

Project1

Nikhil Sakhamuri

March 26, 2019

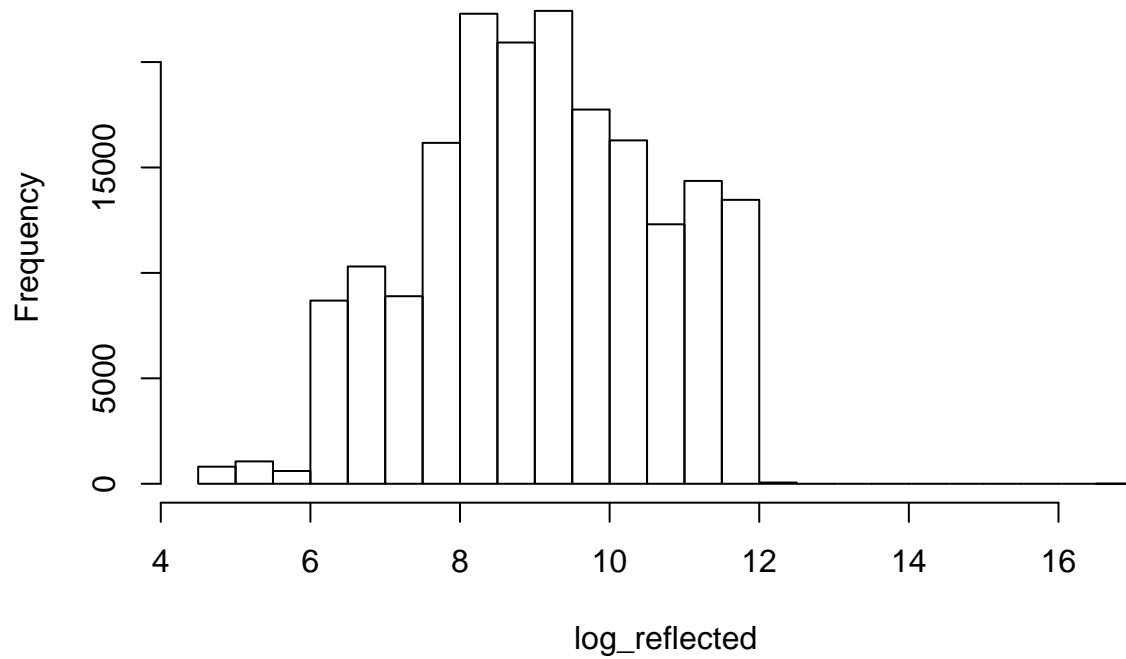
```
library(readr)
library(dplyr)

