nMDS and PERMANOVA

ENVX2001 Applied Statistical Methods

Semester 1, 2026

Readings

Quinn, G. P. and Keough, M. J. (2002, 2023) *Experimental Design and Data Analysis for Biologists.* Cambridge University Press (1st and 2nd edition).

Han, S. Y., Filippi, P., Román Dobarco, M., Harianto, J., Crowther M. S., and Bishop, T. F. A. (2023). Multivariate analysis for soil science. In *'Encyclopedia of Soils in the Environment (Second Edition)'*. (Ed. M. J. Goss and M. Oliver) pp. 499-508. Academic Press: Oxford.

Learning outcomes

At the end of this practical students should be able to:

1. Calculate a similarity matrix or transformed data
2. Plot an ordination using Non-metric Multidimensional Scaling (nMDS)
3. Statistically test differences between factors using a ANOSIM and PERMANOVA
4. Determine what contributes most to the differences using a SIMPER analysis

Working directory Set the working directory for this tutorial and ensure you copy all data into this directory and save your code into the directory. setwd("C:/Users/.")

Exercise 1: Copepod Communities in Norway

It is thought that copepod (a marine invertebrate) assemblages in Solbergstrand, Norway are affected by nutrient levels. There were 4 spatially independent sites for each treatment in;

a) Control sites (C),

b) Low nutrient sites(L) and

c) High nutrient sites (H).

We want to know if there is a pattern in species assemblages using nMDS, whether there is a statistically significant difference between treatments using ANOSIM and what species contribute to these differences via SIMPER.

First you need to load the packages vegan and MASS and file CopepodData.csv

CODE

```
library(vegan)
```

OUTPUT

```
Loading required package: permute
```

CODE

```
library(MASS)

CopepodData <- read.csv("data/CopepodData.csv", header = TRUE)
```

Now the data is entered, let's apply a 4th root transformation. This will take the emphasis from the more common species. Other transformations include the square root transformation and the log transformation. Other transformations included square root, presence/absence and log. You can also standardise the data if there are differences in the amount of sampling (which there isn't here).

CODE

```
TransCopepodData <- (CopepodData[,2:20])^(1/4)
```

Now let's generate a Bray-Curtis dissimilarity matrix on this transformed data and perform a nMDS. Bray-Curtis similarities are useful for this kind of data, as they did not group sites by shared absences. For environmental data, a Euclidean distance would be more useful.

CODE

```
copepod.dis <- vegdist(TransCopepodData, method="bray")
```

Now let's look at the nMDS with labels for Community and take a note of the stress value (how well the ordination represents the data). A great stress value is <0.1, an OK stress value is between 0.1 and 0.2, and >0.2 is not so good. A stress greater than 0.3 is essentially arbitrary.

Next we plot the nMDS, labelling the sites with treatment.

CODE

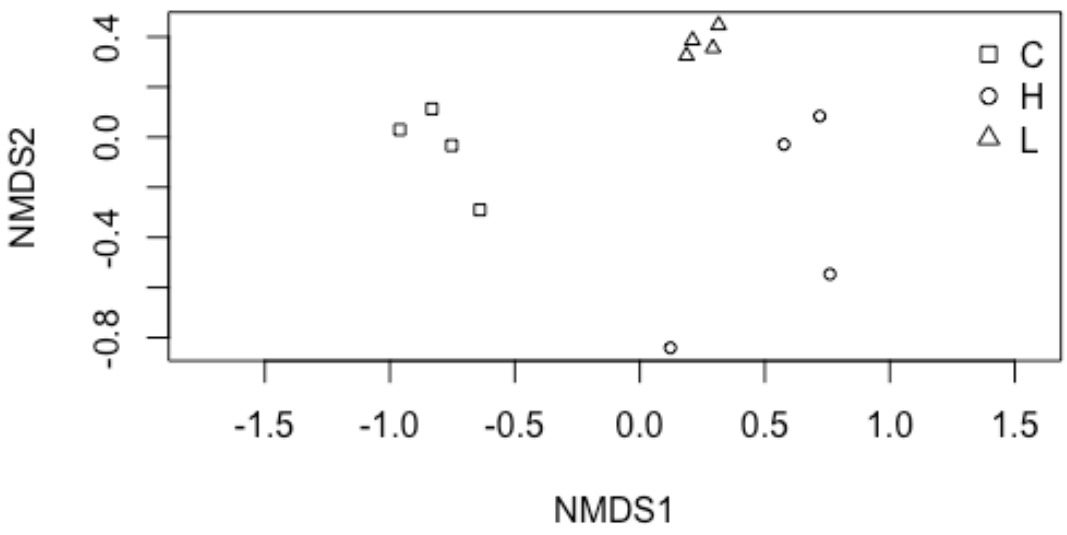
```
pchs<- c(0:2)
Copepod_Factor <- factor(CopepodData$Treatment)
nMDS_copepod <- metaMDS(TransCopepodData, distance="bray", k=2)
```

OUTPUT

```
Run 0 stress 0.1003895
Run 1 stress 0.09313703
... New best solution
... Procrustes: rmse 0.06920839  max resid 0.1880542
Run 2 stress 0.09313703
... New best solution
... Procrustes: rmse 1.398556e-05  max resid 2.298995e-05
... Similar to previous best
Run 3 stress 0.1213244
Run 4 stress 0.09313703
... Procrustes: rmse 1.405456e-05  max resid 2.199774e-05
... Similar to previous best
Run 5 stress 0.09313703
... Procrustes: rmse 1.139895e-05  max resid 1.65249e-05
... Similar to previous best
Run 6 stress 0.121324
Run 7 stress 0.09313703
... New best solution
... Procrustes: rmse 2.608406e-06  max resid 3.989268e-06
... Similar to previous best
Run 8 stress 0.110277
Run 9 stress 0.110277
Run 10 stress 0.1003895
Run 11 stress 0.09313703
... Procrustes: rmse 1.066647e-05  max resid 1.628755e-05
... Similar to previous best
Run 12 stress 0.1003895
Run 13 stress 0.09313703
... Procrustes: rmse 8.433361e-06  max resid 1.220453e-05
... Similar to previous best
Run 14 stress 0.1213242
Run 15 stress 0.09313703
... New best solution
... Procrustes: rmse 2.89856e-06  max resid 5.393883e-06
... Similar to previous best
Run 16 stress 0.1213242
Run 17 stress 0.09313703
... Procrustes: rmse 6.88965e-06  max resid 1.331356e-05
... Similar to previous best
Run 18 stress 0.09313705
... Procrustes: rmse 2.232363e-05  max resid 5.522645e-05
... Similar to previous best
Run 19 stress 0.09313703
... New best solution
... Procrustes: rmse 8.453591e-07  max resid 2.135673e-06
... Similar to previous best
Run 20 stress 0.1003895
*** Best solution repeated 1 times
```

CODE

```
plot_copepod ← ordiplot(nMDS_copepod, display = "sites", type="n")
points(nMDS_copepod, col="black", pch = pchs[Copepod_Factor])
legend("topright", bty = "n", legend = levels(Copepod_Factor), pch = pchs)
```



CODE

```
nMDS_copepod
```

OUTPUT

```

Call:
metaMDS(comm = TransCopepodData, distance = "bray", k = 2)

global Multidimensional Scaling using monoMDS

Data:     TransCopepodData
Distance: bray

Dimensions: 2
Stress:     0.09313703
Stress type 1, weak ties
Best solution was repeated 1 time in 20 tries
The best solution was from try 19 (random start)
Scaling: centring, PC rotation, halfchange scaling
Species: expanded scores based on 'TransCopepodData'
```

Exercise: Can you see a separation between treatments for copepod assemblages?

Exercise: What is the stress and is it good?

Let's test if the groups are significantly different using ANOSIM (Analysis of Similarities), a non-parametric permutation test. We will use 999 permutations to calculate the significance level.

So, let's test for Treatment

CODE

```
copepod.anosim ← with(CopepodData, anosim(copepod.dis, CopepodData$Treatment))
summary(copepod.anosim)
```

OUTPUT

```
Call:
anosim(x = copepod.dis, grouping = CopepodData$Treatment)
Dissimilarity: bray

ANOSIM statistic R: 0.8495
      Significance: 0.001

Permutation: free
Number of permutations: 999

Upper quantiles of permutations (null model):
  90%   95% 97.5%   99%
0.211 0.264 0.310 0.414

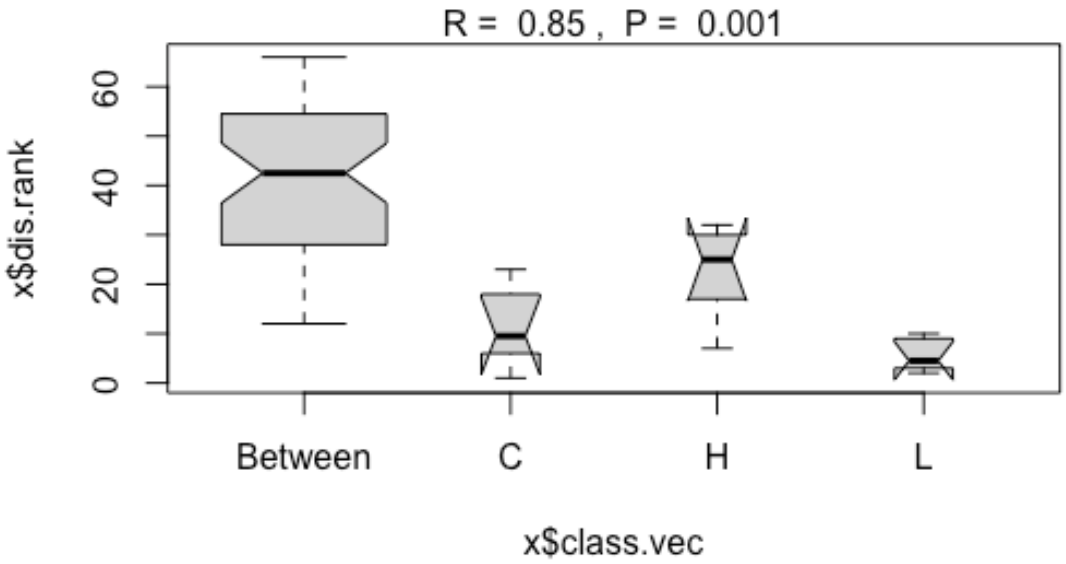
Dissimilarity ranks between and within classes:
        0%   25%  50%   75% 100%  N
Between 12 28.50 42.5 54.25   66 48
C        1  6.50  9.5 16.25   23  6
H        7 18.25 25.0 29.50   32  6
L        2  3.25  4.5  8.00   10  6
```

CODE

```
plot(copepod.anosim)
```

OUTPUT

```
Warning in (function (z, notch = FALSE, width = NULL, varwidth = FALSE, : some
notches went outside hinges ('box'): maybe set notch=FALSE
```



Is there a significant difference between the different treatments? We can see that using a brand-new ANOSIM code.

CODE

```
# Extract a grouping factor (e.g., Management type)
group ← CopepodData$Treatment

# Perform ANOSIM for all groups combined
anosim_all ← anosim(copepod.dis, group)
print(anosim_all)
```

OUTPUT

```

Call:
anosim(x = copepod.dis, grouping = group)
Dissimilarity: bray

ANOSIM statistic R: 0.8495
      Significance: 0.001

Permutation: free
Number of permutations: 999
```

CODE

```
pairwise.anosim ← function(copepod.dis, group, p.adjust.method = "holm", ...) {
  # Ensure grouping is a factor
  group ← factor(group)
  groups ← levels(group)

  # Generate all unique pairs of group levels
```

```
  pairs <- t(combn(groups, 2))

  # Prepare storage for results
  results <- data.frame(
    group1  = character(),
    group2  = character(),
    R       = numeric(),
    p.value = numeric(),
    stringsAsFactors = FALSE
  )

  # Loop through each pair
  for (i in seq_len(nrow(pairs))) {
    g1 <- pairs[i, 1]
    g2 <- pairs[i, 2]

    # Subset the data to just these two groups
    keep <- group %in% c(g1, g2)
    dist_sub <- as.dist(as.matrix(copepod.dis)[keep, keep])
    group_sub <- droplevels(group[keep])

    # Run ANOSIM
    anosim_res <- anosim(dist_sub, group_sub, ...)

    # Store results
    results <- rbind(
      results,
      data.frame(
        group1  = g1,
        group2  = g2,
        R       = anosim_res$statistic,
        p.value = anosim_res$signif,
        stringsAsFactors = FALSE
      )
    )
  }

  # Adjust p-values for multiple comparisons
  results$p.adjusted <- p.adjust(results$p.value, method = p.adjust.method)

  return(results)
}

pairwise_results <- pairwise.anosim(copepod.dis, group, p.adjust.method = "holm")
pairwise_results
```

```
OUTPUT
  group1 group2       R p.value p.adjusted
1      C      H 0.96875   0.036      0.087
2      C      L 1.00000   0.029      0.087
3      H      L 0.59375   0.029      0.087
```

Exercise: Was there a significant difference between treatments for copepod assemblages? What was the Global R value? Were there significant differences between sites?

To see what species of copepods are contributing to the differences between treatments, we can use a SIMPER analysis (Similarity Percentages). The average is the amount that species contributes to the dissimilarity between the groups. The sd is the standard devation (i.e the variation) of the average dissimilarity contribution. The ratio is the average dissimilarity/sd. The ava and avb

are the average abundances of that species to the group. The cumsum is the ordered cumulative contribution to the dissimilarity between groups. Note we can ignore the cumulative 70%.

Note we use the ratio as the rank for the species that mostly separate the groups.

If R approaches 1 the dissimilarity between groups is greater than the dissimilarity within groups, if R is close to 0 the dissimilarity within groups is about the same as the dissimilarity between groups, and if R approaches −1, the variation within groups is greater than the dissimilarity between groups.

CODE

```
copepod.simper ← simper(TransCopepodData, CopepodData$Treatment)
summary(copepod.simper)
```

