

RSD

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RSD calculation (AIG)

This document explains how RSD was calculated based on the means of medians across repetition and the SD across all trials.

This first line loads the data frame, selects and displays the relevant columns. Repetition of a stimulus is indicated in column “repl”.

```
results <- read.table("../dfs/results_preprocessed.txt", sep = "\t", header = T)
results <- results %>% select(file, subject,
                             interval_type, cluster, triplet, repl, AccOff_V)
head(results)
```

```
##           file subject interval_type cluster triplet repl AccOff_V
## 1 mgbaka10255      1         LE2A      CV        4     1    205.1
## 2 mgbaka10727      1         LE2A      CV        4     2    190.0
## 3 mgbaka20325      1         LE2A      CV        4     3    185.8
## 4 mgbaka20791      1         LE2A      CV        4     4    178.7
## 5 mgbaka30412      1         LE2A      CV        4     5    215.7
## 6 mgbaka30876      1         LE2A      CV        4     6    192.5
```

The next line of code selects the variables that should remain in the output. Hence we collapse the DV (AccOff_V) across repetition by calculating the median.

```
data.median <- results %>% group_by(triplet, interval_type, cluster, subject) %>%
  dplyr::summarise(
    median = median(AccOff_V),
    sd = sd(AccOff_V)
  )
head(data.median)
```

```
## # A tibble: 6 x 6
## # Groups:   triplet, interval_type, cluster [2]
##   triplet interval_type cluster subject median    sd
##   <int>   <fct>         <fct>   <int>   <dbl> <dbl>
## 1     1 CC2A          CCCV      1     244 12.6
## 2     1 CC2A          CCCV      2     339  8.77
## 3     1 CC2A          CCCV      3     257 10.5
## 4     1 CC2A          CCCV      4     297 11.4
## 5     1 CC2A          CCV       1     204 17.7
## 6     1 CC2A          CCV       2     289 11.4
```

In the next step we collapse the medians resulting from the previous lines of code across subject and cluster size. Hence, the remaining variables are triplet and interval_type. The mean and the SD of these medians were calculated.

```
data.mean <- data.median %>% group_by(triplet, interval_type) %>%
  dplyr::summarise(
    mean = mean(median),
    sd = mean(sd)) %>% ungroup()
head(data.mean)
```

```
## # A tibble: 6 x 4
##   triplet interval_type mean    sd
##   <int> <fct>      <dbl> <dbl>
## 1      1 CC2A        239  11.9
## 2      1 LE2A        301  14.9
## 3      1 RE2A        181  11.1
## 4      2 CC2A        249  15.0
## 5      2 LE2A        316  18.5
## 6      2 RE2A        179  14.3
```

Finally, the RSD is calculated from the means and SDs resulting from collapsing across subjects and cluster sizes.

```
data.mean$rsd <- 100*data.mean$sd/data.mean$mean
head(data.mean)
```

```
## # A tibble: 6 x 5
##   triplet interval_type mean    sd   rsd
##   <int> <fct>      <dbl> <dbl> <dbl>
## 1      1 CC2A        239  11.9  5.00
## 2      1 LE2A        301  14.9  4.97
## 3      1 RE2A        181  11.1  6.12
## 4      2 CC2A        249  15.0  6.02
## 5      2 LE2A        316  18.5  5.87
## 6      2 RE2A        179  14.3  7.96
```