

# 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 (1<sup>st</sup> and 2<sup>nd</sup> 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

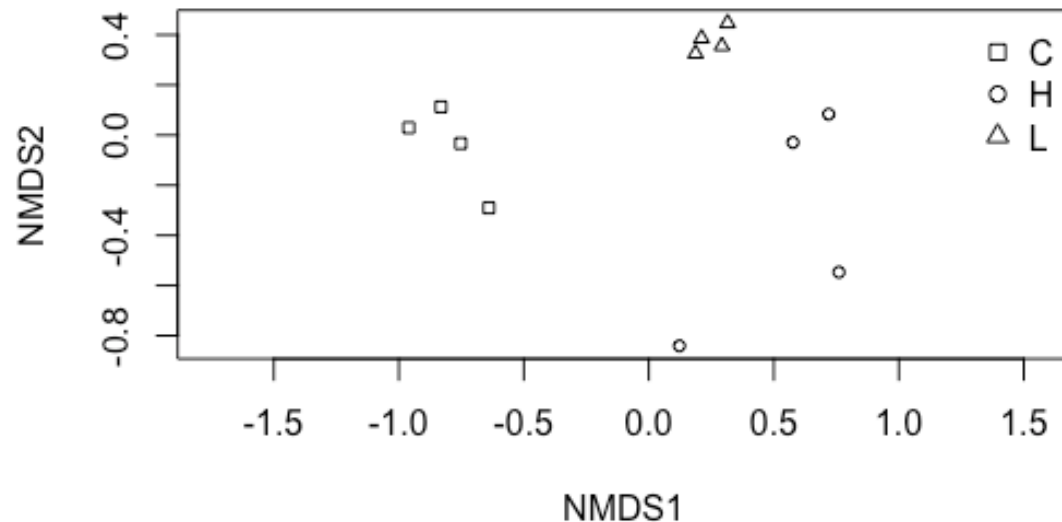
```

#### 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:
```

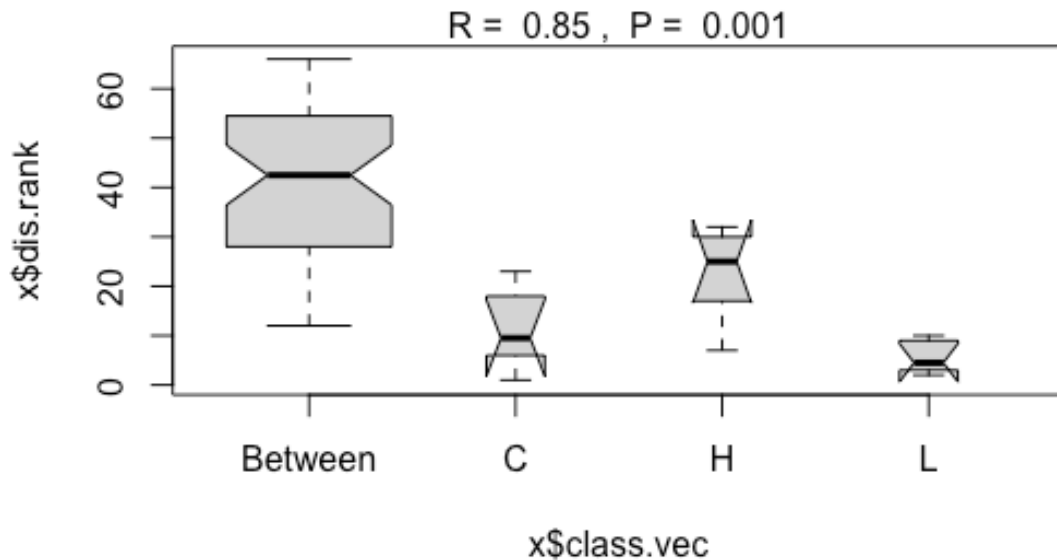
|         | 0% | 25%   | 50%  | 75%   | 100% | N  |
|---------|----|-------|------|-------|------|----|
| Between | 12 | 28.50 | 42.5 | 54.25 | 66   | 48 |
| C       | 1  | 6.50  | 9.5  | 16.25 | 23   | 6  |
| H       | 7  | 18.25 | 25.0 | 29.50 | 32   | 6  |
| L       | 2  | 3.25  | 4.5  | 8.00  | 10   | 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 deviation (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    |
| Stenhelvia.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    |
| Bulbaph.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     |
| Stenhelvia.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 *   |
| Bulbaph.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
Bulbaph.imus  0.00000 0.00000      NaN 0.00000 0.00000 1.000      NA
Leptopsypara 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 Communities