OUTPUT

```
Contrast: C_L

                average       sd    ratio      ava      avb cumsum     p
Tisbe.sp.4      0.12602  0.01742  7.23200  0.00000  3.64100  0.189 0.002 **
Tisbe.sp.2      0.08194  0.00696 11.77800  0.00000  2.37300  0.311 0.006 **
Tisbe.sp.3      0.07820  0.04708  1.66100  0.00000  2.28200  0.428 0.053 .
Tisbe.sp.5      0.05630  0.05839  0.96400  0.00000  1.66100  0.513 0.337
Halect.gothic   0.05107  0.02030  2.51600  0.50000  1.96800  0.589 0.037 *
Ameira.parvula  0.04409  0.00342 12.89100  0.00000  1.27700  0.655 0.010 **
Cyclopoida      0.02920  0.01798  1.62400  0.84460  0.00000  0.699 0.172
Copepodit.ind   0.02868  0.01653  1.73500  0.25000  1.07900  0.742 0.146
Stenhelia.refl  0.02527  0.01845  1.37000  0.82900  0.29700  0.780 0.403
Amphiascus.ten  0.02428  0.02342  1.03700  0.25000  0.68900  0.816 0.207
Proameira.simp  0.02367  0.02489  0.95100  0.00000  0.67100  0.852 0.011 *
Enhydros.long   0.02296  0.01856  1.23700  1.14190  0.57900  0.886 0.842
Ancorab.mirab   0.02015  0.02351  0.85700  1.03610  1.47000  0.916 0.877
Bulbamph.imus   0.01802  0.01877  0.96000  0.54730  0.00000  0.943 0.392
Daniel.fusifo   0.01324  0.00931  1.42200  1.00000  1.37300  0.963 0.913
Laophontidae    0.00891  0.01597  0.55800  0.00000  0.25000  0.976 0.010 **
Leptopsy.para   0.00873  0.01563  0.55800  0.25000  0.00000  0.990 0.681
Typhlam.typhl   0.00703  0.00550  1.27800  1.30170  1.47700  1.000 0.998
Tisbe.sp.1      0.00000  0.00000      NaN  0.00000  0.00000  1.000    NA
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: C_H

               average      sd   ratio     ava     avb cumsum     p
Tisbe.sp.1     0.12838 0.05504 2.33200 0.00000 2.28280  0.155 0.001 ***
Tisbe.sp.3     0.07987 0.05554 1.43800 0.00000 1.48270  0.251 0.042 *
Typhlam.typhl  0.07134 0.01048 6.80800 1.30170 0.00000  0.337 0.001 ***
Tisbe.sp.2     0.06684 0.04205 1.59000 0.00000 1.31490  0.418 0.055 .
Enhydros.long  0.06297 0.01168 5.39100 1.14190 0.00000  0.494 0.001 ***
Tisbe.sp.5     0.06165 0.04244 1.45300 0.00000 1.23230  0.568 0.151
Tisbe.sp.4     0.04869 0.05131 0.94900 0.00000 1.02410  0.627 0.985
Stenhelia.refl 0.04526 0.02867 1.57900 0.82900 0.00000  0.681 0.007 **
Ameira.parvula 0.04380 0.02667 1.64200 0.00000 0.84460  0.734 0.004 **
Ancorab.mirab  0.04305 0.03671 1.17300 1.03610 1.14890  0.786 0.086 .
Cyclopoida     0.03908 0.03005 1.30000 0.84460 0.25000  0.833 0.025 *
Daniel.fusifo  0.03472 0.02934 1.18300 1.00000 0.57900  0.875 0.037 *
Bulbamph.imus  0.02783 0.02938 0.94700 0.54730 0.00000  0.909 0.024 *
Halect.gothic  0.02726 0.02902 0.93900 0.50000 0.25000  0.942 1.000
Copepodit.ind  0.02182 0.02962 0.73700 0.25000 0.25000  0.968 0.678
Leptopsy.para  0.01395 0.02527 0.55200 0.25000 0.00000  0.985 0.126
Amphiascus.ten 0.01277 0.02308 0.55300 0.25000 0.00000  1.000 0.810
```

```
Proameira.simp 0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Laophontidae   0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: L_H

               average      sd   ratio     ava     avb cumsum     p
Tisbe.sp.4     0.08575 0.04324 1.98300 3.64100 1.02410  0.149 0.104
Tisbe.sp.1     0.07326 0.02796 2.62000 0.00000 2.28280  0.276 0.084 .
Halect.gothic  0.05378 0.01410 3.81500 1.96800 0.25000  0.370 0.020 *
Tisbe.sp.5     0.05238 0.03401 1.54000 1.66100 1.23230  0.460 0.517
Tisbe.sp.3     0.04921 0.03207 1.53500 2.28200 1.48270  0.546 0.904
Typhlam.typhl  0.04684 0.00580 8.07600 1.47700 0.00000  0.627 0.029 *
Tisbe.sp.2     0.03665 0.02956 1.24000 2.37300 1.31490  0.691 0.995
Daniel.fusifo  0.02801 0.02171 1.29000 1.37300 0.57900  0.740 0.183
Copepodit.ind  0.02569 0.01470 1.74700 1.07900 0.25000  0.784 0.316
Amphiascus.ten 0.02244 0.02375 0.94500 0.68900 0.00000  0.823 0.345
Ancorab.mirab  0.02243 0.01715 1.30700 1.47000 1.14890  0.862 0.834
Proameira.simp 0.02169 0.02288 0.94800 0.67100 0.00000  0.900 0.072 .
Enhydros.long  0.01780 0.01868 0.95300 0.57900 0.00000  0.930 0.991
Ameira.parvula 0.01457 0.01799 0.81000 1.27700 0.84460  0.956 1.000
Stenhelia.refl 0.00885 0.01589 0.55700 0.29700 0.00000  0.971 0.988
Cyclopoida     0.00843 0.01509 0.55800 0.00000 0.25000  0.986 0.998
Laophontidae   0.00816 0.01466 0.55700 0.25000 0.00000  1.000 0.192
Bulbamph.imus  0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Leptopsy.para  0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
Permutation: free
Number of permutations: 999
```

Exercise: Which species most contribute to the separation between treatments?

Exercise 2: Analysis of ant assemblages from different Sydney Vegetation Communties

This is a study of the diversity of ants found in bushland remnants in the Sydney region. The ants were sampled with pitfall traps in the ground, and taken back to the lab to determine their species and relative abundance in each sample.

In this example we are looking at a collection of ants sampled in different vegetation communities ("Community") and whether they were sampled in the interior or on the edge of the vegetation community ("Sample"). We expected that the abundance and diversity of ants (the assemblage) would be different in different vegetation communities, and that the diversity of ants would be different in the interior to the edge of the vegetation community.

This leads to three multivariate null hypotheses.

H0: There is no difference in ant assemblage between the different vegetation communities.

H0: There is no difference in ant assemblage between the interior and the edge of the community.

H0: There is no interaction between the vegetation community and the location for the ant assemblages

We want to know if there is a pattern in species assemblages using nMDS, whether there is a statistically significant difference between communities and samples using PERMANOVA, and what species contribute to these differences via SIMPER.

First you need to load the packages vegan and MASS and file AntData.csv,

CODE

```
library(vegan)
library(MASS)

AntData <- read.csv("data/AntDataTotal.csv", header = TRUE)
```

Now the data is entered, let's apply a 4th root transformation, like in the example above,

CODE

```
TransAntData <- (AntData[,4:103])^(1/4)
```

Now let's generate a Bray-Curtis dissimilarity matrix on this transformed data.

CODE

```
ant.dis <- vegdist(TransAntData, method = "bray")
```

Now let's look at the nMDS with labels for Community and take a note of the stress value (how well the ordination represents the data). A great stress value is <0.1, an OK stress value is between 0.1 and 0.2, and >0.2 is not so good. A stress greater than 0.3 is essentially arbitrary.

CODE

```
pchs<- c(0:5)

Ant_Factor <- factor(AntData$Community)
nMDS_Ant <- metaMDS(TransAntData, distance="bray", k=2)
```

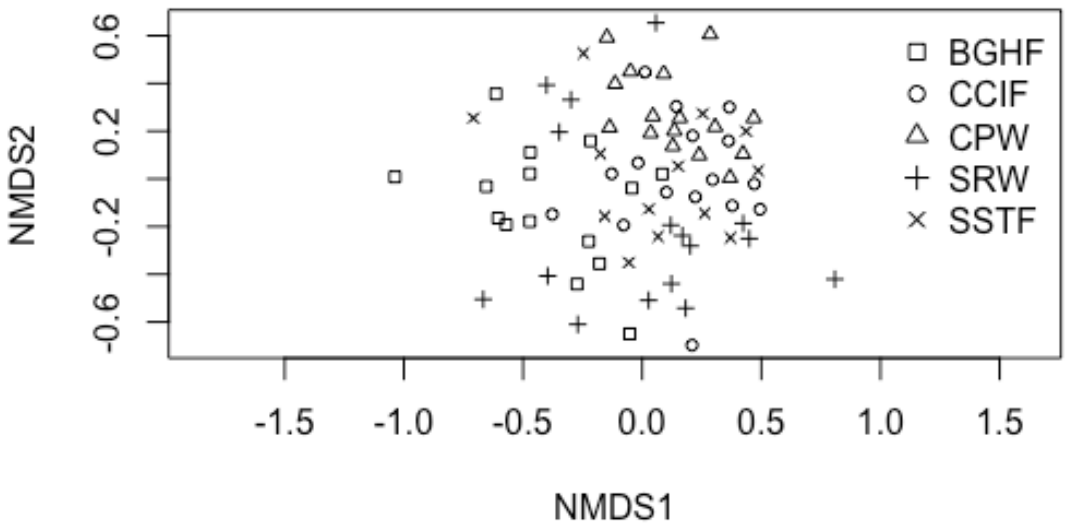
OUTPUT

```
Run 0 stress 0.2869097
Run 1 stress 0.3057332
Run 2 stress 0.2898014
Run 3 stress 0.2952057
Run 4 stress 0.2915235
Run 5 stress 0.2897859
Run 6 stress 0.2981752
Run 7 stress 0.2916466
Run 8 stress 0.2911888
Run 9 stress 0.2920584
Run 10 stress 0.2909752
Run 11 stress 0.2877412
Run 12 stress 0.2869326
... Procrustes: rmse 0.0398352  max resid 0.1982187
Run 13 stress 0.2868603
... New best solution
```

```
... Procrustes: rmse 0.06156614  max resid 0.2458997
Run 14 stress 0.2901395
Run 15 stress 0.2883611
Run 16 stress 0.2887915
Run 17 stress 0.2880244
Run 18 stress 0.2887304
Run 19 stress 0.2944271
Run 20 stress 0.2870568
... Procrustes: rmse 0.05963004  max resid 0.2257025
*** Best solution was not repeated -- monoMDS stopping criteria:
    20: stress ratio > sratmax
```

CODE

```
plot_Ant ← ordiplot(nMDS_Ant, display = "sites", type="n")
points(nMDS_Ant, col="black", pch = pchs[Ant_Factor])
legend("topright", bty = "n", legend = levels(Ant_Factor), pch = pchs)
```



CODE

```
nMDS_Ant
```

OUTPUT

```

Call:
metaMDS(comm = TransAntData, distance = "bray", k = 2)

global Multidimensional Scaling using monoMDS

Data:     TransAntData
Distance: bray
```

```
Dimensions: 2
Stress:     0.2868603
Stress type 1, weak ties
Best solution was not repeated after 20 tries
The best solution was from try 13 (random start)
Scaling: centring, PC rotation, halfchange scaling
Species: expanded scores based on 'TransAntData'
```

Exercise: Can you see a separation between communties?

Exercise: What is the stress and is it good?

We can test for differences between Communities, Samples and their Interactions using PERMANOVA (called Adonis in the package vegan). This is better for analyses with at least 2 factors than ANOSIM, as it can test the interactions. We use 999 permutations to calculate the significance (p) value. You interpret the PERMANOVA table like an ANOVA Table, except permutations are used to generate the p value,

CODE

```
# PERMANOVA with interaction using adonis2
adonis2(vegdist(TransAntData) ~ Community * Sample,
        data = AntData,
        permutations = 999,
        by = "terms")
```

OUTPUT

```
Permutation test for adonis under reduced model
Terms added sequentially (first to last)
Permutation: free
Number of permutations: 999

adonis2(formula = vegdist(TransAntData) ~ Community * Sample, data = AntData, permutations = 999, by =
"terms")
               Df SumOfSqs      R2      F Pr(>F)
Community       4   2.8190 0.13512 2.6985  0.001 ***
Sample          1   0.1918 0.00919 0.7345  0.766
Community:Sample  4   0.6160 0.02953 0.5897  0.994
Residual       66  17.2367 0.82616
Total          75  20.8636 1.00000
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Exercise: Is there a significant difference for the Community, Sample and/or their interaction?

If we find an overall significant p value, we need to see which level is significant from which other level. Here we can do pairwise tests (a bit like *post-hoc* tests in ANOVAs), with the p value adjusted with a Bonferroni correction. Here we need to create a function to do this, as it is not standard in the vegan package. So copy and paste this function.

To do the pairwise tests, there is a new R command on github and you can copy this text below to do it. This is for the Community factor in the ant data.

Note the first time you do this, you need to first install Rtools from here https://cran.r-project.org/bin/windows/Rtools/

CODE

```
library(devtools)
```

OUTPUT

```
Loading required package: usethis
```

OUTPUT

```

Attaching package: 'devtools'
```

OUTPUT

```
The following object is masked from 'package:permute':

    check
```

CODE

```
install_github("pmartinezarbizu/pairwiseAdonis/pairwiseAdonis")
```

OUTPUT

```
Using GitHub PAT from the git credential store.
```

OUTPUT

```
Skipping install of 'pairwiseAdonis' from a github remote, the SHA1 (cb190f76) has not changed since
last install.
  Use `force = TRUE` to force installation
```

CODE

```
library(pairwiseAdonis)
```

OUTPUT

```
Loading required package: cluster
```

CODE

```
pairwise.adonis(TransAntData, AntData$Community)
```

OUTPUT

```
          pairs Df SumsOfSqs  F.Model         R2 p.value p.adjusted sig
1  BGHF vs CCIF  1 1.1326581 4.532465 0.13516648   0.001       0.01   *
2   BGHF vs CPW  1 1.3163257 5.351814 0.15579421   0.001       0.01   *
3   BGHF vs SRW  1 0.6422157 2.204225 0.07063867   0.014       0.14
4  BGHF vs SSTF  1 0.7759586 2.965274 0.10237341   0.003       0.03   .
5   CCIF vs CPW  1 0.4603595 2.075474 0.06470596   0.016       0.16
6   CCIF vs SRW  1 0.5712089 2.149875 0.06687041   0.016       0.16
7  CCIF vs SSTF  1 0.3236528 1.381556 0.04867796   0.165       1.00
8    CPW vs SRW  1 0.8702832 3.323148 0.09972490   0.001       0.01   *
9   CPW vs SSTF  1 0.4584616 1.993009 0.06874103   0.011       0.11
10  SRW vs SSTF  1 0.4534517 1.626466 0.05681688   0.086       0.86
```

Exercise: Which communities are significantly different from each other?

To see what species are contributing to the differences between the vegetation communities, we can again use a SIMPER analysis (Similarity Percentages)

CODE

```
antsim ← simper(TransAntData, AntData$Community)
summary(antsim)
```

OUTPUT

```
Contrast: BGHF_CCIF

                          average      sd   ratio     ava     avb cumsum     p
Pheidole.5                0.05345 0.04054 1.31860 0.44630 1.22750  0.069 0.001
Tetramorium.3             0.04337 0.03735 1.16130 0.71720 0.00000  0.125 0.001
Anonychromyrma.1          0.03847 0.03475 1.10700 0.69070 0.25380  0.174 0.015
Pheidole.7                0.03459 0.03500 0.98840 0.50690 0.38970  0.219 0.040
Rhytidiponera..metallica. 0.03448 0.03747 0.92030 0.98380 1.30250  0.263 0.308
Tapinoma.1                0.03402 0.03186 1.06780 0.42520 0.65120  0.307 0.119
Monomorium.1              0.03233 0.04049 0.79850 0.45680 0.29450  0.349 0.043
Meranoplus.1              0.02743 0.03296 0.83210 0.34180 0.33620  0.384 0.494
Notoncus.1                0.02495 0.03250 0.76780 0.20000 0.37000  0.416 0.716
Paratrechina.1            0.02038 0.02882 0.70720 0.21260 0.25000  0.443 0.828
Machomyrma.1              0.01886 0.03016 0.62530 0.00000 0.33620  0.467 0.627
Paratrechina.4            0.01802 0.02650 0.68000 0.26670 0.14480  0.490 0.108
Pheidole.7.1              0.01604 0.02829 0.56710 0.30690 0.00000  0.511 0.114
Heteroponera.1            0.01543 0.02693 0.57290 0.13330 0.18750  0.531 0.113
Tetramorium.4             0.01536 0.02604 0.58980 0.30040 0.00000  0.550 0.004
Iridomyrmex.7             0.01409 0.02534 0.55610 0.00000 0.26180  0.569 0.002
Iridomyrmex.purpureus     0.01395 0.02541 0.54900 0.00000 0.26180  0.587 0.829
Paratrechina.2            0.01262 0.02405 0.52460 0.15440 0.12500  0.603 0.935
Solenopsis.1              0.01200 0.02462 0.48760 0.20000 0.00000  0.618 0.037
Polyrachis.5              0.01151 0.02474 0.46500 0.00000 0.18750  0.633 0.008
Machomyrma.3              0.01131 0.02500 0.45240 0.00000 0.18750  0.648 0.118
Doleromyrma.1             0.01120 0.02414 0.46390 0.00000 0.18750  0.662 0.642
Pristomyrmex.1            0.01119 0.02335 0.47930 0.21260 0.00000  0.676 0.040
Crematogaster.1           0.01117 0.02270 0.49230 0.20000 0.00000  0.691 0.923
Pristomyrmex.2            0.01080 0.02361 0.45740 0.14590 0.07430  0.705 0.819
Colobostruma.1            0.01019 0.02101 0.48500 0.20000 0.00000  0.718 0.003
Crematogaster.3           0.00987 0.02758 0.35770 0.00000 0.16760  0.731 0.051
Rhopalomastix.2           0.00920 0.02555 0.36020 0.09430 0.06250  0.743 0.092
Camponotus.12             0.00920 0.01972 0.46660 0.00000 0.19930  0.754 0.580
Pheidole.6                0.00919 0.01970 0.46670 0.00000 0.19930  0.766 0.802
Rhopalomastix.1           0.00909 0.02516 0.36140 0.00000 0.14480  0.778 0.207
Rhopalomastix.3           0.00792 0.02083 0.38030 0.15860 0.00000  0.788 0.026
Notoncus.4                0.00767 0.02079 0.36910 0.00000 0.13680  0.798 0.043
Myrmecia.1                0.00689 0.01809 0.38080 0.13330 0.00000  0.807 0.067
Camponotus.consobrinus    0.00682 0.01929 0.35360 0.00000 0.12500  0.816 0.911
Iridomyrmex.2             0.00680 0.01856 0.36640 0.00000 0.12500  0.825 0.832
Myrmecia.3                0.00677 0.01784 0.37920 0.13330 0.00000  0.833 0.499
Mayriella.2               0.00669 0.01851 0.36130 0.06670 0.06250  0.842 0.769
Prolasius.1               0.00666 0.01822 0.36530 0.07930 0.06250  0.850 0.281
Polyrachis.2              0.00624 0.01709 0.36490 0.06670 0.06250  0.859 0.229
Ochetellus.1              0.00618 0.01701 0.36340 0.00000 0.12500  0.866 0.914
Doleromyrma.3             0.00608 0.01575 0.38600 0.13330 0.00000  0.874 0.908
Strumigenys.1             0.00580 0.01599 0.36290 0.06670 0.06250  0.882 0.311
Papyrius.1                0.00559 0.01535 0.36420 0.06670 0.06250  0.889 0.219
Paratrechina.6            0.00434 0.01644 0.26400 0.07930 0.00000  0.894 0.126
Prolasius.2               0.00434 0.01644 0.26400 0.07930 0.00000  0.900 0.264
Crematogaster.2           0.00421 0.01598 0.26320 0.06670 0.00000  0.905 0.949
Doleromyrma.2             0.00401 0.01600 0.25070 0.00000 0.06250  0.911 0.221
Strumigenys.2             0.00400 0.01517 0.26350 0.06670 0.00000  0.916 0.109
Iridomyrmex.4             0.00388 0.01546 0.25120 0.00000 0.06250  0.921 0.686
Polyrachis.1              0.00388 0.01546 0.25120 0.00000 0.06250  0.926 0.215
```

