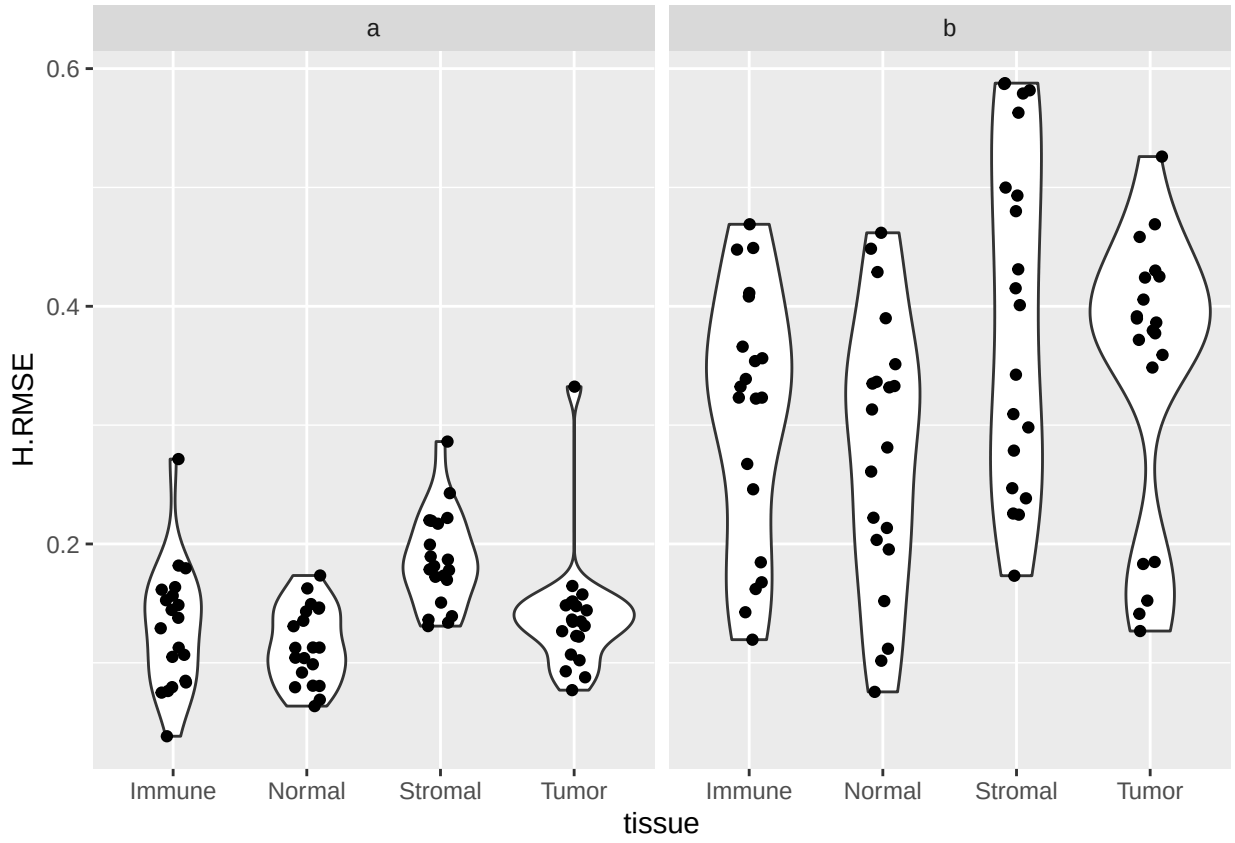
```
## ---------------
## iteration 1
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 2
## Samplesize 100
## scaleFactor 2
```

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

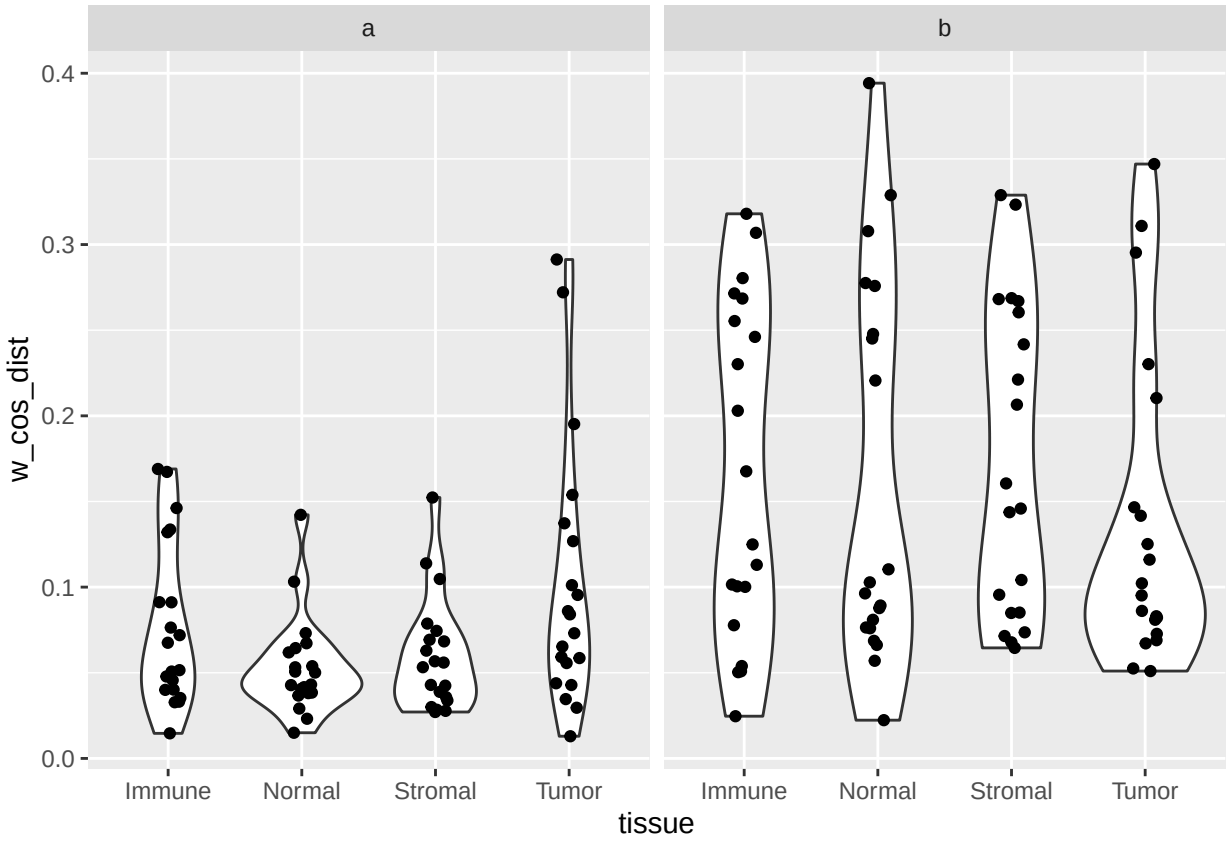
```
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 11
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 12
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 13
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 14
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 15
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 16
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 17
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
```

```
## ---------------
## iteration 18
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 19
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
## ---------------
## iteration 20
## Samplesize 100
## scaleFactor 2
## scaleFactor 2
## scaleFactor 2
## noise_setting 1.5
```

```
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

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

```
## ---------------
## iteration 1
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 2
## Samplesize 10
## scaleFactor 30
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## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 3
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 4
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 5
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 6
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 7
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 8
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 9
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 10
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## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 11
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 12
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 13
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 14
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 15
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 16
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 17
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 18
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 19
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 20
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 21
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 22
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 23
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 24
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 25
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
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## scaleFactor 30
## noise_setting 1.5
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## iteration 26
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 27
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 28
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 29
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 30