## Warning: package 'dplyr' was built under R version 3.4.4
##
## Attaching package: 'dplyr'
## The following objects are masked from 'package:stats':
##
##   filter, lag
## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union
## ##5a.
df = read_csv("../clean_data/all_data_na.csv")

## Warning: Missing column names filled in: 'X1' [1]
## Parsed with column specification:
## cols(
##   X1 = col_integer(),
##   result_time = col_datetime(format = ""),
##   epoch = col_integer(),
##   nodeid = col_integer(),
##   parent = col_integer(),
##   voltage = col_double(),
##   depth = col_integer(),
##   humidity = col_double(),
##   humid_temp = col_double(),
##   humid_adj = col_double(),
##   hamatop = col_double(),
##   hamabot = col_double()
## )
refl_no_zeros = df$hamatop[df$hamatop != 0]
log_reflected = log(refl_no_zeros)
inc_no_zeros = df$hamabot[df$hamabot != 0]
log_incident = log(inc_no_zeros)
```

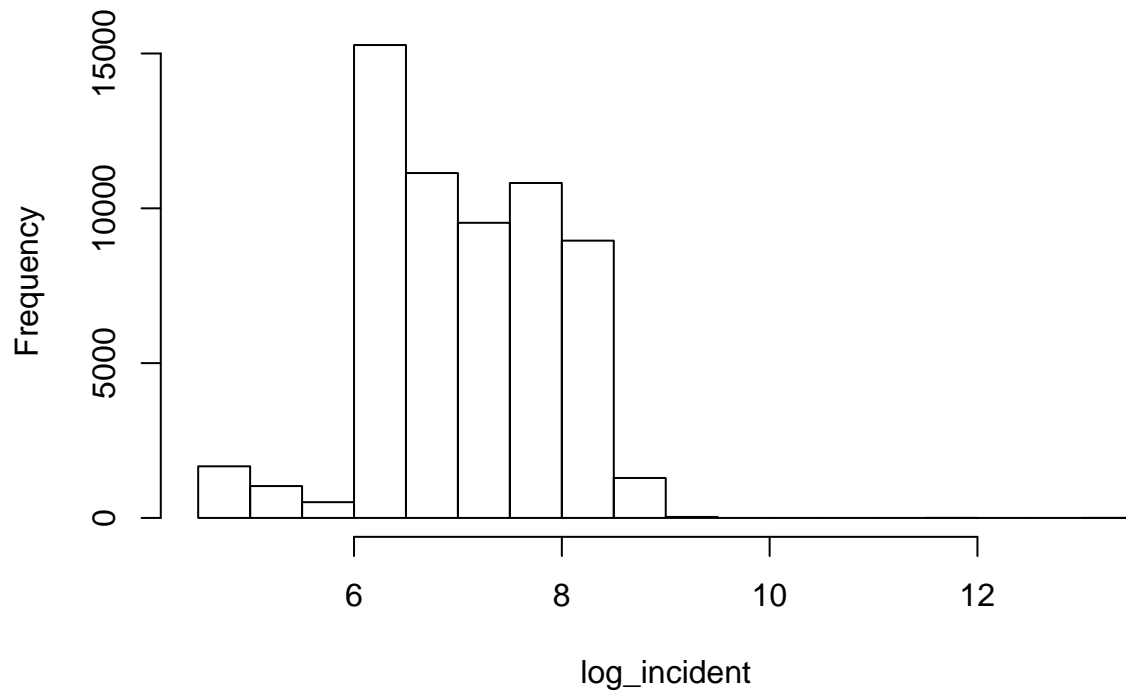
```
hist(log_reflected)
```

Histogram of log_reflected



```
hist(log_incident)
```

Histogram of log_incident



###4.

```

library(ggplot2)
library(magrittr)

net_df = read_csv("../clean_data/net_data_na.csv")

## Warning: Missing column names filled in: 'X1' [1]

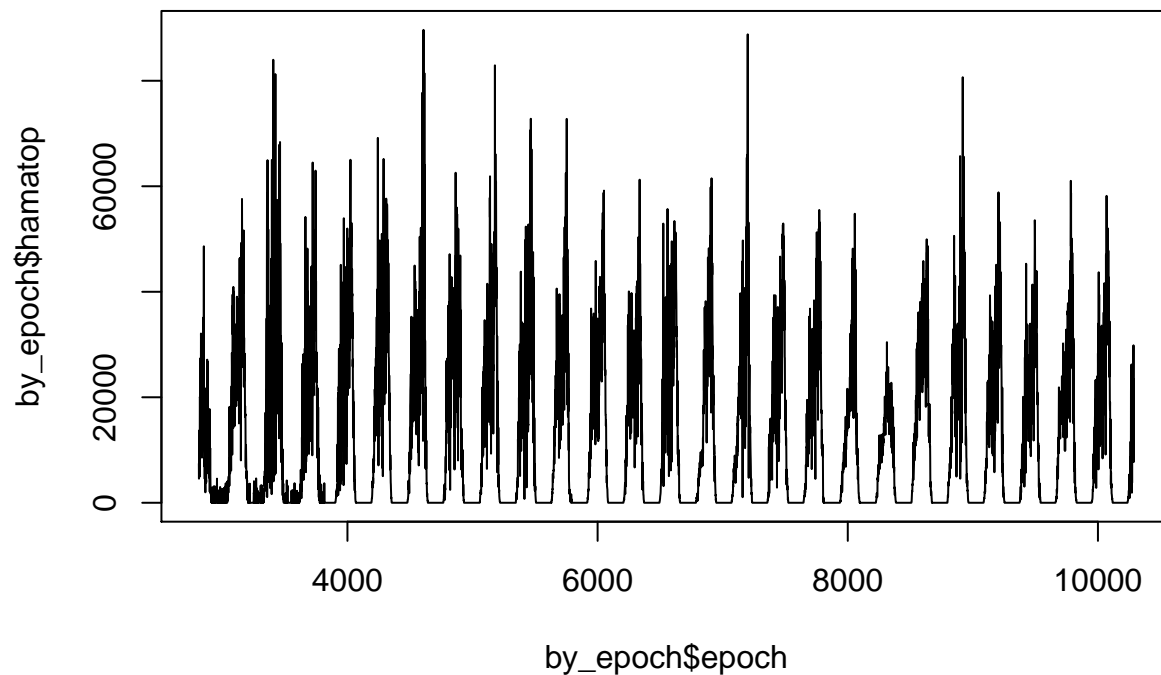
## Parsed with column specification:
## cols(
##   X1 = col_integer(),
##   result_time = col_datetime(format = ""),
##   epoch = col_integer(),
##   nodeid = col_integer(),
##   parent = col_integer(),
##   voltage = col_double(),
##   depth = col_integer(),
##   humidity = col_double(),
##   humid_temp = col_double(),
##   humid_adj = col_double(),
##   hamatop = col_double(),
##   hamabot = col_double()
## )

by_epoch = net_df[,c(3,6,8,9,11,12)] %>% group_by(epoch) %>% summarise_each(funs(mean))