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

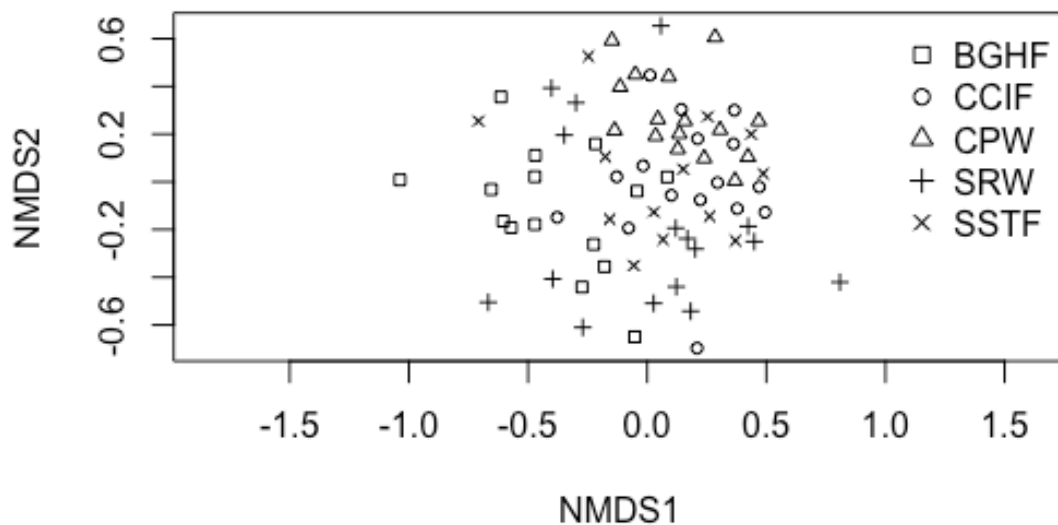
```

#### 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 communities?

**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 |
| Anonychomyrma.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 |
| Leptomymex.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 |
| Anonychomyrma.2            | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Anonychomyrma.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    |
| Dolichoderus.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    |
| Myrmecorhynchus.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    |
| Pachychondyla.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              | ***     |         |         |         |         |       |       |
| Anonychomyrma.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           |    |
| Anonychomyrma.2        |    |
| Anonychomyrma.3        |    |
| Camponotus.26          |    |
| Camponotus.1           |    |
| Disturbed.lost         |    |
| Dolichoderus.1         |    |
| Epopostruma.1          |    |
| Iridomyrmex.5          |    |
| Iridomyrmex.6          |    |
| Iridomyrmex.8          |    |
| Machomyrma.4           |    |



Meranoplus.2  
 Myrmecia.2  
 Myrmecia.4  
 Myrmecorhynchus.1  
 Oligomyrmex.1  
 Oligomyrmex.2  
 Pachychondyla.1  
 Pachychondyla.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

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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 |
| Anonychomyrma.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 |
| Stigmatoceros.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 |
| Anonychomyrma.2   | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Anonychomyrma.3   | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Camponotus.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    |
| Dolichoderus.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    |
| Myrmecorhynchus.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    |
| Stigmatoceros.1   | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Stigmatoceros.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      | .       |         |         |         |         |       |       |

Anonychomyrma.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

Myrmecia.4  
 Rhopalomastix.5  
 Anonychomyrma.2  
 Anonychomyrma.3  
 Camponotus.26  
 Camponotus.1  
 Colobostruma.2  
 Crematogaster.3  
 Disturbed.10st  
 Doleromyrma.2  
 Dolichoderus.1  
 Epopostruma.1  
 Froggattella.1  
 Iridomyrmex.7  
 Machomyrma.3  
 Machomyrma.4  
 Machomyrma.6  
 Melophorus.1  
 Myrmecorhynchus.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 |
| Anonychomyrma.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 |

|                        |         |         |         |         |         |       |       |
|------------------------|---------|---------|---------|---------|---------|-------|-------|