```
Plagiolepis.1             0.00365 0.01382 0.26400 0.06670 0.00000  0.931 0.126
Melophorus.1              0.00365 0.01446 0.25210 0.00000 0.06250  0.935 0.228
Notoncus.3                0.00354 0.01340 0.26420 0.06670 0.00000  0.940 0.103
Prolasius.6               0.00354 0.01340 0.26420 0.06670 0.00000  0.944 0.914
Probolomyrmex.1           0.00339 0.01283 0.26440 0.06670 0.00000  0.949 0.103
Tetramorium.5             0.00339 0.01283 0.26440 0.06670 0.00000  0.953 0.103
Pheidole.2                0.00337 0.01274 0.26440 0.06670 0.00000  0.958 0.096
Prolasius.3               0.00337 0.01274 0.26440 0.06670 0.00000  0.962 0.687
Leptomyrmex.1             0.00335 0.01265 0.26440 0.06670 0.00000  0.966 0.119
Froggattella.1            0.00328 0.01296 0.25330 0.00000 0.06250  0.970 0.226
Colobostruma.2            0.00301 0.01186 0.25410 0.00000 0.06250  0.974 0.238
Machomyrma.6              0.00301 0.01183 0.25410 0.00000 0.06250  0.978 0.260
Melophorus.2              0.00301 0.01183 0.25410 0.00000 0.06250  0.982 0.327
Polyrachis.3              0.00301 0.01183 0.25410 0.00000 0.06250  0.986 0.707
Mayriella.1               0.00286 0.01078 0.26500 0.06670 0.00000  0.990 0.465
Papyrius.2                0.00286 0.01078 0.26500 0.06670 0.00000  0.993 0.964
Mesostruma.1              0.00273 0.01031 0.26520 0.06670 0.00000  0.997 0.964
Stigmacros.3              0.00253 0.00993 0.25520 0.00000 0.06250  1.000 0.842
Anonychromyrma.2          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Anonychromyrma.3          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotis.26             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotus.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Disturbed.lost            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Dolichonderus.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Epopostruma.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.6             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.8             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.4              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Meranoplus.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecorhrynchus.1        0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Oligomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Oligomyrmex.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pachychondyla.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pachycondyla.2            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.5            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.1                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.6.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.7              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.8              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.4               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.7               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.5           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.4              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Technomyrmex.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA

Pheidole.5                **
Tetramorium.3             **
Anonychromyrma.1          *
Pheidole.7                *
Rhytidiponera..metallica.
Tapinoma.1
Monomorium.1              *
Meranoplus.1
Notoncus.1
Paratrechina.1
Machomyrma.1
Paratrechina.4
Pheidole.7.1
Heteroponera.1
Tetramorium.4             **
```

```
Iridomyrmex.7            **
Iridomyrmex.purpureus
Paratrechina.2
Solenopsis.1             *
Polyrachis.5             **
Machomyrma.3
Doleromyrma.1
Pristomyrmex.1           *
Crematogaster.1
Pristomyrmex.2
Colobostruma.1           **
Crematogaster.3          .
Rhopalomastix.2          .
Camponotus.12
Pheidole.6
Rhopalomastix.1
Rhopalomastix.3          *
Notoncus.4               *
Myrmecia.1               .
Camponotus.consobrinus
Iridomyrmex.2
Myrmecia.3
Mayriella.2
Prolasius.1
Polyrachis.2
Ochetellus.1
Doleromyrma.3
Strumigenys.1
Papyrius.1
Paratrechina.6
Prolasius.2
Crematogaster.2
Doleromyrma.2
Strumigenys.2
Iridomyrmex.4
Polyrachis.1
Plagiolepis.1
Melophorus.1
Notoncus.3
Prolasius.6
Probolomyrmex.1
Tetramorium.5
Pheidole.2               .
Prolasius.3
Leptomyrmex.1
Froggattella.1
Colobostruma.2
Machomyrma.6
Melophorus.2
Polyrachis.3
Mayriella.1
Papyrius.2
Mesostruma.1
Stigmacros.3
Anonychromyrma.2
Anonychromyrma.3
Camponotis.26
Camponotus.1
Disturbed.lost
Dolichonderus.1
Epopostruma.1
Iridomyrmex.5
Iridomyrmex.6
Iridomyrmex.8
Machomyrma.4
```

```
Meranoplus.2
Myrmecia.2
Myrmecia.4
Myrmecorhrynchus.1
Oligomyrmex.1
Oligomyrmex.2
Pachychondyla.1
Pachycondyla.2
Paratrechina.5
Pheidole.1
Pheidole.6.1
Polyrachis.7
Polyrachis.8
Prolasius.4
Prolasius.7
Rhopalomastix.5
Stigmacros.1
Stigmacros.2
Stigmacros.4
Technomyrmex.1
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: BGHF_CPW

                          average      sd   ratio     ava     avb cumsum     p
Tetramorium.3             0.03724 0.03269 1.13910 0.71720 0.00000  0.047 0.005
Pheidole.5                0.03715 0.03141 1.18270 0.44630 0.92190  0.094 0.593
Meranoplus.1              0.03196 0.02890 1.10590 0.34180 0.65660  0.135 0.086
Anonychromyrma.1          0.03196 0.02791 1.14510 0.69070 0.08230  0.176 0.294
Tapinoma.1                0.03127 0.02931 1.06680 0.42520 0.73330  0.215 0.458
Rhytidiponera..metallica. 0.03040 0.03400 0.89420 0.98380 1.45860  0.254 0.569
Pheidole.7                0.02792 0.03003 0.92990 0.50690 0.34410  0.290 0.492
Paratrechina.1            0.02761 0.02785 0.99110 0.21260 0.57810  0.325 0.138
Iridomyrmex.purpureus     0.02585 0.03202 0.80740 0.00000 0.54280  0.357 0.071
Monomorium.1              0.02474 0.03321 0.74510 0.45680 0.16760  0.389 0.419
Notoncus.1                0.02287 0.02804 0.81560 0.20000 0.42060  0.418 0.852
Machomyrma.1              0.02194 0.02674 0.82050 0.00000 0.43750  0.446 0.320
Pheidole.7.1              0.01935 0.02739 0.70640 0.30690 0.19930  0.470 0.020
Mesostruma.1              0.01824 0.02621 0.69570 0.06670 0.39440  0.494 0.011
Crematogaster.1           0.01707 0.02408 0.70900 0.20000 0.25000  0.515 0.562
Iridomyrmex.5             0.01685 0.02711 0.62160 0.00000 0.34800  0.537 0.001
Paratrechina.2            0.01512 0.02293 0.65940 0.15440 0.25000  0.556 0.861
Pristomyrmex.2            0.01511 0.02610 0.57890 0.14590 0.22520  0.575 0.436
Prolasius.6               0.01482 0.02421 0.61210 0.06670 0.31540  0.594 0.050
Papyrius.2                0.01478 0.02913 0.50740 0.06670 0.21120  0.613 0.155
Tetramorium.4             0.01448 0.02315 0.62550 0.30040 0.06250  0.631 0.013
Ochetellus.1              0.01402 0.02158 0.64950 0.00000 0.32430  0.649 0.264
Camponotus.consobrinus    0.01372 0.02459 0.55770 0.00000 0.25000  0.666 0.366
Mayriella.2               0.01347 0.02244 0.60030 0.06670 0.25000  0.683 0.137
Iridomyrmex.2             0.01314 0.02377 0.55280 0.00000 0.27370  0.700 0.313
Paratrechina.4            0.01304 0.02090 0.62380 0.26670 0.06250  0.717 0.488
Camponotus.12             0.01088 0.01960 0.55510 0.00000 0.25000  0.730 0.405
Solenopsis.1              0.01034 0.02144 0.48210 0.20000 0.00000  0.744 0.107
Pristomyrmex.1            0.00978 0.02056 0.47570 0.21260 0.00000  0.756 0.122
Doleromyrma.3             0.00941 0.01784 0.52750 0.13330 0.12500  0.768 0.746
Stigmacros.3              0.00913 0.01969 0.46340 0.00000 0.21910  0.779 0.103
Colobostruma.1            0.00893 0.01855 0.48140 0.20000 0.00000  0.791 0.042
Doleromyrma.1             0.00841 0.01800 0.46710 0.00000 0.19930  0.802 0.844
Pheidole.6                0.00817 0.01769 0.46170 0.00000 0.18750  0.812 0.876
Myrmecia.3                0.00803 0.01780 0.45140 0.13330 0.06250  0.822 0.372
Heteroponera.1            0.00802 0.01758 0.45610 0.13330 0.07430  0.832 0.734
Myrmecia.1                0.00757 0.01689 0.44780 0.13330 0.06250  0.842 0.060
Polyrachis.2              0.00715 0.01591 0.44920 0.06670 0.12500  0.851 0.148
Rhopalomastix.3           0.00695 0.01840 0.37790 0.15860 0.00000  0.860 0.153
```

```
Polyrachis.8              0.00636 0.01715 0.37080 0.00000 0.12500  0.868 0.052
Prolasius.1               0.00549 0.01529 0.35900 0.07930 0.06250  0.875 0.511
Pachycondyla.2            0.00543 0.01485 0.36570 0.00000 0.12500  0.882 0.504
Mayriella.1               0.00541 0.01505 0.35970 0.06670 0.06250  0.889 0.156
Papyrius.1                0.00540 0.01484 0.36400 0.06670 0.06250  0.895 0.288
Polyrachis.3              0.00531 0.01445 0.36740 0.00000 0.12500  0.902 0.461
Rhopalomastix.2           0.00510 0.01960 0.26010 0.09430 0.00000  0.909 0.378
Iridomyrmex.4             0.00449 0.01767 0.25410 0.00000 0.09350  0.914 0.588
Paratrechina.6            0.00378 0.01446 0.26150 0.07930 0.00000  0.919 0.409
Prolasius.2               0.00378 0.01446 0.26150 0.07930 0.00000  0.924 0.417
Crematogaster.2           0.00360 0.01386 0.26010 0.06670 0.00000  0.929 0.987
Strumigenys.2             0.00345 0.01323 0.26060 0.06670 0.00000  0.933 0.386
Myrmecia.2                0.00344 0.01360 0.25280 0.00000 0.06250  0.937 0.235
Oligomyrmex.1             0.00319 0.01258 0.25360 0.00000 0.06250  0.942 0.226
Plagiolepis.1             0.00318 0.01216 0.26150 0.06670 0.00000  0.946 0.409
Notoncus.3                0.00309 0.01182 0.26170 0.06670 0.00000  0.949 0.376
Stigmacros.4              0.00300 0.01182 0.25410 0.00000 0.06250  0.953 0.539
Probolomyrmex.1           0.00298 0.01137 0.26200 0.06670 0.00000  0.957 0.348
Tetramorium.5             0.00298 0.01137 0.26200 0.06670 0.00000  0.961 0.348
Iridomyrmex.6             0.00297 0.01167 0.25420 0.00000 0.06250  0.965 0.261
Pheidole.2                0.00296 0.01130 0.26210 0.06670 0.00000  0.968 0.414
Prolasius.3               0.00296 0.01130 0.26210 0.06670 0.00000  0.972 0.837
Leptomyrmex.1             0.00294 0.01123 0.26210 0.06670 0.00000  0.976 0.388
Meranoplus.2              0.00278 0.01092 0.25470 0.00000 0.06250  0.979 0.255
Rhopalomastix.1           0.00267 0.01044 0.25580 0.00000 0.07430  0.983 0.865
Strumigenys.1             0.00255 0.00970 0.26320 0.06670 0.00000  0.986 0.789
Melophorus.2              0.00244 0.00954 0.25610 0.00000 0.07430  0.989 0.589
Pheidole.6.1              0.00241 0.00942 0.25550 0.00000 0.06250  0.992 0.275
Iridomyrmex.8             0.00205 0.00802 0.25610 0.00000 0.06250  0.995 0.268
Myrmecia.4                0.00205 0.00802 0.25610 0.00000 0.06250  0.997 0.268
Rhopalomastix.5           0.00205 0.00802 0.25610 0.00000 0.06250  1.000 0.268
Anonychromyrma.2          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Anonychromyrma.3          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotis.26             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotus.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Colobostruma.2            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Crematogaster.3           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Disturbed.lost            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Doleromyrma.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Dolichonderus.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Epopostruma.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Froggattella.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.7             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.3              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.4              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.6              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Melophorus.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecorhrynchus.1        0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Oligomyrmex.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pachychondyla.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.5            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.1                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.5              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.7              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.4               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.7               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Technomyrmex.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA

Tetramorium.3             **
Pheidole.5
Meranoplus.1              .
```

```
Anonychromyrma.1
Tapinoma.1
Rhytidiponera..metallica.
Pheidole.7
Paratrechina.1
Iridomyrmex.purpureus     .
Monomorium.1
Notoncus.1
Machomyrma.1
Pheidole.7.1              *
Mesostruma.1              *
Crematogaster.1
Iridomyrmex.5             **
Paratrechina.2
Pristomyrmex.2
Prolasius.6               *
Papyrius.2
Tetramorium.4             *
Ochetellus.1
Camponotus.consobrinus
Mayriella.2
Iridomyrmex.2
Paratrechina.4
Camponotus.12
Solenopsis.1
Pristomyrmex.1
Doleromyrma.3
Stigmacros.3
Colobostruma.1            *
Doleromyrma.1
Pheidole.6
Myrmecia.3
Heteroponera.1
Myrmecia.1                .
Polyrachis.2
Rhopalomastix.3
Polyrachis.8              .
Prolasius.1
Pachycondyla.2
Mayriella.1
Papyrius.1
Polyrachis.3
Rhopalomastix.2
Iridomyrmex.4
Paratrechina.6
Prolasius.2
Crematogaster.2
Strumigenys.2
Myrmecia.2
Oligomyrmex.1
Plagiolepis.1
Notoncus.3
Stigmacros.4
Probolomyrmex.1
Tetramorium.5
Iridomyrmex.6
Pheidole.2
Prolasius.3
Leptomyrmex.1
Meranoplus.2
Rhopalomastix.1
Strumigenys.1
Melophorus.2
Pheidole.6.1
Iridomyrmex.8
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Myrmecia.4
Rhopalomastix.5
Anonychromyrma.2
Anonychromyrma.3
Camponotis.26
Camponotus.1
Colobostruma.2
Crematogaster.3
Disturbed.lost
Doleromyrma.2
Dolichonderus.1
Epopostruma.1
Froggattella.1
Iridomyrmex.7
Machomyrma.3
Machomyrma.4
Machomyrma.6
Melophorus.1
Myrmecorhrynchus.1
Notoncus.4
Oligomyrmex.2
Pachychondyla.1
Paratrechina.5
Pheidole.1
Polyrachis.1
Polyrachis.5
Polyrachis.7
Prolasius.4
Prolasius.7
Stigmacros.1
Stigmacros.2
Technomyrmex.1
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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: BGHF_SRW