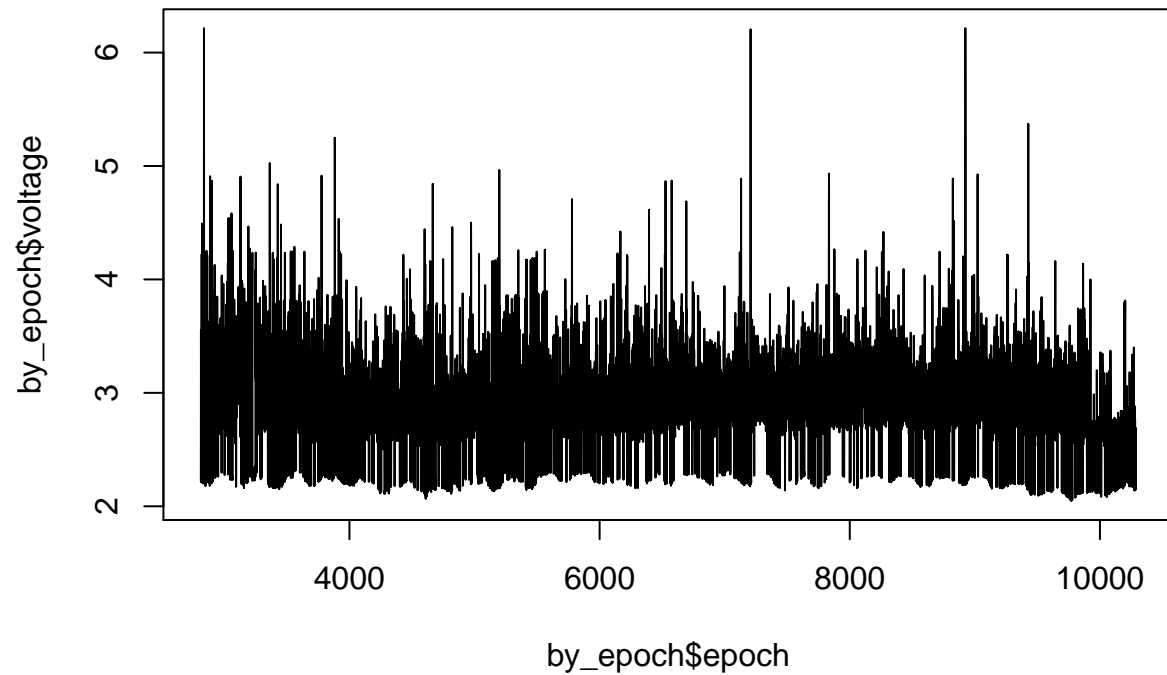
## `summarise_each()` is deprecated.
## Use `summarise_all()`, `summarise_at()` or `summarise_if()` instead.
## To map `funs` over all variables, use `summarise_all()`

plot(by_epoch$epoch, by_epoch$hamatop, type = 'l')

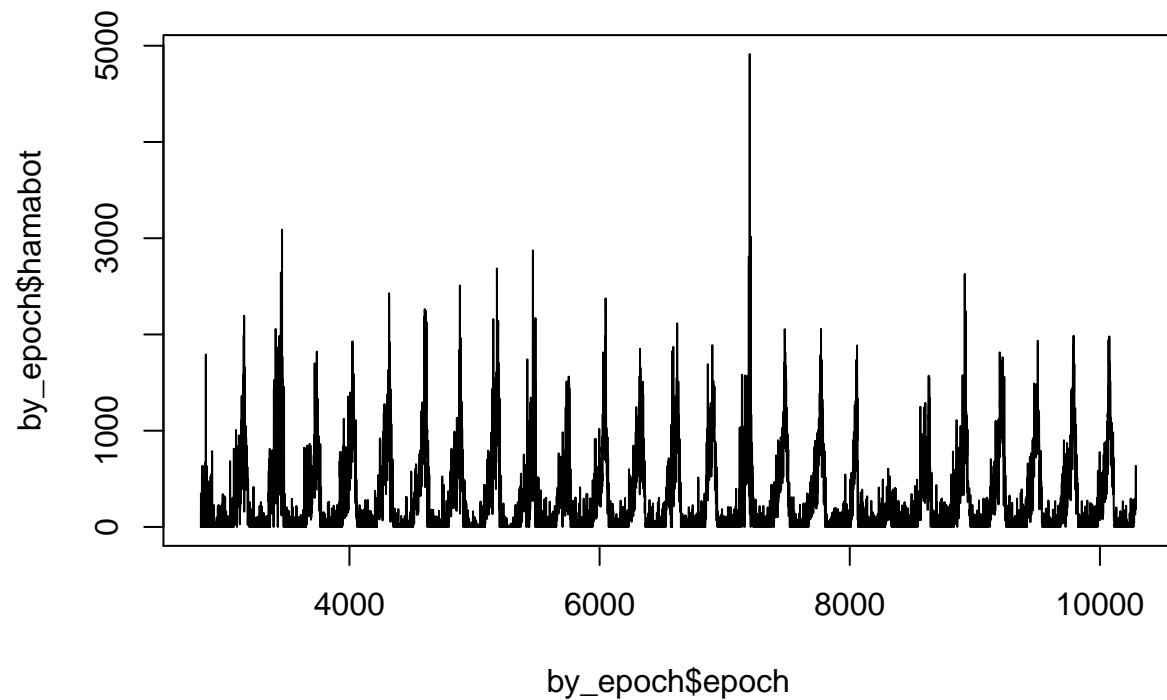
```



