Journal

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```
devtools::load_all()
library(WASABI)
library(BNPmix)
library(mcclust)
library(salso)
library(superheat)
library(ggplot2)
```

Test Binder.Rcpp function. Aug 01

1. Check the accuracy of the function.

```
cls1 <- matrix(sample(0:3,25,replace = TRUE), nrow = 1)
cls2 <- matrix(sample(0:6,25,replace = TRUE), nrow = 1)
salso_loss <- salso::binder(cls1,cls2)
print(salso_loss)
```

```
## [1] 0.3296
```

```
rcpp_loss <- Binder_compute_Rcpp(cls1,cls2, 4, 7)
print(rcpp_loss)
```

```
## [1] 0.3296
```

2. Compare the speed.

```
library(microbenchmark)
microbenchmark(
  salso = salso::binder(cls1,cls2),
  cpp = Binder_compute_Rcpp(cls1,cls2, 4, 7),
  times = 100L
)
```

```
## Warning in microbenchmark(salso = salso::binder(cls1, cls2), cpp =
## Binder_compute_Rcpp(cls1, : less accurate nanosecond times to avoid potential
## integer overflows
```

```
## Unit: microseconds
##   expr   min    lq     mean median     uq    max neval
##  salso 9.020 9.307 10.00974  9.471 9.7375 29.725   100
##    cpp 3.198 3.403  3.76913  3.608 3.8130 13.284   100
```