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 31
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 32
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 33
## Samplesize 10
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## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 34
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 35
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 36
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 37
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 38
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 39
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 40
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 41
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 42
## Samplesize 10
## scaleFactor 30
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## scaleFactor 30
## noise_setting 1.5
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## iteration 43
## Samplesize 10
## scaleFactor 30
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## scaleFactor 30
## noise_setting 1.5
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## iteration 44
## Samplesize 10
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## scaleFactor 30
## noise_setting 1.5
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## iteration 45
## Samplesize 10
## scaleFactor 30
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## noise_setting 1.5
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## iteration 46
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 47
## Samplesize 10
## scaleFactor 30
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## scaleFactor 30
## noise_setting 1.5
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## iteration 48
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
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## noise_setting 1.5
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## iteration 49
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 50
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## noise_setting 1.5
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## iteration 51
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## noise_setting 1.5
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## iteration 52
## Samplesize 10
## scaleFactor 30
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## scaleFactor 30
## noise_setting 1.5
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## iteration 53
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## noise_setting 1.5
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## iteration 54
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## noise_setting 1.5
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## iteration 55
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
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## noise_setting 1.5
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## iteration 56
## Samplesize 10
## scaleFactor 30
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## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 57
## Samplesize 10
## scaleFactor 30
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## noise_setting 1.5
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## iteration 58
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## noise_setting 1.5
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## iteration 59
## Samplesize 10
## scaleFactor 30
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## noise_setting 1.5
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## iteration 60
## Samplesize 10
## scaleFactor 30
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## noise_setting 1.5
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## iteration 61
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## noise_setting 1.5
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## iteration 62
## Samplesize 10
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## noise_setting 1.5
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## iteration 63
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 64
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## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 65
## Samplesize 10
## scaleFactor 30
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## noise_setting 1.5
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## iteration 66
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 67
## Samplesize 10
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## scaleFactor 30
## noise_setting 1.5
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## iteration 68
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## noise_setting 1.5
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## iteration 69
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## noise_setting 1.5
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## iteration 70
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## scaleFactor 30
## scaleFactor 30
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## noise_setting 1.5
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## iteration 71
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 72
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 73
## Samplesize 10
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## noise_setting 1.5
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## iteration 74
## Samplesize 10
## scaleFactor 30
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## scaleFactor 30
## noise_setting 1.5
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## iteration 75
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 76
## Samplesize 10
## scaleFactor 30
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## noise_setting 1.5
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## iteration 77
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## noise_setting 1.5
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## iteration 78
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 79
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
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## scaleFactor 30
## noise_setting 1.5
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## iteration 80