| 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 |
| Stigmatos.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 |
| Stigmatos.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 |
| Anonychomyrma.2        | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Anonychomyrma.3        | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Camponotus.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    |
| Myrmecorhynchus.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    |

|                           |         |         |     |         |         |       |    |
|---------------------------|---------|---------|-----|---------|---------|-------|----|
| 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. | *       |         |     |         |         |       |    |
| Anonychomyrma.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                | .       |         |     |         |         |       |    |
| Dolichoderus.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           |         |         |     |         |         |       |    |

Stigmacros.4  
 Mayriella.1  
 Mesostruma.1  
 Ochetellus.1  
 Oligomyrmex.2  
 Pheidole.6  
 Anonychomyrma.2  
 Anonychomyrma.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  
 Myrmecorhynchus.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 |
| Anonychomyrma.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 |

|                        |         |         |         |         |         |       |       |
|------------------------|---------|---------|---------|---------|---------|-------|-------|
| 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 |
| Anonychomyrma.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 |
| Camponotus.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 |
| Plagirolepis.1         | 0.00363 | 0.01383 | 0.26270 | 0.06670 | 0.00000 | 0.929 | 0.268 |
| Anonychomyrma.3        | 0.00356 | 0.01252 | 0.28420 | 0.00000 | 0.07690 | 0.934 | 0.054 |
| Myrmecorhynchus.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    |
| Dolichoderus.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    |



|                           |                 |                     |       |    |
|---------------------------|-----------------|---------------------|-------|----|
| 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 |
| Pachychondyla.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 |
| Stigmatoceros.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             | **              |                     |       |    |
| Anonychomyrma.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               | .               |                     |       |    |
| Stigmatoceros.2           | .               |                     |       |    |
| Anonychomyrma.2           | *               |                     |       |    |
| Polyrachis.7              | *               |                     |       |    |
| Stigmatoceros.1           |                 |                     |       |    |