                         average      sd   ratio     ava     avb cumsum     p
Tetramorium.3            0.04571 0.04213 1.08490 0.71720 0.29710  0.058 0.001
Pheidole.5               0.04554 0.04637 0.98200 0.44630 0.75730  0.117 0.024
Rhytidiponera..metallica. 0.04178 0.03930 1.06300 0.98380 0.79590  0.170 0.024
Anonychromyrma.1         0.03930 0.03593 1.09370 0.69070 0.35530  0.220 0.006
Pheidole.7               0.03562 0.04061 0.87700 0.50690 0.26180  0.266 0.014
Monomorium.1             0.03444 0.04336 0.79440 0.45680 0.27240  0.310 0.018
Notoncus.1               0.02975 0.03307 0.89970 0.20000 0.48480  0.348 0.220
Crematogaster.2          0.02843 0.03727 0.76300 0.06670 0.43640  0.384 0.001
Tapinoma.1               0.02781 0.03265 0.85190 0.42520 0.18750  0.420 0.881
Doleromyrma.3            0.02663 0.04353 0.61190 0.13330 0.33670  0.454 0.005
Meranoplus.1             0.02641 0.03671 0.71920 0.34180 0.24430  0.487 0.561
Paratrechina.1           0.02429 0.03114 0.78010 0.21260 0.34410  0.518 0.479
Paratrechina.2           0.02210 0.02986 0.74040 0.15440 0.33230  0.547 0.259
Paratrechina.4           0.01956 0.02986 0.65500 0.26670 0.12500  0.572 0.046
Pheidole.7.1             0.01918 0.03155 0.60790 0.30690 0.06250  0.596 0.020
Pristomyrmex.2           0.01825 0.03129 0.58320 0.14590 0.21340  0.619 0.189
Tetramorium.4            0.01672 0.02853 0.58580 0.30040 0.00000  0.641 0.002
Solenopsis.1             0.01533 0.02859 0.53620 0.20000 0.06250  0.660 0.002
Crematogaster.1          0.01470 0.02711 0.54230 0.20000 0.06250  0.679 0.759
Myrmecia.3               0.01374 0.02702 0.50830 0.13330 0.12500  0.697 0.037
Heteroponera.1           0.01289 0.02495 0.51650 0.13330 0.12500  0.713 0.287
Pristomyrmex.1           0.01222 0.02573 0.47480 0.21260 0.00000  0.729 0.024
Colobostruma.1           0.01110 0.02310 0.48050 0.20000 0.00000  0.743 0.001
Prolasius.3              0.01032 0.02298 0.44900 0.06670 0.13680  0.756 0.047
Iridomyrmex.2            0.00923 0.02626 0.35130 0.00000 0.12500  0.768 0.681
Rhopalomastix.3          0.00862 0.02285 0.37710 0.15860 0.00000  0.779 0.002
Technomyrmex.1           0.00828 0.02270 0.36470 0.00000 0.12500  0.789 0.059
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Pachycondyla.2            0.00810 0.02202 0.36800 0.00000 0.13680  0.800 0.203
Prolasius.1               0.00767 0.02104 0.36470 0.07930 0.06250  0.810 0.193
Mayriella.2               0.00759 0.02110 0.35990 0.06670 0.06250  0.819 0.689
Prolasius.2               0.00758 0.02102 0.36080 0.07930 0.06250  0.829 0.032
Myrmecia.1                0.00751 0.01991 0.37740 0.13330 0.00000  0.839 0.079
Dolichonderus.1           0.00722 0.01961 0.36820 0.00000 0.12500  0.848 0.046
Machomyrma.3              0.00707 0.01917 0.36910 0.00000 0.12500  0.857 0.494
Stigmacros.1              0.00692 0.01872 0.36950 0.00000 0.12500  0.866 0.165
Rhopalomastix.2           0.00661 0.02531 0.26120 0.09430 0.00000  0.874 0.159
Papyrius.2                0.00623 0.01722 0.36180 0.06670 0.06250  0.882 0.847
Strumigenys.1             0.00623 0.01722 0.36180 0.06670 0.06250  0.890 0.192
Paratrechina.6            0.00475 0.01806 0.26270 0.07930 0.00000  0.896 0.004
Strumigenys.2             0.00442 0.01687 0.26180 0.06670 0.00000  0.902 0.006
Iridomyrmex.purpureus     0.00434 0.01743 0.24920 0.00000 0.06250  0.907 0.998
Plagiolepis.1             0.00399 0.01519 0.26270 0.06670 0.00000  0.912 0.004
Notoncus.3                0.00386 0.01467 0.26300 0.06670 0.00000  0.917 0.004
Polyrachis.2              0.00386 0.01467 0.26300 0.06670 0.00000  0.922 0.540
Prolasius.6               0.00386 0.01467 0.26300 0.06670 0.00000  0.927 0.888
Probolomyrmex.1           0.00368 0.01398 0.26330 0.06670 0.00000  0.932 0.005
Tetramorium.5             0.00368 0.01398 0.26330 0.06670 0.00000  0.937 0.005
Papyrius.1                0.00365 0.01387 0.26340 0.06670 0.00000  0.941 0.395
Pheidole.2                0.00365 0.01387 0.26340 0.06670 0.00000  0.946 0.005
Leptomyrmex.1             0.00363 0.01377 0.26340 0.06670 0.00000  0.951 0.006
Machomyrma.1              0.00357 0.01415 0.25240 0.00000 0.06250  0.955 1.000
Camponotus.consobrinus    0.00353 0.01397 0.25250 0.00000 0.06250  0.960 0.981
Doleromyrma.1             0.00353 0.01397 0.25250 0.00000 0.06250  0.964 0.985
Iridomyrmex.4             0.00350 0.01387 0.25260 0.00000 0.06250  0.969 0.771
Pachychondyla.1           0.00345 0.01365 0.25280 0.00000 0.06250  0.973 0.236
Rhopalomastix.1           0.00341 0.01350 0.25290 0.00000 0.06250  0.977 0.758
Stigmacros.4              0.00325 0.01284 0.25340 0.00000 0.06250  0.982 0.336
Mayriella.1               0.00306 0.01156 0.26440 0.06670 0.00000  0.986 0.360
Mesostruma.1              0.00292 0.01102 0.26460 0.06670 0.00000  0.989 0.957
Ochetellus.1              0.00282 0.01107 0.25460 0.00000 0.06250  0.993 0.992
Oligomyrmex.2             0.00282 0.01107 0.25460 0.00000 0.06250  0.996 0.509
Pheidole.6                0.00282 0.01107 0.25460 0.00000 0.06250  1.000 0.994
Anonychromyrma.2          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Anonychromyrma.3          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotis.26             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotus.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotus.12             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Colobostruma.2            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Crematogaster.3           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Disturbed.lost            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Doleromyrma.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Epopostruma.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Froggattella.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.6             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.7             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.8             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.4              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.6              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Melophorus.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Melophorus.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Meranoplus.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecorhrynchus.1        0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Oligomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.5            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.1                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.6.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.3              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
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Polyrachis.5              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.7              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.8              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.4               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.7               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.5           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.3              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA