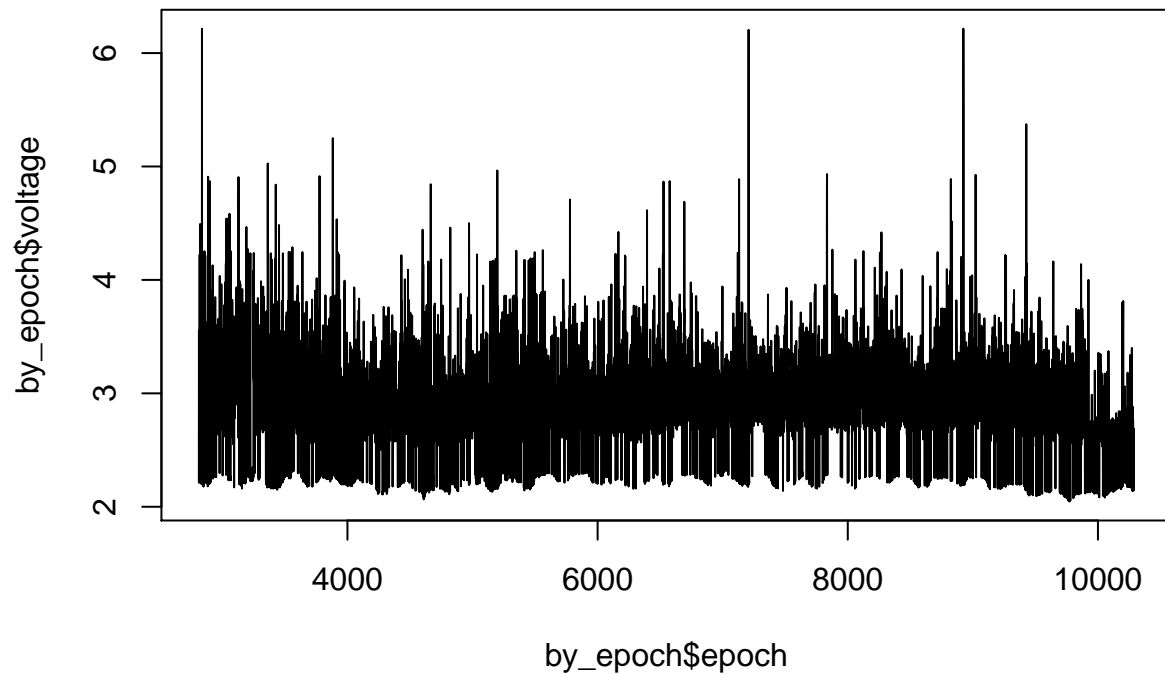
```
plot(by_epoch$epoch, by_epoch$voltage, type = 'l')
```



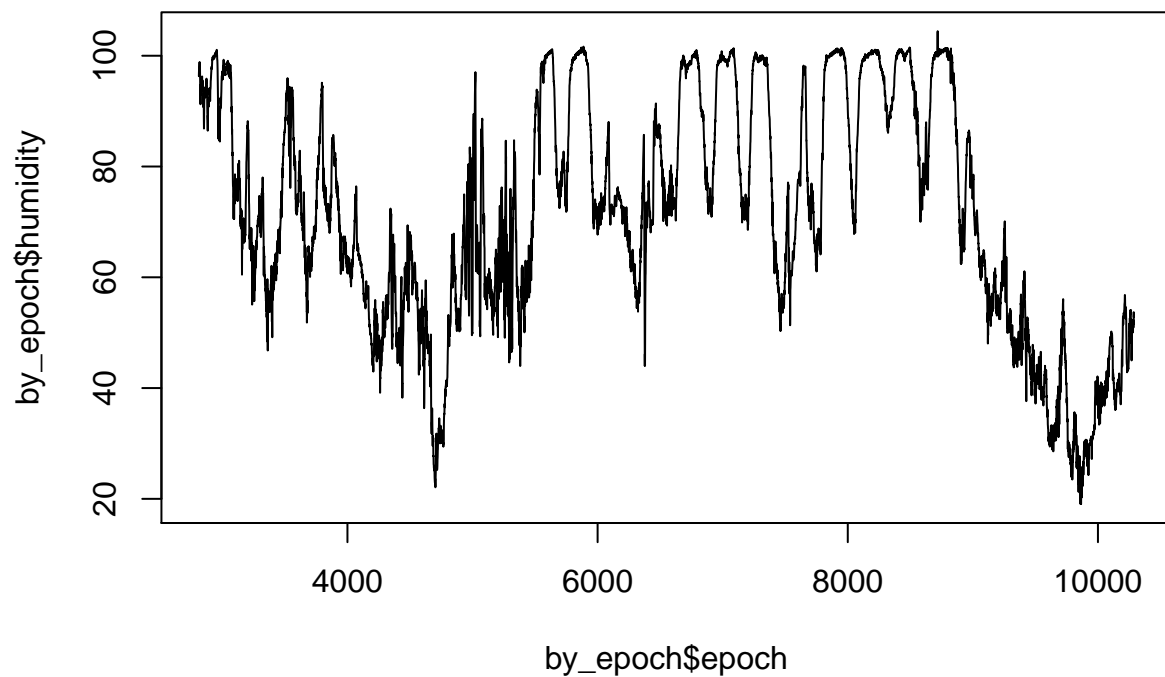
```
plot(by_epoch$epoch, by_epoch$hamabot, type = 'l')
```



```
plot(by_epoch$epoch, by_epoch$voltage, type = 'l')
```



```
plot(by_epoch$epoch, by_epoch$humidity, type = 'l')
