

# hawks

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hawks

reference:

- Cannon, et al., Stat2, chapter 07, example 7.11

Import the data.

```
data <- read.csv("HawkTail2.csv", header=TRUE)
head(data)
```

```
##   Tail_RT Tail_SS
## 1     219     157
## 2     221     130
## 3     235     164
## 4     230     144
## 5     212     136
## 6     243     158
```

```
dim(data)
```

```
## [1] 577  2
```

Organize the data.

```
tail_RT <- data$Tail_RT
summary(tail_RT)
```

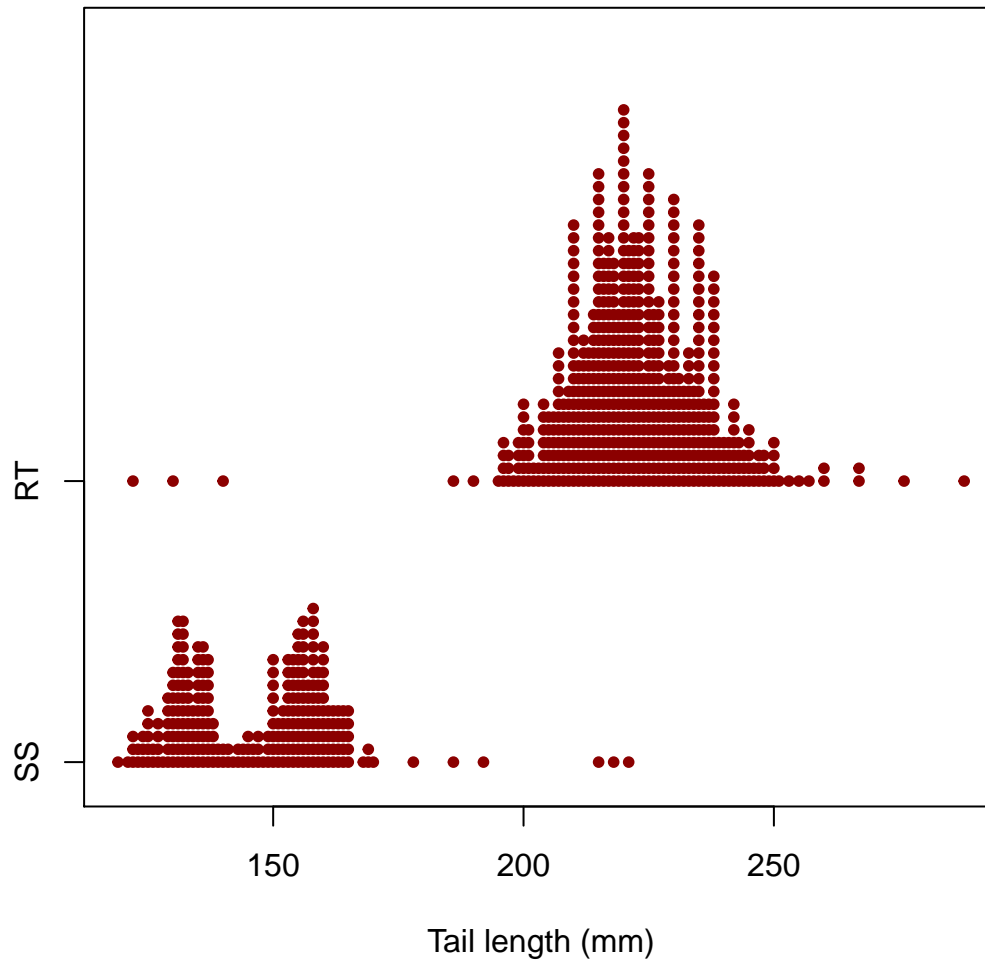
```
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  122.0  214.0   221.0   222.1  230.0   288.0
```

```
tail_SS <- data$Tail_SS
tail_SS <- tail_SS[!is.na(tail_SS)] # remove RAs
summary(tail_SS)
```

```
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  119.0  133.0   150.0   146.7  158.0   221.0
```

Stripchart.

```
stripchart(list(tail_SS, tail_RT),
            at=c(1, 20), pch=20, ylim=c(0, 50),
            method="stack", col="darkred",
            group.names=c("SS", "RT"),
            xlab="Tail length (mm)")
```



Wilcoxon test.

```
wilcox.test(tail_RT, tail_SS,
             conf.int=TRUE, alternative ="two.sided")
```

```
##
## Wilcoxon rank sum test with continuity correction
##
## data: tail_RT and tail_SS
## W = 149300, p-value < 2.2e-16
## alternative hypothesis: true location shift is not equal to 0
## 95 percent confidence interval:
## 74.00000 78.00004
## sample estimates:
## difference in location
## 76.00005
```