Tetramorium.3             **
Pheidole.5                *
Rhytidiponera..metallica. *
Anonychromyrma.1          **
Pheidole.7                *
Monomorium.1              *
Notoncus.1
Crematogaster.2           **
Tapinoma.1
Doleromyrma.3             **
Meranoplus.1
Paratrechina.1
Paratrechina.2
Paratrechina.4            *
Pheidole.7.1              *
Pristomyrmex.2
Tetramorium.4             **
Solenopsis.1              **
Crematogaster.1
Myrmecia.3                *
Heteroponera.1
Pristomyrmex.1            *
Colobostruma.1            **
Prolasius.3               *
Iridomyrmex.2
Rhopalomastix.3           **
Technomyrmex.1            .
Pachycondyla.2
Prolasius.1
Mayriella.2
Prolasius.2               *
Myrmecia.1                .
Dolichonderus.1           *
Machomyrma.3
Stigmacros.1
Rhopalomastix.2
Papyrius.2
Strumigenys.1
Paratrechina.6            **
Strumigenys.2             **
Iridomyrmex.purpureus
Plagiolepis.1             **
Notoncus.3                **
Polyrachis.2
Prolasius.6
Probolomyrmex.1           **
Tetramorium.5             **
Papyrius.1
Pheidole.2                **
Leptomyrmex.1             **
Machomyrma.1
Camponotus.consobrinus
Doleromyrma.1
Iridomyrmex.4
Pachychondyla.1
Rhopalomastix.1
```

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Stigmacros.4
Mayriella.1
Mesostruma.1
Ochetellus.1
Oligomyrmex.2
Pheidole.6
Anonychromyrma.2
Anonychromyrma.3
Camponotis.26
Camponotus.1
Camponotus.12
Colobostruma.2
Crematogaster.3
Disturbed.lost
Doleromyrma.2
Epopostruma.1
Froggattella.1
Iridomyrmex.5
Iridomyrmex.6
Iridomyrmex.7
Iridomyrmex.8
Machomyrma.4
Machomyrma.6
Melophorus.1
Melophorus.2
Meranoplus.2
Myrmecia.2
Myrmecia.4
Myrmecorhrynchus.1
Notoncus.4
Oligomyrmex.1
Paratrechina.5
Pheidole.1
Pheidole.6.1
Polyrachis.1
Polyrachis.3
Polyrachis.5
Polyrachis.7
Polyrachis.8
Prolasius.4
Prolasius.7
Rhopalomastix.5
Stigmacros.2
Stigmacros.3
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: BGHF_SSTF

                          average      sd   ratio     ava     avb cumsum     p
Pheidole.5                0.04728 0.03956 1.19510 0.44630 1.08140  0.062 0.017
Tetramorium.3             0.04012 0.03587 1.11840 0.71720 0.25510  0.114 0.002
Anonychromyrma.1          0.03661 0.03367 1.08740 0.69070 0.49420  0.162 0.050
Rhytidiponera..metallica. 0.03363 0.03803 0.88450 0.98380 1.22640  0.207 0.349
Pheidole.7                0.03164 0.03434 0.92150 0.50690 0.24530  0.248 0.152
Crematogaster.1           0.03090 0.03234 0.95540 0.20000 0.56960  0.289 0.001
Monomorium.1              0.02876 0.03777 0.76140 0.45680 0.20030  0.326 0.186
Tapinoma.1                0.02771 0.02968 0.93340 0.42520 0.38460  0.363 0.885
Meranoplus.1              0.02179 0.03107 0.70120 0.34180 0.15380  0.391 0.888
Paratrechina.2            0.02106 0.02933 0.71790 0.15440 0.32220  0.419 0.318
Machomyrma.1              0.01990 0.02632 0.75610 0.00000 0.41370  0.445 0.523
Notoncus.1                0.01961 0.02981 0.65790 0.20000 0.24530  0.470 0.950
Pheidole.6                0.01656 0.02603 0.63620 0.00000 0.32220  0.492 0.160
Paratrechina.4            0.01614 0.02494 0.64730 0.26670 0.09150  0.513 0.223
Paratrechina.1            0.01610 0.02596 0.62000 0.21260 0.15380  0.534 0.971
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Pheidole.7.1              0.01597 0.02834 0.56370 0.30690 0.00000  0.555 0.148
Tetramorium.4             0.01529 0.02607 0.58650 0.30040 0.00000  0.575 0.010
Pristomyrmex.2            0.01409 0.02577 0.54690 0.14590 0.15380  0.594 0.567
Pristomyrmex.1            0.01377 0.02511 0.54850 0.21260 0.07690  0.612 0.012
Doleromyrma.1             0.01349 0.02543 0.53070 0.00000 0.23080  0.630 0.424
Solenopsis.1              0.01196 0.02470 0.48430 0.20000 0.00000  0.645 0.039
Camponotus.consobrinus    0.01148 0.02157 0.53230 0.00000 0.24530  0.660 0.566
Iridomyrmex.purpureus     0.01099 0.02700 0.40730 0.00000 0.20030  0.675 0.919
Papyrius.2                0.01076 0.02258 0.47680 0.06670 0.15380  0.689 0.472
Machomyrma.4              0.01054 0.02600 0.40530 0.00000 0.15380  0.703 0.010
Prolasius.6               0.01052 0.02193 0.47970 0.06670 0.16840  0.717 0.335
Ochetellus.1              0.01026 0.02493 0.41170 0.00000 0.16840  0.730 0.654
Colobostruma.1            0.01014 0.02103 0.48230 0.20000 0.00000  0.743 0.012
Crematogaster.2           0.00923 0.02469 0.37390 0.06670 0.07690  0.755 0.759
Camponotus.12             0.00800 0.01933 0.41400 0.00000 0.15380  0.766 0.714
Mesostruma.1              0.00789 0.02143 0.36830 0.06670 0.09150  0.776 0.623
Rhopalomastix.3           0.00789 0.02085 0.37840 0.15860 0.00000  0.786 0.078
Mayriella.2               0.00715 0.01883 0.37960 0.06670 0.07690  0.796 0.713
Myrmecia.1                0.00686 0.01811 0.37880 0.13330 0.00000  0.805 0.100
Myrmecia.3                0.00674 0.01786 0.37720 0.13330 0.00000  0.814 0.491
Heteroponera.1            0.00670 0.01775 0.37760 0.13330 0.00000  0.822 0.822
Prolasius.3               0.00648 0.01681 0.38550 0.06670 0.07690  0.831 0.399
Doleromyrma.3             0.00605 0.01574 0.38450 0.13330 0.00000  0.839 0.884
Rhopalomastix.2           0.00593 0.02266 0.26160 0.09430 0.00000  0.847 0.312
Prolasius.7               0.00505 0.01806 0.27960 0.00000 0.07690  0.853 0.060
Stigmacros.2              0.00493 0.01745 0.28270 0.00000 0.09150  0.860 0.056
Anonychromyrma.2          0.00472 0.01681 0.28090 0.00000 0.07690  0.866 0.036
Polyrachis.7              0.00444 0.01577 0.28180 0.00000 0.07690  0.872 0.048
Stigmacros.1              0.00444 0.01577 0.28180 0.00000 0.07690  0.877 0.347
Pheidole.1                0.00441 0.01566 0.28190 0.00000 0.07690  0.883 0.051
Paratrechina.6            0.00432 0.01644 0.26270 0.07930 0.00000  0.889 0.268
Prolasius.2               0.00432 0.01644 0.26270 0.07930 0.00000  0.895 0.311
Prolasius.1               0.00399 0.01514 0.26330 0.07930 0.00000  0.900 0.585
Strumigenys.2             0.00398 0.01520 0.26200 0.06670 0.00000  0.905 0.270
Camponotis.26             0.00375 0.01320 0.28380 0.00000 0.07690  0.910 0.049
Camponotus.1              0.00375 0.01320 0.28380 0.00000 0.07690  0.915 0.049
Epopostruma.1             0.00375 0.01320 0.28380 0.00000 0.07690  0.920 0.049
Polyrachis.3              0.00375 0.01320 0.28380 0.00000 0.07690  0.925 0.520
Plagiolepis.1             0.00363 0.01383 0.26270 0.06670 0.00000  0.929 0.268
Anonychromyrma.3          0.00356 0.01252 0.28420 0.00000 0.07690  0.934 0.054
Myrmecorhrynchus.1        0.00356 0.01252 0.28420 0.00000 0.07690  0.939 0.054
Paratrechina.5            0.00356 0.01252 0.28420 0.00000 0.07690  0.944 0.054
Iridomyrmex.4             0.00356 0.01251 0.28420 0.00000 0.07690  0.948 0.752
Oligomyrmex.2             0.00356 0.01251 0.28420 0.00000 0.07690  0.953 0.194
Prolasius.4               0.00356 0.01251 0.28420 0.00000 0.07690  0.957 0.052
Notoncus.3                0.00352 0.01340 0.26290 0.06670 0.00000  0.962 0.252
Polyrachis.2              0.00352 0.01340 0.26290 0.06670 0.00000  0.967 0.568
Probolomyrmex.1           0.00338 0.01283 0.26320 0.06670 0.00000  0.971 0.285
Tetramorium.5             0.00338 0.01283 0.26320 0.06670 0.00000  0.976 0.285
Papyrius.1                0.00335 0.01273 0.26330 0.06670 0.00000  0.980 0.458
Pheidole.2                0.00335 0.01273 0.26330 0.06670 0.00000  0.984 0.257
Leptomyrmex.1             0.00333 0.01265 0.26330 0.06670 0.00000  0.989 0.260
Stigmacros.3              0.00296 0.01035 0.28550 0.00000 0.07690  0.993 0.808
Mayriella.1               0.00284 0.01076 0.26410 0.06670 0.00000  0.996 0.543
Strumigenys.1             0.00284 0.01076 0.26410 0.06670 0.00000  1.000 0.725
Colobostruma.2            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Crematogaster.3           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Disturbed.lost            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Doleromyrma.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Dolichonderus.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Froggattella.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.6             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.7             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
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Iridomyrmex.8             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.3              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.6              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Melophorus.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Melophorus.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Meranoplus.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Oligomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pachychondyla.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pachycondyla.2            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.6.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.5              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.8              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.5           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.4              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Technomyrmex.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA

Pheidole.5                *
Tetramorium.3             **
Anonychromyrma.1          *
Rhytidiponera..metallica.
Pheidole.7
Crematogaster.1           **
Monomorium.1
Tapinoma.1
Meranoplus.1
Paratrechina.2
Machomyrma.1
Notoncus.1
Pheidole.6
Paratrechina.4
Paratrechina.1
Pheidole.7.1
Tetramorium.4             **
Pristomyrmex.2
Pristomyrmex.1            *
Doleromyrma.1
Solenopsis.1              *
Camponotus.consobrinus
Iridomyrmex.purpureus
Papyrius.2
Machomyrma.4              **
Prolasius.6
Ochetellus.1
Colobostruma.1            *
Crematogaster.2
Camponotus.12
Mesostruma.1
Rhopalomastix.3           .
Mayriella.2
Myrmecia.1                .
Myrmecia.3
Heteroponera.1
Prolasius.3
Doleromyrma.3
Rhopalomastix.2
Prolasius.7               .
Stigmacros.2              .
Anonychromyrma.2          *
Polyrachis.7              *
Stigmacros.1
```

```
Pheidole.1               .
Paratrechina.6
Prolasius.2
Prolasius.1
Strumigenys.2
Camponotis.26            *
Camponotus.1             *
Epopostruma.1            *
Polyrachis.3
Plagiolepis.1
Anonychromyrma.3         .
Myrmecorhrynchus.1       .
Paratrechina.5           .
Iridomyrmex.4
Oligomyrmex.2
Prolasius.4              .
Notoncus.3
Polyrachis.2
Probolomyrmex.1
Tetramorium.5
Papyrius.1
Pheidole.2
Leptomyrmex.1
Stigmacros.3
Mayriella.1
Strumigenys.1
Colobostruma.2
Crematogaster.3
Disturbed.lost
Doleromyrma.2
Dolichonderus.1
Froggattella.1
Iridomyrmex.2
Iridomyrmex.5
Iridomyrmex.6
Iridomyrmex.7
Iridomyrmex.8
Machomyrma.3
Machomyrma.6
Melophorus.1
Melophorus.2
Meranoplus.2
Myrmecia.2
Myrmecia.4
Notoncus.4
Oligomyrmex.1
Pachychondyla.1
Pachycondyla.2
Pheidole.6.1
Polyrachis.1
Polyrachis.5
Polyrachis.8
Rhopalomastix.1
Rhopalomastix.5
Stigmacros.4
Technomyrmex.1
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: CCIF_CPW

                         average      sd   ratio     ava     avb cumsum     p
Pheidole.5               0.03206 0.03256 0.98460 1.22750 0.92190  0.047 0.930
Tapinoma.1               0.03099 0.02800 1.10670 0.65120 0.73330  0.093 0.495
Meranoplus.1             0.02893 0.02737 1.05720 0.33620 0.65660  0.136 0.299
```

```
Iridomyrmex.purpureus     0.02750 0.02985 0.92150 0.26180 0.54280  0.176 0.027
Paratrechina.1            0.02696 0.02684 1.00460 0.25000 0.57810  0.216 0.210
Notoncus.1                0.02613 0.02863 0.91270 0.37000 0.42060  0.255 0.602
Machomyrma.1              0.02456 0.02646 0.92830 0.33620 0.43750  0.291 0.108
Pheidole.7                0.02400 0.02762 0.86890 0.38970 0.34410  0.327 0.803
Mesostruma.1              0.01697 0.02569 0.66080 0.00000 0.39440  0.352 0.024
Monomorium.1              0.01693 0.02906 0.58250 0.29450 0.16760  0.377 0.872
Iridomyrmex.5             0.01657 0.02626 0.63080 0.00000 0.34800  0.401 0.001
Ochetellus.1              0.01623 0.02231 0.72760 0.12500 0.32430  0.425 0.132
Camponotus.consobrinus    0.01607 0.02473 0.64990 0.12500 0.25000  0.449 0.157
Iridomyrmex.2             0.01595 0.02432 0.65580 0.12500 0.27370  0.473 0.114
Rhytidiponera..metallica. 0.01589 0.02204 0.72090 1.30250 1.45860  0.496 0.998
Anonychromyrma.1          0.01553 0.03085 0.50350 0.25380 0.08230  0.519 0.999
Camponotus.12             0.01540 0.02177 0.70720 0.19930 0.25000  0.542 0.054
Doleromyrma.1             0.01473 0.02288 0.64370 0.18750 0.19930  0.564 0.297
Paratrechina.2            0.01424 0.02191 0.64980 0.12500 0.25000  0.585 0.902
Pheidole.6                0.01356 0.02101 0.64540 0.19930 0.18750  0.605 0.407
Papyrius.2                0.01304 0.02789 0.46770 0.00000 0.21120  0.624 0.265
Prolasius.6               0.01288 0.02309 0.55760 0.00000 0.31540  0.643 0.153
Mayriella.2               0.01279 0.02114 0.60490 0.06250 0.25000  0.662 0.199
Iridomyrmex.7             0.01210 0.02174 0.55680 0.26180 0.00000  0.680 0.026
Crematogaster.1           0.01193 0.02094 0.56950 0.00000 0.25000  0.697 0.907
Pristomyrmex.2            0.01182 0.02325 0.50820 0.07430 0.22520  0.715 0.685
Heteroponera.1            0.01130 0.02161 0.52300 0.18750 0.07430  0.731 0.436
Stigmacros.3              0.01053 0.01998 0.52680 0.06250 0.21910  0.747 0.048
Pheidole.7.1              0.00985 0.02127 0.46320 0.00000 0.19930  0.761 0.594
Polyrachis.5              0.00969 0.02078 0.46630 0.18750 0.00000  0.776 0.064
Rhopalomastix.1           0.00964 0.02216 0.43480 0.14480 0.07430  0.790 0.166
Machomyrma.3              0.00950 0.02072 0.45850 0.18750 0.00000  0.804 0.282
Crematogaster.3           0.00837 0.02340 0.35770 0.16760 0.00000  0.817 0.182
Paratrechina.4            0.00795 0.01827 0.43500 0.14480 0.06250  0.828 0.864
Iridomyrmex.4             0.00730 0.02037 0.35830 0.06250 0.09350  0.839 0.327
Polyrachis.3              0.00729 0.01635 0.44580 0.06250 0.12500  0.850 0.204
Polyrachis.2              0.00676 0.01508 0.44830 0.06250 0.12500  0.860 0.197
Notoncus.4                0.00655 0.01775 0.36910 0.13680 0.00000  0.870 0.191
Polyrachis.8              0.00626 0.01674 0.37380 0.00000 0.12500  0.879 0.039
Pachycondyla.2            0.00536 0.01456 0.36830 0.00000 0.12500  0.887 0.532
Doleromyrma.3             0.00513 0.01372 0.37380 0.00000 0.12500  0.894 0.925
Melophorus.2              0.00481 0.01332 0.36160 0.06250 0.07430  0.901 0.192
Papyrius.1                0.00474 0.01322 0.35850 0.06250 0.06250  0.908 0.386
Prolasius.1               0.00460 0.01285 0.35820 0.06250 0.06250  0.915 0.551
Myrmecia.2                0.00338 0.01323 0.25520 0.00000 0.06250  0.920 0.191
Doleromyrma.2             0.00336 0.01335 0.25140 0.06250 0.00000  0.925 0.426
Polyrachis.1              0.00327 0.01298 0.25170 0.06250 0.00000  0.930 0.391
Rhopalomastix.2           0.00322 0.01277 0.25190 0.06250 0.00000  0.935 0.657
Mayriella.1               0.00314 0.01228 0.25550 0.00000 0.06250  0.939 0.287
Oligomyrmex.1             0.00314 0.01228 0.25550 0.00000 0.06250  0.944 0.192
Melophorus.1              0.00310 0.01228 0.25230 0.06250 0.00000  0.949 0.424
Stigmacros.4              0.00296 0.01157 0.25570 0.00000 0.06250  0.953 0.549
Iridomyrmex.6             0.00292 0.01143 0.25580 0.00000 0.06250  0.957 0.187
Froggattella.1            0.00283 0.01118 0.25310 0.06250 0.00000  0.961 0.424
Strumigenys.1             0.00283 0.01118 0.25310 0.06250 0.00000  0.966 0.669
Meranoplus.2              0.00275 0.01072 0.25600 0.00000 0.06250  0.970 0.199
Myrmecia.3                0.00275 0.01072 0.25600 0.00000 0.06250  0.974 0.868
Colobostruma.2            0.00263 0.01036 0.25370 0.06250 0.00000  0.978 0.397
Machomyrma.6              0.00262 0.01033 0.25370 0.06250 0.00000  0.981 0.449
Pheidole.6.1              0.00238 0.00929 0.25640 0.00000 0.06250  0.985 0.173
Iridomyrmex.8             0.00204 0.00794 0.25670 0.00000 0.06250  0.988 0.182
Myrmecia.1                0.00204 0.00794 0.25670 0.00000 0.06250  0.991 0.743
Myrmecia.4                0.00204 0.00794 0.25670 0.00000 0.06250  0.994 0.182
Rhopalomastix.5           0.00204 0.00794 0.25670 0.00000 0.06250  0.997 0.182
Tetramorium.4             0.00204 0.00794 0.25670 0.00000 0.06250  1.000 0.911
Anonychromyrma.2          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Anonychromyrma.3          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotis.26             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
```

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Camponotus.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Colobostruma.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Crematogaster.2           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Disturbed.lost            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Dolichonderus.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Epopostruma.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Leptomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.4              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecorhrynchus.1        0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.3                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Oligomyrmex.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pachychondyla.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.5            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.6            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.1                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Plagiolepis.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.7              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pristomyrmex.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Probolomyrmex.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.2               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.3               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.4               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.7               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.3           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Solenopsis.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Strumigenys.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Technomyrmex.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Tetramorium.3             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Tetramorium.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA

Pheidole.5
Tapinoma.1
Meranoplus.1
Iridomyrmex.purpureus     *
Paratrechina.1
Notoncus.1
Machomyrma.1
Pheidole.7
Mesostruma.1              *
Monomorium.1
Iridomyrmex.5             **
Ochetellus.1
Camponotus.consobrinus
Iridomyrmex.2
Rhytidiponera..metallica.
Anonychromyrma.1
Camponotus.12             .
Doleromyrma.1
Paratrechina.2
Pheidole.6
Papyrius.2
Prolasius.6
Mayriella.2
Iridomyrmex.7             *
Crematogaster.1
Pristomyrmex.2
Heteroponera.1
Stigmacros.3              *
Pheidole.7.1
Polyrachis.5              .
Rhopalomastix.1
Machomyrma.3
```

```
Crematogaster.3
Paratrechina.4
Iridomyrmex.4
Polyrachis.3
Polyrachis.2
Notoncus.4
Polyrachis.8              *
Pachycondyla.2
Doleromyrma.3
Melophorus.2
Papyrius.1
Prolasius.1
Myrmecia.2
Doleromyrma.2
Polyrachis.1
Rhopalomastix.2
Mayriella.1
Oligomyrmex.1
Melophorus.1
Stigmacros.4
Iridomyrmex.6
Froggattella.1
Strumigenys.1
Meranoplus.2
Myrmecia.3
Colobostruma.2
Machomyrma.6
Pheidole.6.1
Iridomyrmex.8
Myrmecia.1
Myrmecia.4
Rhopalomastix.5
Tetramorium.4
Anonychromyrma.2
Anonychromyrma.3
Camponotis.26
Camponotus.1
Colobostruma.1
Crematogaster.2
Disturbed.lost
Dolichonderus.1
Epopostruma.1
Leptomyrmex.1
Machomyrma.4
Myrmecorhrynchus.1
Notoncus.3
Oligomyrmex.2
Pachychondyla.1
Paratrechina.5
Paratrechina.6
Pheidole.1
Pheidole.2
Plagiolepis.1
Polyrachis.7
Pristomyrmex.1
Probolomyrmex.1
Prolasius.2
Prolasius.3
Prolasius.4
Prolasius.7
Rhopalomastix.3
Solenopsis.1
Stigmacros.1
Stigmacros.2
Strumigenys.2
```

```
Technomyrmex.1
Tetramorium.3
Tetramorium.5
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: CCIF_SRW