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 81
## Samplesize 10
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## noise_setting 1.5
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## iteration 82
## Samplesize 10
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## noise_setting 1.5
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## iteration 83
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## noise_setting 1.5
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## iteration 84
## Samplesize 10
## scaleFactor 30
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## noise_setting 1.5
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## iteration 85
## Samplesize 10
## scaleFactor 30
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## scaleFactor 30
## noise_setting 1.5
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## iteration 86
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 87
## Samplesize 10
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## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 88
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
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## noise_setting 1.5
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## iteration 89
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## noise_setting 1.5
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## iteration 90
## Samplesize 10
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## scaleFactor 30
## noise_setting 1.5
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## iteration 91
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## noise_setting 1.5
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## iteration 92
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## noise_setting 1.5
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## iteration 93
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## scaleFactor 30
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## noise_setting 1.5
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## iteration 94
## Samplesize 10
## scaleFactor 30
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## scaleFactor 30
## noise_setting 1.5
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## iteration 95
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 96
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 97
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 98
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
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## iteration 99
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
## ---------------
## iteration 100
## Samplesize 10
## scaleFactor 30
## scaleFactor 30
## scaleFactor 30
## noise_setting 1.5
```
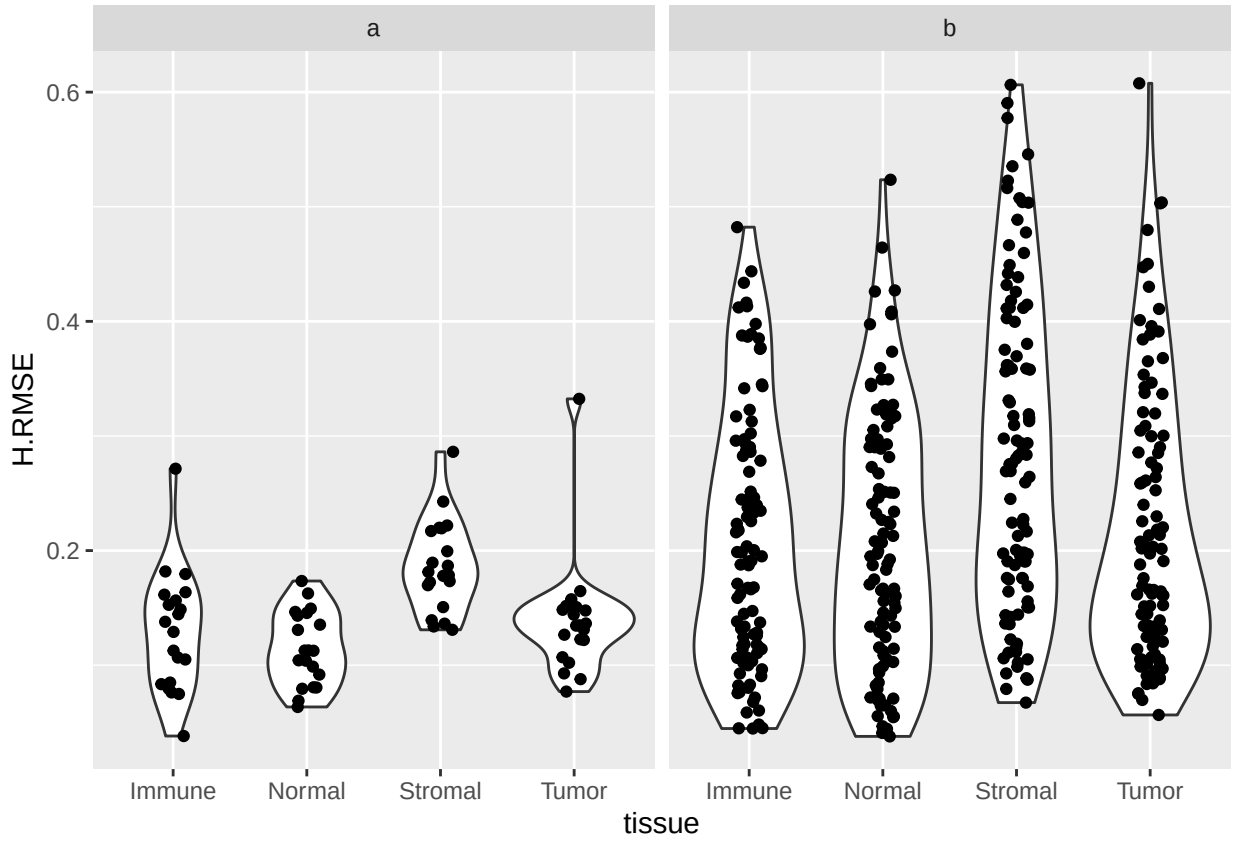
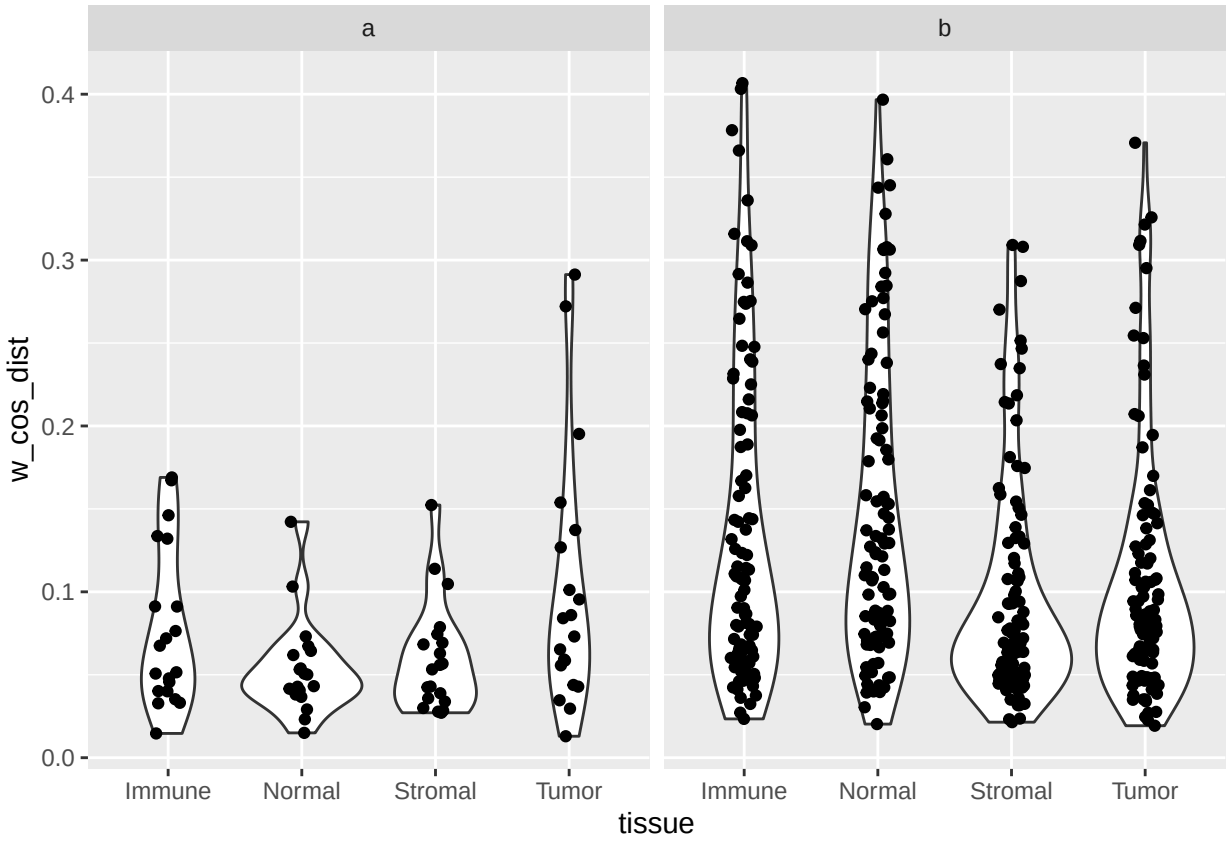

```
x.a <- melt(simresult.a[[1]])
x.b <- melt(simresult.b[[1]])
x.a$condition <- "a"
x.b$condition <- "b"

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)
```


a
b
0.4
0.3
0.2
0.1
0.0
w_cos_dist
Immune
Normal
Stromal
Tumor
Immune
Normal
Stromal
Tumor
tissue