```

Pheidole.1 .
Paratrechina.6
Prolasius.2
Prolasius.1
Strumigenys.2
Camponotus.26 *
Camponotus.1 *
Epopostruma.1 *
Polyrachis.3
Plagiolepis.1
Anonychomyrma.3 .
Myrmecorhynchus.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
Dolichoderus.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
Pachychondyla.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 |
| Anonychomyrma.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 |
| Anonychomyrma.2           | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Anonychomyrma.3           | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Camponotus.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 |
| 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 |
| Dolichoderus.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 |
| Leptomymex.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 |
| Myrmecorhynchus.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 |
| Oligomymex.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. |         |         |     |         |         |       |    |
| Anonychomyrma.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  
 Anonychomyrma.2  
 Anonychomyrma.3  
 Camponotus.26  
 Camponotus.1  
 Colobostruma.1  
 Crematogaster.2  
 Disturbed.lost  
 Dolichoderus.1  
 Epopostruma.1  
 Leptomyrmex.1  
 Machomyrma.4  
 Myrmecorhynchus.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 |
| Anonychomyrma.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 |
| Dolichoderus.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 |

|                              |         |         |         |         |         |       |       |
|------------------------------|---------|---------|---------|---------|---------|-------|-------|
| 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 |
| Stigmatocros.3               | 0.00267 | 0.01044 | 0.25580 | 0.06250 | 0.00000 | 1.000 | 0.820 |
| Anonychomyrma.2              | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Anonychomyrma.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    |
| Leptomymex.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    |
| Myrmecorhynchus.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    |
| Plagirolepis.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    |
| Stigmatocros.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                   | *       |         |         |         |         |       |       |
| Anonychomyrma.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          |     |
| Dolichoderus.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           |     |
| Anonychomyrma.2        |     |
| Anonychomyrma.3        |     |
| Camponotus.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             |     |
| Myrmecorhynchus.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 |
| Anonychomyrma.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 |
| Anonychomyrma.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 |

|                           |         |         |         |         |         |       |       |
|---------------------------|---------|---------|---------|---------|---------|-------|-------|
| 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 |
| Anonychomyrma.3           | 0.00351 | 0.01228 | 0.28590 | 0.00000 | 0.07690 | 0.940 | 0.067 |
| Myrmecorhynchus.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.10st            | 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    |
| Dolichoderus.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    |
| Pachychondyla.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                |         |         |         |         |         |       |       |
| Anonychomyrma.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           | .  |
| Anonychomyrma.2        | .  |
| Polyrachis.7           | .  |
| Stigmacros.1           | .  |
| Pheidole.1             | .  |
| Pristomyrmex.1         |    |
| Doleromyrma.2          |    |
| Polyrachis.1           |    |
| Rhopalomastix.2        |    |
| Camponotus.26          | .  |
| Camponotus.1           | .  |
| Epopostruma.1          | .  |
| Melophorus.1           |    |
| Anonychomyrma.3        | .  |
| Myrmecorhynchus.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          |    |

Leptomymex.1  
 Mayriella.1  
 Meranoplus.2  
 Myrmecia.1  
 Myrmecia.2  
 Myrmecia.3  
 Myrmecia.4  
 Notoncus.3  
 Oligomymex.1  
 Pachychondyla.1  
 Pachychondyla.2  
 Paratrechina.6  
 Pheidole.2  
 Pheidole.6.1  
 Pheidole.7.1  
 Plagiolepis.1  
 Polyrachis.8  
 Probolomymex.1  
 Prolasius.2  
 Rhopalomastix.3  
 Rhopalomastix.5  
 Solenopsis.1  
 Stigmacros.4  
 Strumigenys.2  
 Technomymex.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 |
| Iridomymex.purpureus      | 0.02813 | 0.03357 | 0.83820 | 0.54280 | 0.06250 | 0.300  | 0.013 |
| Machomymra.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 |
| Doleromymra.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 |
| Anonychomymra.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 |
| Iridomymex.5              | 0.01798 | 0.02888 | 0.62260 | 0.34800 | 0.00000 | 0.517  | 0.001 |
| Iridomymex.2              | 0.01790 | 0.02762 | 0.64800 | 0.27370 | 0.12500 | 0.540  | 0.034 |
| Pristomymex.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 |
| Pachychondyla.2           | 0.01123 | 0.02188 | 0.51330 | 0.12500 | 0.13680 | 0.767  | 0.025 |
| Doleromymra.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 |

|                   |         |         |         |         |         |       |       |
|-------------------|---------|---------|---------|---------|---------|-------|-------|
| 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 |
| Anonychomyrma.2   | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Anonychomyrma.3   | 0.00000 | 0.00000 | NaN     | 0.00000 | 0.00000 | 1.000 | NA    |
| Camponotus.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    |
| Myrmecorhynchus.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    |

|               |                 |                     |       |    |
|---------------|-----------------|---------------------|-------|----|
| 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         |     |
| Anonychomyrma.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            |     |
| Dolichoderus.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
Anonychomyrma.2
Anonychomyrma.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
Myrmecorhynchus.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  |
| Anonychomyrma.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  |