                          average      sd   ratio     ava     avb cumsum     p
Rhytidiponera..metallica. 0.04257 0.03775 1.12770 1.30250 0.79590  0.057 0.010
Pheidole.5                0.04182 0.03620 1.15540 1.22750 0.75730  0.113 0.132
Tapinoma.1                0.03669 0.03424 1.07160 0.65120 0.18750  0.163 0.016
Notoncus.1                0.03334 0.03491 0.95500 0.37000 0.48480  0.207 0.028
Anonychromyrma.1          0.03050 0.04018 0.75920 0.25380 0.35530  0.248 0.391
Pheidole.7                0.02855 0.03471 0.82260 0.38970 0.26180  0.287 0.399
Meranoplus.1              0.02722 0.03452 0.78840 0.33620 0.24430  0.323 0.497
Crematogaster.2           0.02652 0.03561 0.74470 0.00000 0.43640  0.359 0.001
Monomorium.1              0.02564 0.03936 0.65160 0.29450 0.27240  0.393 0.353
Paratrechina.1            0.02503 0.03087 0.81080 0.25000 0.34410  0.427 0.402
Doleromyrma.3             0.02279 0.04130 0.55180 0.00000 0.33670  0.458 0.016
Machomyrma.1              0.02166 0.03247 0.66710 0.33620 0.06250  0.487 0.344
Paratrechina.2            0.02106 0.02861 0.73610 0.12500 0.33230  0.515 0.318
Iridomyrmex.purpureus     0.01723 0.02873 0.59990 0.26180 0.06250  0.538 0.643
Heteroponera.1            0.01655 0.02894 0.57170 0.18750 0.12500  0.560 0.045
Machomyrma.3              0.01645 0.02882 0.57080 0.18750 0.12500  0.583 0.004
Tetramorium.3             0.01577 0.02844 0.55440 0.00000 0.29710  0.604 0.914
Iridomyrmex.7             0.01509 0.02700 0.55880 0.26180 0.00000  0.624 0.001
Paratrechina.4            0.01444 0.02783 0.51880 0.14480 0.12500  0.643 0.345
Doleromyrma.1             0.01419 0.02703 0.52470 0.18750 0.06250  0.662 0.312
Iridomyrmex.2             0.01410 0.02789 0.50560 0.12500 0.12500  0.681 0.245
Pristomyrmex.2            0.01367 0.02639 0.51790 0.07430 0.21340  0.700 0.592
Polyrachis.5              0.01242 0.02652 0.46830 0.18750 0.00000  0.716 0.001
Rhopalomastix.1           0.01228 0.02825 0.43460 0.14480 0.06250  0.733 0.029
Pheidole.6                0.01166 0.02200 0.52990 0.19930 0.06250  0.749 0.595
Crematogaster.3           0.01062 0.02951 0.35990 0.16760 0.00000  0.763 0.001
Camponotus.consobrinus    0.00998 0.02307 0.43250 0.12500 0.06250  0.776 0.709
Camponotus.12             0.00976 0.02087 0.46790 0.19930 0.00000  0.789 0.564
Ochetellus.1              0.00876 0.01988 0.44060 0.12500 0.06250  0.801 0.795
Notoncus.4                0.00824 0.02220 0.37100 0.13680 0.00000  0.812 0.001
Technomyrmex.1            0.00806 0.02172 0.37120 0.00000 0.12500  0.823 0.041
Myrmecia.3                0.00804 0.02185 0.36780 0.00000 0.12500  0.834 0.364
Pachycondyla.2            0.00793 0.02127 0.37260 0.00000 0.13680  0.844 0.214
Prolasius.3               0.00733 0.01982 0.36990 0.00000 0.13680  0.854 0.227
Iridomyrmex.4             0.00717 0.02019 0.35530 0.06250 0.06250  0.864 0.355
Dolichonderus.1           0.00707 0.01899 0.37250 0.00000 0.12500  0.873 0.034
Stigmacros.1              0.00679 0.01819 0.37320 0.00000 0.12500  0.882 0.159
Strumigenys.1             0.00657 0.01830 0.35900 0.06250 0.06250  0.891 0.079
Prolasius.1               0.00650 0.01816 0.35820 0.06250 0.06250  0.900 0.299
Mayriella.2               0.00630 0.01755 0.35920 0.06250 0.06250  0.909 0.797
Doleromyrma.2             0.00434 0.01721 0.25250 0.06250 0.00000  0.914 0.006
Polyrachis.1              0.00420 0.01660 0.25280 0.06250 0.00000  0.920 0.003
Rhopalomastix.2           0.00412 0.01626 0.25300 0.06250 0.00000  0.926 0.409
Melophorus.1              0.00392 0.01548 0.25350 0.06250 0.00000  0.931 0.003
Crematogaster.1           0.00390 0.01533 0.25440 0.00000 0.06250  0.936 0.999
Froggattella.1            0.00351 0.01380 0.25430 0.06250 0.00000  0.941 0.004
Papyrius.2                0.00346 0.01356 0.25510 0.00000 0.06250  0.945 0.948
Solenopsis.1              0.00344 0.01348 0.25510 0.00000 0.06250  0.950 0.760
Pachychondyla.1           0.00339 0.01327 0.25520 0.00000 0.06250  0.955 0.168
Polyrachis.2              0.00328 0.01289 0.25480 0.06250 0.00000  0.959 0.635
Colobostruma.2            0.00320 0.01257 0.25490 0.06250 0.00000  0.963 0.004
Pheidole.7.1              0.00320 0.01253 0.25540 0.00000 0.06250  0.968 0.959
Prolasius.2               0.00320 0.01253 0.25540 0.00000 0.06250  0.972 0.545
Stigmacros.4              0.00320 0.01253 0.25540 0.00000 0.06250  0.976 0.284
Machomyrma.6              0.00320 0.01253 0.25490 0.06250 0.00000  0.981 0.005
Melophorus.2              0.00320 0.01253 0.25490 0.06250 0.00000  0.985 0.186
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Polyrachis.3              0.00320 0.01253 0.25490 0.06250 0.00000  0.989 0.596
Oligomyrmex.2             0.00278 0.01087 0.25590 0.00000 0.06250  0.993 0.453
Papyrius.1                0.00267 0.01044 0.25580 0.06250 0.00000  0.996 0.663
Stigmacros.3              0.00267 0.01044 0.25580 0.06250 0.00000  1.000 0.820
Anonychromyrma.2          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Anonychromyrma.3          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotis.26             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotus.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Colobostruma.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Disturbed.lost            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Epopostruma.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.6             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.8             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Leptomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.4              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Mayriella.1               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Meranoplus.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Mesostruma.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.1                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecorhrynchus.1        0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.3                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Oligomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.5            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.6            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.1                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.6.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Plagiolepis.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.7              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.8              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pristomyrmex.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Probolomyrmex.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.4               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.6               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.7               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.3           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.5           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Strumigenys.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Tetramorium.4             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Tetramorium.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA

Rhytidiponera..metallica. **
Pheidole.5
Tapinoma.1                *
Notoncus.1                *
Anonychromyrma.1
Pheidole.7
Meranoplus.1
Crematogaster.2           **
Monomorium.1
Paratrechina.1
Doleromyrma.3             *
Machomyrma.1
Paratrechina.2
Iridomyrmex.purpureus
Heteroponera.1            *
Machomyrma.3              **
Tetramorium.3
Iridomyrmex.7             **
Paratrechina.4
Doleromyrma.1
```

```
Iridomyrmex.2
Pristomyrmex.2
Polyrachis.5              **
Rhopalomastix.1           *
Pheidole.6
Crematogaster.3           **
Camponotus.consobrinus
Camponotus.12
Ochetellus.1
Notoncus.4                **
Technomyrmex.1            *
Myrmecia.3
Pachycondyla.2
Prolasius.3
Iridomyrmex.4
Dolichonderus.1           *
Stigmacros.1
Strumigenys.1             .
Prolasius.1
Mayriella.2
Doleromyrma.2             **
Polyrachis.1              **
Rhopalomastix.2
Melophorus.1              **
Crematogaster.1
Froggattella.1            **
Papyrius.2
Solenopsis.1
Pachychondyla.1
Polyrachis.2
Colobostruma.2            **
Pheidole.7.1
Prolasius.2
Stigmacros.4
Machomyrma.6              **
Melophorus.2
Polyrachis.3
Oligomyrmex.2
Papyrius.1
Stigmacros.3
Anonychromyrma.2
Anonychromyrma.3
Camponotis.26
Camponotus.1
Colobostruma.1
Disturbed.lost
Epopostruma.1
Iridomyrmex.5
Iridomyrmex.6
Iridomyrmex.8
Leptomyrmex.1
Machomyrma.4
Mayriella.1
Meranoplus.2
Mesostruma.1
Myrmecia.1
Myrmecia.2
Myrmecia.4
Myrmecorhrynchus.1
Notoncus.3
Oligomyrmex.1
Paratrechina.5
Paratrechina.6
Pheidole.1
Pheidole.2
```

```
Pheidole.6.1
Plagiolepis.1
Polyrachis.7
Polyrachis.8
Pristomyrmex.1
Probolomyrmex.1
Prolasius.4
Prolasius.6
Prolasius.7
Rhopalomastix.3
Rhopalomastix.5
Stigmacros.2
Strumigenys.2
Tetramorium.4
Tetramorium.5
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: CCIF_SSTF

                         average      sd   ratio     ava     avb cumsum     p
Tapinoma.1               0.03262 0.03060 1.06610 0.65120 0.38460  0.048 0.260
Anonychromyrma.1         0.03136 0.03725 0.84210 0.25380 0.49420  0.094 0.366
Crematogaster.1          0.02882 0.03195 0.90180 0.00000 0.56960  0.136 0.007
Pheidole.5               0.02692 0.03286 0.81920 1.22750 1.08140  0.175 0.996
Machomyrma.1             0.02656 0.02988 0.88910 0.33620 0.41370  0.214 0.051
Pheidole.7               0.02651 0.03231 0.82060 0.38970 0.24530  0.253 0.630
Notoncus.1               0.02578 0.03264 0.78980 0.37000 0.24530  0.290 0.616
Rhytidiponera..metallica. 0.02298 0.03038 0.75630 1.30250 1.22640  0.324 0.919
Meranoplus.1             0.02210 0.02966 0.74510 0.33620 0.15380  0.356 0.870
Iridomyrmex.purpureus    0.02041 0.03009 0.67830 0.26180 0.20030  0.386 0.395
Pheidole.6               0.02040 0.02656 0.76820 0.19930 0.32220  0.416 0.019
Monomorium.1             0.02023 0.03295 0.61410 0.29450 0.20030  0.446 0.707
Paratrechina.2           0.01989 0.02774 0.71710 0.12500 0.32220  0.474 0.444
Doleromyrma.1            0.01899 0.02775 0.68420 0.18750 0.23080  0.502 0.062
Paratrechina.1           0.01753 0.02640 0.66420 0.25000 0.15380  0.528 0.944
Camponotus.consobrinus   0.01541 0.02442 0.63080 0.12500 0.24530  0.550 0.227
Tetramorium.3            0.01462 0.02929 0.49920 0.00000 0.25510  0.572 0.941
Camponotus.12            0.01447 0.02343 0.61770 0.19930 0.15380  0.593 0.114
Ochetellus.1             0.01412 0.02598 0.54340 0.12500 0.16840  0.614 0.281
Iridomyrmex.7            0.01378 0.02463 0.55940 0.26180 0.00000  0.634 0.005
Polyrachis.5             0.01120 0.02387 0.46900 0.18750 0.00000  0.650 0.023
Heteroponera.1           0.01100 0.02391 0.45990 0.18750 0.00000  0.666 0.456
Machomyrma.3             0.01099 0.02394 0.45900 0.18750 0.00000  0.682 0.158
Paratrechina.4           0.01052 0.02267 0.46410 0.14480 0.09150  0.698 0.704
Machomyrma.4             0.01022 0.02464 0.41490 0.00000 0.15380  0.713 0.010
Pristomyrmex.2           0.00983 0.02038 0.48230 0.07430 0.15380  0.727 0.825
Crematogaster.3          0.00962 0.02673 0.35990 0.16760 0.00000  0.741 0.107
Rhopalomastix.1          0.00884 0.02426 0.36460 0.14480 0.00000  0.754 0.246
Papyrius.2               0.00861 0.02074 0.41500 0.00000 0.15380  0.767 0.607
Prolasius.6              0.00777 0.01909 0.40710 0.00000 0.16840  0.778 0.575
Notoncus.4               0.00749 0.02019 0.37110 0.13680 0.00000  0.789 0.108
Iridomyrmex.4            0.00682 0.01819 0.37510 0.06250 0.07690  0.799 0.399
Iridomyrmex.2            0.00664 0.01802 0.36860 0.12500 0.00000  0.809 0.837
Polyrachis.3             0.00624 0.01635 0.38150 0.06250 0.07690  0.818 0.267
Mayriella.2              0.00607 0.01591 0.38170 0.06250 0.07690  0.827 0.813
Crematogaster.2          0.00570 0.02016 0.28280 0.00000 0.07690  0.835 0.912
Mesostruma.1             0.00549 0.01929 0.28450 0.00000 0.09150  0.843 0.849
Stigmacros.3             0.00513 0.01339 0.38320 0.06250 0.07690  0.850 0.561
Prolasius.7              0.00492 0.01732 0.28400 0.00000 0.07690  0.858 0.068
Stigmacros.2             0.00485 0.01699 0.28520 0.00000 0.09150  0.865 0.078
Anonychromyrma.2         0.00461 0.01622 0.28450 0.00000 0.07690  0.871 0.091
Polyrachis.7             0.00435 0.01529 0.28490 0.00000 0.07690  0.878 0.071
Stigmacros.1             0.00435 0.01529 0.28490 0.00000 0.07690  0.884 0.355
Pheidole.1               0.00433 0.01518 0.28490 0.00000 0.07690  0.890 0.087
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Pristomyrmex.1            0.00407 0.01429 0.28520 0.00000 0.07690  0.896 0.627
Doleromyrma.2             0.00390 0.01542 0.25280 0.06250 0.00000  0.902 0.270
Polyrachis.1              0.00378 0.01493 0.25310 0.06250 0.00000  0.908 0.283
Rhopalomastix.2           0.00371 0.01466 0.25320 0.06250 0.00000  0.913 0.557
Camponotis.26             0.00369 0.01292 0.28570 0.00000 0.07690  0.918 0.084
Camponotus.1              0.00369 0.01292 0.28570 0.00000 0.07690  0.924 0.084
Epopostruma.1             0.00369 0.01292 0.28570 0.00000 0.07690  0.929 0.084
Melophorus.1              0.00356 0.01402 0.25360 0.06250 0.00000  0.934 0.268
Anonychromyrma.3          0.00351 0.01228 0.28590 0.00000 0.07690  0.940 0.067
Myrmecorhrynchus.1        0.00351 0.01228 0.28590 0.00000 0.07690  0.945 0.067
Paratrechina.5            0.00351 0.01228 0.28590 0.00000 0.07690  0.950 0.067
Prolasius.3               0.00351 0.01228 0.28590 0.00000 0.07690  0.955 0.677
Oligomyrmex.2             0.00351 0.01227 0.28590 0.00000 0.07690  0.960 0.209
Prolasius.4               0.00351 0.01227 0.28590 0.00000 0.07690  0.965 0.080
Froggattella.1            0.00321 0.01264 0.25430 0.06250 0.00000  0.970 0.273
Strumigenys.1             0.00321 0.01264 0.25430 0.06250 0.00000  0.975 0.648
Polyrachis.2              0.00302 0.01187 0.25460 0.06250 0.00000  0.979 0.679
Colobostruma.2            0.00296 0.01160 0.25470 0.06250 0.00000  0.983 0.254
Prolasius.1               0.00296 0.01160 0.25470 0.06250 0.00000  0.988 0.718
Machomyrma.6              0.00295 0.01157 0.25470 0.06250 0.00000  0.992 0.276
Melophorus.2              0.00295 0.01157 0.25470 0.06250 0.00000  0.996 0.405
Papyrius.1                0.00250 0.00977 0.25550 0.06250 0.00000  1.000 0.729
Colobostruma.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Disturbed.lost            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Doleromyrma.3             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Dolichonderus.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.6             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.8             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Leptomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Mayriella.1               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Meranoplus.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.1                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.3                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.3                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Oligomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pachychondyla.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pachycondyla.2            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.6            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.6.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.7.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Plagiolepis.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.8              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Probolomyrmex.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.2               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.3           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.5           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Solenopsis.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Stigmacros.4              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Strumigenys.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Technomyrmex.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Tetramorium.4             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Tetramorium.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA

Tapinoma.1
Anonychromyrma.1
Crematogaster.1           **
Pheidole.5
Machomyrma.1              .
Pheidole.7
Notoncus.1
Rhytidiponera..metallica.
```