```



```
volt_outlier_rej = net_df %>% filter(voltage <= 3 & voltage >= 2.0)
```

```
## Warning: package 'bindrcpp' was built under R version 3.4.4
```

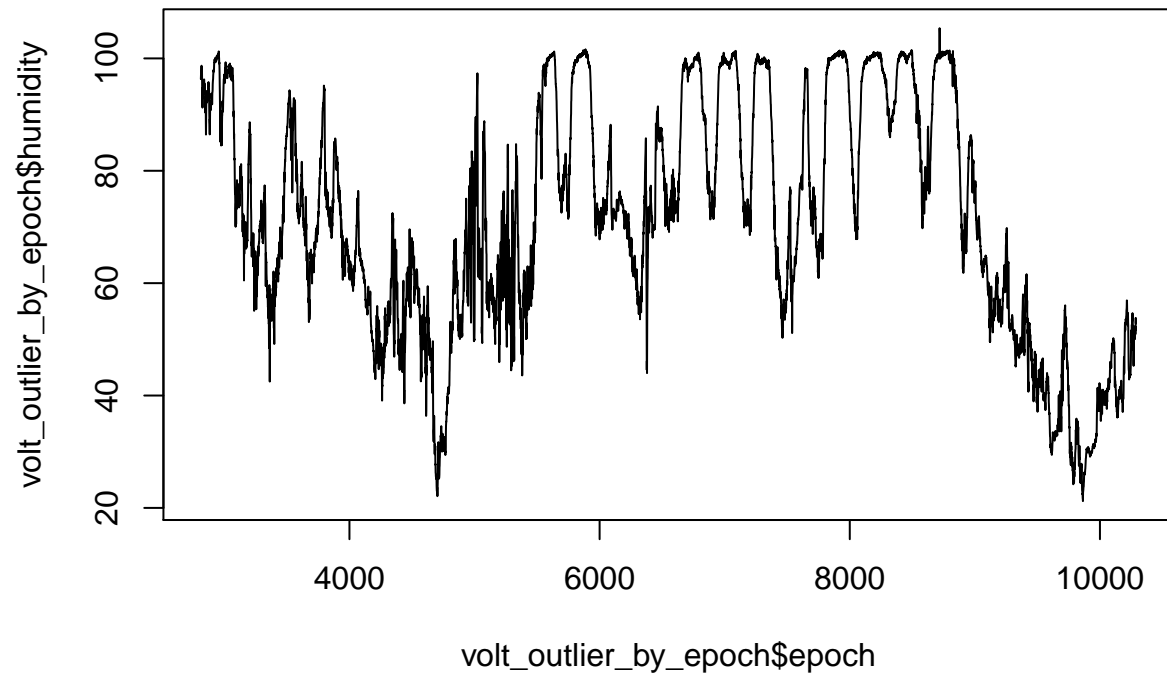
```
volt_outlier_by_epoch = volt_outlier_rej[,c(3,6,8,9,11,12)] %>% group_by(epoch) %>% summarise_each(funs
```