|                   |          |          |          |          |          |       |
|-------------------|----------|----------|----------|----------|----------|-------|
| 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 |
| Anonychomyrma.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 |
| Camponotus.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 |
| Anonychomyrma.3   | 0.003118 | 0.010990 | 0.283700 | 0.000000 | 0.076900 | 0.925 |
| Myrmecorhynchus.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 |
| Dolichoderus.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 |



|                           |          |          |     |          |          |       |
|---------------------------|----------|----------|-----|----------|----------|-------|
| 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    |          |     |          |          |       |
| Anonychomyrma.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    |          |     |          |          |       |
| Anonychomyrma.2           | 0.201    |          |     |          |          |       |
| Polyrachis.7              | 0.180    |          |     |          |          |       |
| Stigmacros.1              | 0.547    |          |     |          |          |       |
| Pheidole.1                | 0.150    |          |     |          |          |       |
| Pristomyrmex.1            | 0.660    |          |     |          |          |       |
| Myrmecia.2                | 0.269    |          |     |          |          |       |
| Camponotus.26             | 0.188    |          |     |          |          |       |
| Camponotus.1              | 0.188    |          |     |          |          |       |
| Epopostruma.1             | 0.188    |          |     |          |          |       |
| Mayriella.1               | 0.435    |          |     |          |          |       |

|                   |       |
|-------------------|-------|
| Oligomyrmex.1     | 0.289 |
| Anonychomyrma.3   | 0.162 |
| Myrmecorhynchus.1 | 0.162 |
| Paratrechina.5    | 0.162 |
| Prolasius.3       | 0.793 |
| Oligomyrmex.2     | 0.383 |
| Prolasius.4       | 0.179 |
| Stigmatopora.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    |
| Dolichoderus.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     |
|---------------------------|---------|---------|---------|---------|---------|--------|-------|
| Rhytidoponera..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 |
| Anonychomyrma.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 |

|                        |         |         |         |         |         |       |       |
|------------------------|---------|---------|---------|---------|---------|-------|-------|
| 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 |
| Dolichoderus.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 |
| Mesostroma.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 |
| Anonychomyrma.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 |
| Camponotus.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 |
| Anonychomyrma.3        | 0.00377 | 0.01324 | 0.28510 | 0.00000 | 0.07690 | 0.945 | 0.004 |
| Myrmecorhynchus.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    |
| Leptomymex.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 |
| Plagiolipsis.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                  |         |         |     |         |         |       |    |
| Anonychomyrma.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              |         |         |     |         |         |       |    |
| Dolichoderus.1              |         |         |     |         |         |       |    |
| Machomyrma.3                |         |         |     |         |         |       |    |
| Mayriella.2                 |         |         |     |         |         |       |    |
| Iridomyrmex.4               |         |         |     |         |         |       |    |

|                   |     |
|-------------------|-----|
| Oligomyrmex.2     | *   |
| Mesostruma.1      |     |
| Prolasius.7       | **  |
| Stigmatos.2       | **  |
| Anonychomyrma.2   | *** |
| Polyrachis.7      | **  |
| Pheidole.1        | **  |
| Pristomyrmex.1    |     |
| Camponotus.26     | **  |
| Camponotus.1      | **  |
| Epopostruma.1     | **  |
| Polyrachis.3      |     |
| Anonychomyrma.3   | **  |
| Myrmecorhynchus.1 | **  |
| Paratrechina.5    | **  |
| Prolasius.4       | **  |
| Prolasius.1       |     |
| Strumigenys.1     |     |
| Solenopsis.1      |     |
| Pachychondyla.1   |     |
| Rhopalomastix.1   |     |
| Pheidole.7.1      |     |
| Prolasius.2       |     |
| Stigmatos.4       |     |
| Stigmatos.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?