```
Meranoplus.1
Iridomyrmex.purpureus
Pheidole.6               *
Monomorium.1
Paratrechina.2
Doleromyrma.1            .
Paratrechina.1
Camponotus.consobrinus
Tetramorium.3
Camponotus.12
Ochetellus.1
Iridomyrmex.7            **
Polyrachis.5             *
Heteroponera.1
Machomyrma.3
Paratrechina.4
Machomyrma.4             **
Pristomyrmex.2
Crematogaster.3
Rhopalomastix.1
Papyrius.2
Prolasius.6
Notoncus.4
Iridomyrmex.4
Iridomyrmex.2
Polyrachis.3
Mayriella.2
Crematogaster.2
Mesostruma.1
Stigmacros.3
Prolasius.7              .
Stigmacros.2             .
Anonychromyrma.2         .
Polyrachis.7             .
Stigmacros.1
Pheidole.1               .
Pristomyrmex.1
Doleromyrma.2
Polyrachis.1
Rhopalomastix.2
Camponotis.26            .
Camponotus.1             .
Epopostruma.1            .
Melophorus.1
Anonychromyrma.3         .
Myrmecorhrynchus.1       .
Paratrechina.5           .
Prolasius.3
Oligomyrmex.2
Prolasius.4              .
Froggattella.1
Strumigenys.1
Polyrachis.2
Colobostruma.2
Prolasius.1
Machomyrma.6
Melophorus.2
Papyrius.1
Colobostruma.1
Disturbed.lost
Doleromyrma.3
Dolichonderus.1
Iridomyrmex.5
Iridomyrmex.6
Iridomyrmex.8
```

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Leptomyrmex.1
Mayriella.1
Meranoplus.2
Myrmecia.1
Myrmecia.2
Myrmecia.3
Myrmecia.4
Notoncus.3
Oligomyrmex.1
Pachychondyla.1
Pachycondyla.2
Paratrechina.6
Pheidole.2
Pheidole.6.1
Pheidole.7.1
Plagiolepis.1
Polyrachis.8
Probolomyrmex.1
Prolasius.2
Rhopalomastix.3
Rhopalomastix.5
Solenopsis.1
Stigmacros.4
Strumigenys.2
Technomyrmex.1
Tetramorium.4
Tetramorium.5
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: CPW_SRW

                          average      sd   ratio     ava     avb cumsum     p
Rhytidiponera..metallica. 0.03822 0.03415 1.11900 1.45860 0.79590  0.050 0.100
Pheidole.5                0.03590 0.03273 1.09680 0.92190 0.75730  0.097 0.725
Tapinoma.1                0.03476 0.03181 1.09270 0.73330 0.18750  0.142 0.075
Meranoplus.1              0.03390 0.03020 1.12240 0.65660 0.24430  0.186 0.026
Paratrechina.1            0.03007 0.02943 1.02200 0.57810 0.34410  0.225 0.034
Notoncus.1                0.02899 0.02993 0.96880 0.42060 0.48480  0.263 0.311
Iridomyrmex.purpureus     0.02813 0.03357 0.83820 0.54280 0.06250  0.300 0.013
Machomyrma.1              0.02380 0.02847 0.83590 0.43750 0.06250  0.331 0.159
Crematogaster.2           0.02281 0.03108 0.73380 0.00000 0.43640  0.361 0.021
Doleromyrma.3             0.02183 0.03467 0.62960 0.12500 0.33670  0.389 0.049
Pheidole.7                0.02160 0.02632 0.82050 0.34410 0.26180  0.417 0.934
Paratrechina.2            0.02071 0.02575 0.80440 0.25000 0.33230  0.444 0.352
Anonychromyrma.1          0.01960 0.02853 0.68720 0.08230 0.35530  0.470 0.976
Mesostruma.1              0.01824 0.02777 0.65690 0.39440 0.00000  0.494 0.008
Iridomyrmex.5             0.01798 0.02888 0.62260 0.34800 0.00000  0.517 0.001
Iridomyrmex.2             0.01790 0.02762 0.64800 0.27370 0.12500  0.540 0.034
Pristomyrmex.2            0.01765 0.02843 0.62100 0.22520 0.21340  0.563 0.245
Monomorium.1              0.01651 0.02851 0.57900 0.16760 0.27240  0.585 0.893
Papyrius.2                0.01607 0.03135 0.51270 0.21120 0.06250  0.606 0.081
Camponotus.consobrinus    0.01606 0.02662 0.60330 0.25000 0.06250  0.627 0.160
Ochetellus.1              0.01592 0.02311 0.68860 0.32430 0.06250  0.648 0.121
Crematogaster.1           0.01460 0.02391 0.61060 0.25000 0.06250  0.667 0.780
Mayriella.2               0.01391 0.02317 0.60040 0.25000 0.06250  0.685 0.094
Tetramorium.3             0.01377 0.02512 0.54840 0.00000 0.29710  0.703 0.970
Prolasius.6               0.01375 0.02477 0.55500 0.31540 0.00000  0.721 0.086
Pheidole.7.1              0.01245 0.02412 0.51630 0.19930 0.06250  0.737 0.368
Camponotus.12             0.01152 0.02073 0.55600 0.25000 0.00000  0.752 0.328
Pachycondyla.2            0.01123 0.02188 0.51330 0.12500 0.13680  0.767 0.025
Doleromyrma.1             0.01093 0.02069 0.52810 0.19930 0.06250  0.781 0.652
Pheidole.6                0.01029 0.01974 0.52150 0.18750 0.06250  0.794 0.721
Stigmacros.3              0.00964 0.02077 0.46410 0.21910 0.00000  0.807 0.072
Myrmecia.3                0.00905 0.02061 0.43880 0.06250 0.12500  0.819 0.310
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Paratrechina.4           0.00870 0.02024 0.42990 0.06250 0.12500  0.830 0.852
Heteroponera.1           0.00839 0.01875 0.44750 0.07430 0.12500  0.841 0.706
Iridomyrmex.4            0.00740 0.02104 0.35190 0.09350 0.06250  0.851 0.337
Technomyrmex.1           0.00689 0.01879 0.36650 0.00000 0.12500  0.860 0.161
Polyrachis.8             0.00678 0.01822 0.37230 0.12500 0.00000  0.868 0.002
Prolasius.3              0.00640 0.01748 0.36640 0.00000 0.13680  0.877 0.382
Dolichonderus.1          0.00614 0.01666 0.36850 0.00000 0.12500  0.885 0.167
Machomyrma.3             0.00604 0.01635 0.36910 0.00000 0.12500  0.893 0.674
Stigmacros.1             0.00592 0.01603 0.36940 0.00000 0.12500  0.900 0.393
Stigmacros.4             0.00566 0.01584 0.35730 0.06250 0.06250  0.908 0.156
Polyrachis.3             0.00561 0.01525 0.36800 0.12500 0.00000  0.915 0.350
Rhopalomastix.1          0.00545 0.01512 0.36070 0.07430 0.06250  0.922 0.577
Prolasius.1              0.00525 0.01488 0.35280 0.06250 0.06250  0.929 0.499
Polyrachis.2             0.00488 0.01303 0.37440 0.12500 0.00000  0.935 0.511
Myrmecia.2               0.00369 0.01451 0.25400 0.06250 0.00000  0.940 0.007
Mayriella.1              0.00340 0.01337 0.25450 0.06250 0.00000  0.945 0.165
Oligomyrmex.1            0.00340 0.01337 0.25450 0.06250 0.00000  0.949 0.005
Iridomyrmex.6            0.00315 0.01236 0.25500 0.06250 0.00000  0.953 0.005
Strumigenys.1            0.00301 0.01192 0.25260 0.00000 0.06250  0.957 0.674
Solenopsis.1             0.00299 0.01185 0.25260 0.00000 0.06250  0.961 0.888
Pachychondyla.1          0.00295 0.01169 0.25270 0.00000 0.06250  0.965 0.417
Meranoplus.2             0.00294 0.01153 0.25530 0.06250 0.00000  0.969 0.009
Papyrius.1               0.00294 0.01153 0.25530 0.06250 0.00000  0.973 0.526
Prolasius.2              0.00281 0.01110 0.25320 0.00000 0.06250  0.976 0.680
Melophorus.2             0.00255 0.00994 0.25650 0.07430 0.00000  0.980 0.402
Pheidole.6.1             0.00253 0.00988 0.25600 0.06250 0.00000  0.983 0.007
Oligomyrmex.2            0.00248 0.00975 0.25410 0.00000 0.06250  0.986 0.672
Iridomyrmex.8            0.00214 0.00836 0.25650 0.06250 0.00000  0.989 0.006
Myrmecia.1               0.00214 0.00836 0.25650 0.06250 0.00000  0.992 0.680
Myrmecia.4               0.00214 0.00836 0.25650 0.06250 0.00000  0.994 0.006
Rhopalomastix.5          0.00214 0.00836 0.25650 0.06250 0.00000  0.997 0.006
Tetramorium.4            0.00214 0.00836 0.25650 0.06250 0.00000  1.000 0.890
Anonychromyrma.2         0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Anonychromyrma.3         0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotis.26            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Camponotus.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Colobostruma.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Colobostruma.2           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Crematogaster.3          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Disturbed.lost           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Doleromyrma.2            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Epopostruma.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Froggattella.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.7            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Leptomyrmex.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.4             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Machomyrma.6             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Melophorus.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecorhrynchus.1       0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.3               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.4               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.5           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.6           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.1               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.2               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Plagiolepis.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.7             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pristomyrmex.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Probolomyrmex.1          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.4              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Prolasius.7              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.2          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.3          0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
```

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Stigmacros.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Strumigenys.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Tetramorium.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA

Rhytidiponera..metallica. .
Pheidole.5
Tapinoma.1                .
Meranoplus.1              *
Paratrechina.1            *
Notoncus.1
Iridomyrmex.purpureus     *
Machomyrma.1
Crematogaster.2           *
Doleromyrma.3             *
Pheidole.7
Paratrechina.2
Anonychromyrma.1
Mesostruma.1              **
Iridomyrmex.5             **
Iridomyrmex.2             *
Pristomyrmex.2
Monomorium.1
Papyrius.2                .
Camponotus.consobrinus
Ochetellus.1
Crematogaster.1
Mayriella.2               .
Tetramorium.3
Prolasius.6               .
Pheidole.7.1
Camponotus.12
Pachycondyla.2            *
Doleromyrma.1
Pheidole.6
Stigmacros.3              .
Myrmecia.3
Paratrechina.4
Heteroponera.1
Iridomyrmex.4
Technomyrmex.1
Polyrachis.8              **
Prolasius.3
Dolichonderus.1
Machomyrma.3
Stigmacros.1
Stigmacros.4
Polyrachis.3
Rhopalomastix.1
Prolasius.1
Polyrachis.2
Myrmecia.2                **
Mayriella.1
Oligomyrmex.1             **
Iridomyrmex.6             **
Strumigenys.1
Solenopsis.1
Pachychondyla.1
Meranoplus.2              **
Papyrius.1
Prolasius.2
Melophorus.2
Pheidole.6.1              **
Oligomyrmex.2
Iridomyrmex.8             **
Myrmecia.1
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Myrmecia.4               **
Rhopalomastix.5          **
Tetramorium.4
Anonychromyrma.2
Anonychromyrma.3
Camponotis.26
Camponotus.1
Colobostruma.1
Colobostruma.2
Crematogaster.3
Disturbed.lost
Doleromyrma.2
Epopostruma.1
Froggattella.1
Iridomyrmex.7
Leptomyrmex.1
Machomyrma.4
Machomyrma.6
Melophorus.1
Myrmecorhrynchus.1
Notoncus.3
Notoncus.4
Paratrechina.5
Paratrechina.6
Pheidole.1
Pheidole.2
Plagiolepis.1
Polyrachis.1
Polyrachis.5
Polyrachis.7
Pristomyrmex.1
Probolomyrmex.1
Prolasius.4
Prolasius.7
Rhopalomastix.2
Rhopalomastix.3
Stigmacros.2
Strumigenys.2
Tetramorium.5
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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: CPW_SSTF