```
## `summarise_each()` is deprecated.
```

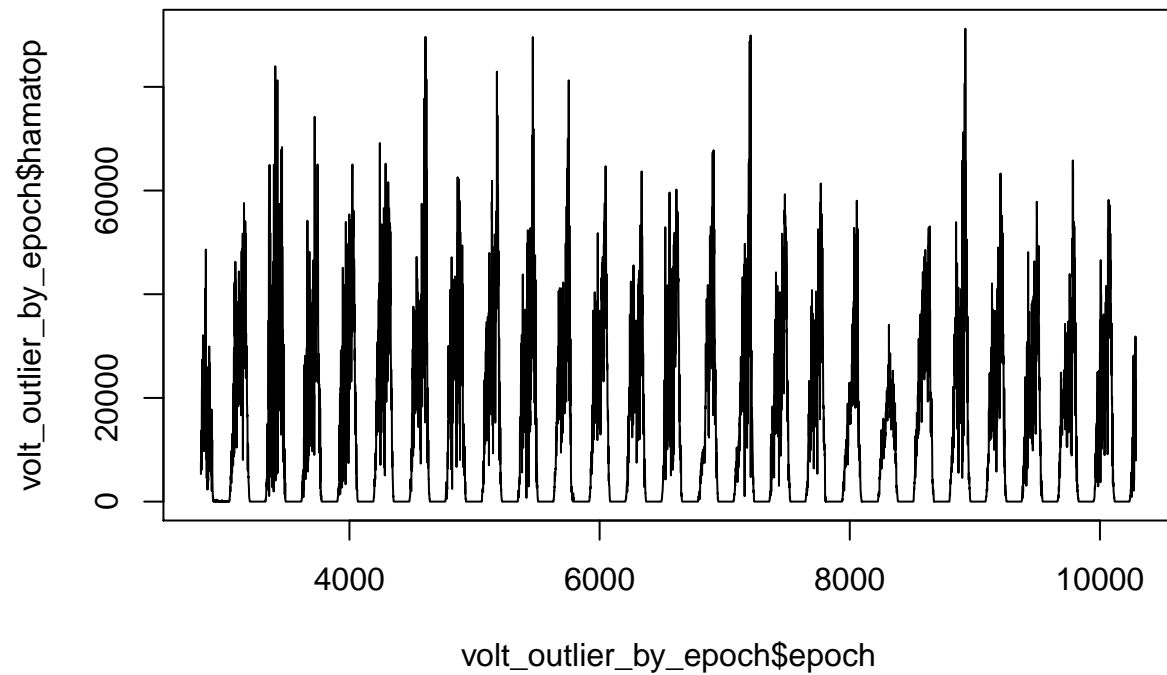
```
## Use `summarise_all()`, `summarise_at()` or `summarise_if()` instead.
```

```
## To map `funs` over all variables, use `summarise_all()`
```

```
plot(volt_outlier_by_epoch$epoch, volt_outlier_by_epoch$humidity, type = 'l')
```



```
plot(volt_outlier_by_epoch$epoch, volt_outlier_by_epoch$hamatop, type = 'l')
```



```
plot(volt_outlier_by_epoch$epoch, volt_outlier_by_epoch$hamabot, type = 'l')
```