                          average       sd    ratio      ava      avb cumsum
Tapinoma.1               0.030263 0.028420 1.065000 0.733300 0.384600  0.044
Pheidole.5               0.029517 0.030650 0.963000 0.921900 1.081400  0.086
Meranoplus.1             0.029385 0.027290 1.076900 0.656600 0.153800  0.128
Iridomyrmex.purpureus    0.027624 0.031640 0.873200 0.542800 0.200300  0.168
Crematogaster.1          0.026790 0.027370 0.979000 0.250000 0.569600  0.207
Paratrechina.1           0.026602 0.027150 0.979800 0.578100 0.153800  0.245
Machomyrma.1             0.024562 0.025890 0.948600 0.437500 0.413700  0.281
Notoncus.1               0.023488 0.027970 0.839900 0.420600 0.245300  0.315
Anonychromyrma.1         0.022670 0.028920 0.783900 0.082300 0.494200  0.347
Pheidole.7               0.020393 0.025500 0.799600 0.344100 0.245300  0.377
Paratrechina.2           0.019403 0.024620 0.788000 0.250000 0.322200  0.405
Mesostruma.1             0.019143 0.026980 0.709500 0.394400 0.091500  0.432
Camponotus.consobrinus   0.018233 0.024860 0.733500 0.250000 0.245300  0.458
Ochetellus.1             0.018070 0.024570 0.735500 0.324300 0.168400  0.485
Pheidole.6               0.017694 0.023450 0.754400 0.187500 0.322200  0.510
Papyrius.2               0.016933 0.028240 0.599700 0.211200 0.153800  0.534
Prolasius.6              0.016813 0.024780 0.678600 0.315400 0.168400  0.559
Rhytidiponera..metallica. 0.016750 0.022810 0.734300 1.458600 1.226400  0.583
Iridomyrmex.5            0.016495 0.026310 0.627000 0.348000 0.000000  0.607
Doleromyrma.1            0.016024 0.023380 0.685200 0.199300 0.230800  0.630
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Camponotus.12            0.014520 0.021640 0.670900 0.250000 0.153800  0.651
Pristomyrmex.2           0.014348 0.024190 0.593200 0.225200 0.153800  0.671
Mayriella.2              0.012995 0.021210 0.612800 0.250000 0.076900  0.690
Iridomyrmex.2            0.012878 0.023190 0.555400 0.273700 0.000000  0.709
Tetramorium.3            0.012610 0.025380 0.496800 0.000000 0.255100  0.727
Monomorium.1             0.011954 0.021280 0.561800 0.167600 0.200300  0.744
Stigmacros.3             0.010737 0.019980 0.537400 0.219100 0.076900  0.760
Pheidole.7.1             0.009809 0.021290 0.460700 0.199300 0.000000  0.774
Machomyrma.4             0.008692 0.021210 0.409900 0.000000 0.153800  0.786
Polyrachis.3             0.007763 0.016830 0.461200 0.125000 0.076900  0.797
Iridomyrmex.4            0.007139 0.019360 0.368800 0.093500 0.076900  0.808
Polyrachis.8             0.006228 0.016740 0.372100 0.125000 0.000000  0.817
Paratrechina.4           0.005458 0.014550 0.375000 0.062500 0.091500  0.825
Pachycondyla.2           0.005335 0.014540 0.366800 0.125000 0.000000  0.832
Doleromyrma.3            0.005103 0.013700 0.372500 0.125000 0.000000  0.840
Crematogaster.2          0.004783 0.017160 0.278700 0.000000 0.076900  0.847
Polyrachis.2             0.004583 0.012250 0.374000 0.125000 0.000000  0.853
Stigmacros.2             0.004238 0.015000 0.282500 0.000000 0.091500  0.859
Prolasius.7              0.004208 0.014990 0.280600 0.000000 0.076900  0.865
Anonychromyrma.2         0.003978 0.014140 0.281300 0.000000 0.076900  0.871
Polyrachis.7             0.003780 0.013410 0.281900 0.000000 0.076900  0.876
Stigmacros.1             0.003780 0.013410 0.281900 0.000000 0.076900  0.882
Pheidole.1               0.003758 0.013330 0.282000 0.000000 0.076900  0.887
Pristomyrmex.1           0.003564 0.012610 0.282500 0.000000 0.076900  0.892
Myrmecia.2               0.003360 0.013230 0.254000 0.062500 0.000000  0.897
Camponotis.26            0.003262 0.011510 0.283400 0.000000 0.076900  0.902
Camponotus.1             0.003262 0.011510 0.283400 0.000000 0.076900  0.907
Epopostruma.1            0.003262 0.011510 0.283400 0.000000 0.076900  0.911
Mayriella.1              0.003123 0.012280 0.254400 0.062500 0.000000  0.916
Oligomyrmex.1            0.003123 0.012280 0.254400 0.062500 0.000000  0.920
Anonychromyrma.3         0.003118 0.010990 0.283700 0.000000 0.076900  0.925
Myrmecorhrynchus.1       0.003118 0.010990 0.283700 0.000000 0.076900  0.929
Paratrechina.5           0.003118 0.010990 0.283700 0.000000 0.076900  0.934
Prolasius.3              0.003118 0.010990 0.283700 0.000000 0.076900  0.938
Oligomyrmex.2            0.003117 0.010990 0.283700 0.000000 0.076900  0.943
Prolasius.4              0.003117 0.010990 0.283700 0.000000 0.076900  0.947
Stigmacros.4             0.002945 0.011560 0.254800 0.062500 0.000000  0.952
Iridomyrmex.6            0.002910 0.011420 0.254800 0.062500 0.000000  0.956
Meranoplus.2             0.002732 0.010710 0.255100 0.062500 0.000000  0.960
Myrmecia.3               0.002732 0.010710 0.255100 0.062500 0.000000  0.964
Papyrius.1               0.002732 0.010710 0.255100 0.062500 0.000000  0.968
Heteroponera.1           0.002634 0.010290 0.255900 0.074300 0.000000  0.972
Rhopalomastix.1          0.002634 0.010290 0.255900 0.074300 0.000000  0.975
Melophorus.2             0.002413 0.009420 0.256200 0.074300 0.000000  0.979
Pheidole.6.1             0.002371 0.009270 0.255700 0.062500 0.000000  0.982
Prolasius.1              0.002215 0.008660 0.255900 0.062500 0.000000  0.985
Iridomyrmex.8            0.002029 0.007920 0.256200 0.062500 0.000000  0.988
Myrmecia.1               0.002029 0.007920 0.256200 0.062500 0.000000  0.991
Myrmecia.4               0.002029 0.007920 0.256200 0.062500 0.000000  0.994
Rhopalomastix.5          0.002029 0.007920 0.256200 0.062500 0.000000  0.997
Tetramorium.4            0.002029 0.007920 0.256200 0.062500 0.000000  1.000
Colobostruma.1           0.000000 0.000000      NaN 0.000000 0.000000  1.000
Colobostruma.2           0.000000 0.000000      NaN 0.000000 0.000000  1.000
Crematogaster.3          0.000000 0.000000      NaN 0.000000 0.000000  1.000
Disturbed.lost           0.000000 0.000000      NaN 0.000000 0.000000  1.000
Doleromyrma.2            0.000000 0.000000      NaN 0.000000 0.000000  1.000
Dolichonderus.1          0.000000 0.000000      NaN 0.000000 0.000000  1.000
Froggattella.1           0.000000 0.000000      NaN 0.000000 0.000000  1.000
Iridomyrmex.7            0.000000 0.000000      NaN 0.000000 0.000000  1.000
Leptomyrmex.1            0.000000 0.000000      NaN 0.000000 0.000000  1.000
Machomyrma.3             0.000000 0.000000      NaN 0.000000 0.000000  1.000
Machomyrma.6             0.000000 0.000000      NaN 0.000000 0.000000  1.000
Melophorus.1             0.000000 0.000000      NaN 0.000000 0.000000  1.000
Notoncus.3               0.000000 0.000000      NaN 0.000000 0.000000  1.000
Notoncus.4               0.000000 0.000000      NaN 0.000000 0.000000  1.000
```

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Pachychondyla.1           0.000000 0.000000      NaN 0.000000 0.000000  1.000
Paratrechina.6            0.000000 0.000000      NaN 0.000000 0.000000  1.000
Pheidole.2                0.000000 0.000000      NaN 0.000000 0.000000  1.000
Plagiolepis.1             0.000000 0.000000      NaN 0.000000 0.000000  1.000
Polyrachis.1              0.000000 0.000000      NaN 0.000000 0.000000  1.000
Polyrachis.5              0.000000 0.000000      NaN 0.000000 0.000000  1.000
Probolomyrmex.1           0.000000 0.000000      NaN 0.000000 0.000000  1.000
Prolasius.2               0.000000 0.000000      NaN 0.000000 0.000000  1.000
Rhopalomastix.2           0.000000 0.000000      NaN 0.000000 0.000000  1.000
Rhopalomastix.3           0.000000 0.000000      NaN 0.000000 0.000000  1.000
Solenopsis.1              0.000000 0.000000      NaN 0.000000 0.000000  1.000
Strumigenys.1             0.000000 0.000000      NaN 0.000000 0.000000  1.000
Strumigenys.2             0.000000 0.000000      NaN 0.000000 0.000000  1.000
Technomyrmex.1            0.000000 0.000000      NaN 0.000000 0.000000  1.000
Tetramorium.5             0.000000 0.000000      NaN 0.000000 0.000000  1.000
                             p
Tapinoma.1                0.599
Pheidole.5                0.979
Meranoplus.1              0.294
Iridomyrmex.purpureus     0.024 *
Crematogaster.1           0.015 *
Paratrechina.1            0.242
Machomyrma.1              0.135
Notoncus.1                0.807
Anonychromyrma.1          0.917
Pheidole.7                0.943
Paratrechina.2            0.501
Mesostruma.1              0.010 **
Camponotus.consobrinus    0.067 .
Ochetellus.1              0.066 .
Pheidole.6                0.090 .
Papyrius.2                0.064 .
Prolasius.6               0.019 *
Rhytidiponera..metallica. 0.994
Iridomyrmex.5             0.002 **
Doleromyrma.1             0.207
Camponotus.12             0.120
Pristomyrmex.2            0.547
Mayriella.2               0.184
Iridomyrmex.2             0.335
Tetramorium.3             0.978
Monomorium.1              0.973
Stigmacros.3              0.062 .
Pheidole.7.1              0.592
Machomyrma.4              0.059 .
Polyrachis.3              0.156
Iridomyrmex.4             0.389
Polyrachis.8              0.123
Paratrechina.4            0.951
Pachycondyla.2            0.489
Doleromyrma.3             0.922
Crematogaster.2           0.933
Polyrachis.2              0.482
Stigmacros.2              0.172
Prolasius.7               0.196
Anonychromyrma.2          0.201
Polyrachis.7              0.180
Stigmacros.1              0.547
Pheidole.1                0.150
Pristomyrmex.1            0.660
Myrmecia.2                0.269
Camponotis.26             0.188
Camponotus.1              0.188
Epopostruma.1             0.188
Mayriella.1               0.435
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Oligomyrmex.1             0.289
Anonychromyrma.3          0.162
Myrmecorhrynchus.1        0.162
Paratrechina.5            0.162
Prolasius.3               0.793
Oligomyrmex.2             0.383
Prolasius.4               0.179
Stigmacros.4              0.567
Iridomyrmex.6             0.268
Meranoplus.2              0.307
Myrmecia.3                0.877
Papyrius.1                0.659
Heteroponera.1            0.982
Rhopalomastix.1           0.840
Melophorus.2              0.568
Pheidole.6.1              0.312
Prolasius.1               0.850
Iridomyrmex.8             0.295
Myrmecia.1                0.734
Myrmecia.4                0.295
Rhopalomastix.5           0.295
Tetramorium.4             0.915
Colobostruma.1               NA
Colobostruma.2               NA
Crematogaster.3              NA
Disturbed.lost               NA
Doleromyrma.2                NA
Dolichonderus.1              NA
Froggattella.1               NA
Iridomyrmex.7                NA
Leptomyrmex.1                NA
Machomyrma.3                 NA
Machomyrma.6                 NA
Melophorus.1                 NA
Notoncus.3                   NA
Notoncus.4                   NA
Pachychondyla.1              NA
Paratrechina.6               NA
Pheidole.2                   NA
Plagiolepis.1                NA
Polyrachis.1                 NA
Polyrachis.5                 NA
Probolomyrmex.1              NA
Prolasius.2                  NA
Rhopalomastix.2              NA
Rhopalomastix.3              NA
Solenopsis.1                 NA
Strumigenys.1                NA
Strumigenys.2                NA
Technomyrmex.1               NA
Tetramorium.5                NA
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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Contrast: SRW_SSTF

                          average      sd   ratio     ava     avb cumsum     p
Rhytidiponera..metallica. 0.04104 0.03832 1.07100 0.79590 1.22640  0.055 0.043
Pheidole.5                0.03769 0.03488 1.08070 0.75730 1.08140  0.105 0.521
Anonychromyrma.1          0.03414 0.03631 0.94040 0.35530 0.49420  0.151 0.159
Crematogaster.1           0.03197 0.03498 0.91390 0.06250 0.56960  0.194 0.001
Notoncus.1                0.03025 0.03397 0.89040 0.48480 0.24530  0.234 0.210
Crematogaster.2           0.02819 0.03616 0.77980 0.43640 0.07690  0.272 0.002
Paratrechina.2            0.02653 0.03156 0.84050 0.33230 0.32220  0.307 0.026
Tetramorium.3             0.02548 0.03594 0.70910 0.29710 0.25510  0.341 0.331
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Tapinoma.1                0.02482 0.02975 0.83420 0.18750 0.38460  0.375 0.976
Pheidole.7                0.02373 0.03238 0.73280 0.26180 0.24530  0.406 0.813
Doleromyrma.3             0.02273 0.04161 0.54640 0.33670 0.00000  0.437 0.045
Machomyrma.1              0.02239 0.02844 0.78740 0.06250 0.41370  0.467 0.310
Paratrechina.1            0.02126 0.02826 0.75220 0.34410 0.15380  0.495 0.760
Monomorium.1              0.02010 0.03262 0.61610 0.27240 0.20030  0.522 0.734
Meranoplus.1              0.01999 0.03189 0.62690 0.24430 0.15380  0.549 0.941
Pheidole.6                0.01891 0.02798 0.67590 0.06250 0.32220  0.574 0.045
Pristomyrmex.2            0.01695 0.02842 0.59640 0.21340 0.15380  0.597 0.320
Doleromyrma.1             0.01634 0.02805 0.58260 0.06250 0.23080  0.619 0.180
Iridomyrmex.purpureus     0.01478 0.03071 0.48120 0.06250 0.20030  0.638 0.798
Camponotus.consobrinus    0.01432 0.02443 0.58630 0.06250 0.24530  0.657 0.324
Ochetellus.1              0.01295 0.02735 0.47330 0.06250 0.16840  0.675 0.393
Papyrius.2                0.01185 0.02480 0.47770 0.06250 0.15380  0.691 0.349
Paratrechina.4            0.01184 0.02555 0.46330 0.12500 0.09150  0.707 0.603
Machomyrma.4              0.01147 0.02801 0.40940 0.00000 0.15380  0.722 0.001
Stigmacros.1              0.01049 0.02273 0.46140 0.12500 0.07690  0.736 0.020
Prolasius.3               0.01023 0.02214 0.46200 0.13680 0.07690  0.750 0.084
Iridomyrmex.2             0.00886 0.02459 0.36050 0.12500 0.00000  0.761 0.709
Camponotus.12             0.00855 0.02058 0.41560 0.00000 0.15380  0.773 0.637
Prolasius.6               0.00839 0.02076 0.40400 0.00000 0.16840  0.784 0.560
Technomyrmex.1            0.00803 0.02179 0.36870 0.12500 0.00000  0.795 0.122
Myrmecia.3                0.00801 0.02194 0.36520 0.12500 0.00000  0.805 0.358
Pachycondyla.2            0.00789 0.02131 0.37050 0.13680 0.00000  0.816 0.224
Heteroponera.1            0.00707 0.01918 0.36850 0.12500 0.00000  0.826 0.762
Dolichonderus.1           0.00704 0.01901 0.37050 0.12500 0.00000  0.835 0.132
Machomyrma.3              0.00691 0.01861 0.37110 0.12500 0.00000  0.844 0.549
Mayriella.2               0.00680 0.01792 0.37930 0.06250 0.07690  0.853 0.744
Iridomyrmex.4             0.00676 0.01782 0.37960 0.06250 0.07690  0.862 0.418
Oligomyrmex.2             0.00618 0.01621 0.38110 0.06250 0.07690  0.871 0.029
Mesostruma.1              0.00606 0.02144 0.28260 0.00000 0.09150  0.879 0.804
Prolasius.7               0.00548 0.01943 0.28180 0.00000 0.07690  0.886 0.002
Stigmacros.2              0.00528 0.01860 0.28390 0.00000 0.09150  0.893 0.002
Anonychromyrma.2          0.00510 0.01803 0.28260 0.00000 0.07690  0.900 0.001
Polyrachis.7              0.00478 0.01687 0.28330 0.00000 0.07690  0.906 0.003
Pheidole.1                0.00474 0.01674 0.28340 0.00000 0.07690  0.913 0.003
Pristomyrmex.1            0.00444 0.01564 0.28390 0.00000 0.07690  0.918 0.559
Camponotis.26             0.00398 0.01399 0.28470 0.00000 0.07690  0.924 0.002
Camponotus.1              0.00398 0.01399 0.28470 0.00000 0.07690  0.929 0.002
Epopostruma.1             0.00398 0.01399 0.28470 0.00000 0.07690  0.934 0.002
Polyrachis.3              0.00398 0.01399 0.28470 0.00000 0.07690  0.940 0.495
Anonychromyrma.3          0.00377 0.01324 0.28510 0.00000 0.07690  0.945 0.004
Myrmecorhrynchus.1        0.00377 0.01324 0.28510 0.00000 0.07690  0.950 0.004
Paratrechina.5            0.00377 0.01324 0.28510 0.00000 0.07690  0.955 0.004
Prolasius.4               0.00377 0.01323 0.28510 0.00000 0.07690  0.960 0.004
Prolasius.1               0.00367 0.01449 0.25330 0.06250 0.00000  0.965 0.669
Strumigenys.1             0.00344 0.01357 0.25380 0.06250 0.00000  0.970 0.482
Solenopsis.1              0.00342 0.01348 0.25380 0.06250 0.00000  0.974 0.769
Pachychondyla.1           0.00337 0.01328 0.25400 0.06250 0.00000  0.979 0.275
Rhopalomastix.1           0.00334 0.01313 0.25400 0.06250 0.00000  0.983 0.761
Pheidole.7.1              0.00318 0.01252 0.25430 0.06250 0.00000  0.987 0.956
Prolasius.2               0.00318 0.01252 0.25430 0.06250 0.00000  0.992 0.550
Stigmacros.4              0.00318 0.01252 0.25430 0.06250 0.00000  0.996 0.440
Stigmacros.3              0.00311 0.01086 0.28600 0.00000 0.07690  1.000 0.720
Colobostruma.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Colobostruma.2            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Crematogaster.3           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Disturbed.lost            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Doleromyrma.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Froggattella.1            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.6             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.7             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Iridomyrmex.8             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Leptomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
```

```
Machomyrma.6              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Mayriella.1               0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Melophorus.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Melophorus.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Meranoplus.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.1                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Myrmecia.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.3                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Notoncus.4                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Oligomyrmex.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Papyrius.1                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Paratrechina.6            0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.2                0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Pheidole.6.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Plagiolepis.1             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.1              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.2              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.5              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Polyrachis.8              0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Probolomyrmex.1           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.2           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.3           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Rhopalomastix.5           0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Strumigenys.2             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Tetramorium.4             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA
Tetramorium.5             0.00000 0.00000     NaN 0.00000 0.00000  1.000    NA

Rhytidiponera..metallica. *
Pheidole.5
Anonychromyrma.1
Crematogaster.1           **
Notoncus.1
Crematogaster.2           **
Paratrechina.2            *
Tetramorium.3
Tapinoma.1
Pheidole.7
Doleromyrma.3             *
Machomyrma.1
Paratrechina.1
Monomorium.1
Meranoplus.1
Pheidole.6                *
Pristomyrmex.2
Doleromyrma.1
Iridomyrmex.purpureus
Camponotus.consobrinus
Ochetellus.1
Papyrius.2
Paratrechina.4
Machomyrma.4              **
Stigmacros.1              *
Prolasius.3               .
Iridomyrmex.2
Camponotus.12
Prolasius.6
Technomyrmex.1
Myrmecia.3
Pachycondyla.2
Heteroponera.1
Dolichonderus.1
Machomyrma.3
Mayriella.2
Iridomyrmex.4
```

```
Oligomyrmex.2            *
Mesostruma.1
Prolasius.7              **
Stigmacros.2             **
Anonychromyrma.2         **
Polyrachis.7             **
Pheidole.1               **
Pristomyrmex.1
Camponotis.26            **
Camponotus.1             **
Epopostruma.1            **
Polyrachis.3
Anonychromyrma.3         **
Myrmecorhrynchus.1       **
Paratrechina.5           **
Prolasius.4              **
Prolasius.1
Strumigenys.1
Solenopsis.1
Pachychondyla.1
Rhopalomastix.1
Pheidole.7.1
Prolasius.2
Stigmacros.4
Stigmacros.3
Colobostruma.1
Colobostruma.2
Crematogaster.3
Disturbed.lost
Doleromyrma.2
Froggattella.1
Iridomyrmex.5
Iridomyrmex.6
Iridomyrmex.7
Iridomyrmex.8
Leptomyrmex.1
Machomyrma.6
Mayriella.1
Melophorus.1
Melophorus.2
Meranoplus.2
Myrmecia.1
Myrmecia.2
Myrmecia.4
Notoncus.3
Notoncus.4
Oligomyrmex.1
Papyrius.1
Paratrechina.6
Pheidole.2
Pheidole.6.1
Plagiolepis.1
Polyrachis.1
Polyrachis.2
Polyrachis.5
Polyrachis.8
Probolomyrmex.1
Rhopalomastix.2
Rhopalomastix.3
Rhopalomastix.5
Strumigenys.2
Tetramorium.4
Tetramorium.5
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Permutation: free
Number of permutations: 999
```

Exercise: Which species of ants are the most important for the separation of communities?